

APPENDIX C: Reliability Assessment Study Results

Monitored Facility	Contingency Description	Category	Category Description	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Summer Off-Peak	2040 Winter Peak	2027 9P Summer & Min Gas Gen	2027 OP Sensitivity	2030 9P High CEC Forecast	Project & Potential Mitigation
24393 NM VINCENT 11 500 24393 NM VINCENT 12 500 1.1	P1-2.40-24. MIDWAY-VINCENT 200V 200	P1-2	L-1	1027%	1038%	34%	91%	48%	48%	53%	38%	102%	43%	103%	Existing operational procedure.
24393 NM VINCENT 21 500 24393 NM VINCENT 22 500 2.1	P1-2.40-23. MIDWAY-VINCENT 500V 100	P1-2	L-1	100%	100%	64%	91%	47%	48%	54%	18%	104%	46%	105%	
30005 ROUND MT 500 30065 RD MT 1M 500 1.1	P1-2.40-1. CAPTACK-OLINDA 200V 10	P1-2	L-1	6%	20%	42%	54%	88%	92%	73%	104%	18%	87%	18%	Continue to monitor
30005 ROUND MT 500 30065 RD MT 1M 500 1.1	P1-2.40-1. OLINDA 200V 10	P1-2	L-1	38%	27%	99%	19%	89%	99%	86%	113%	7%	90%	27%	Continue to monitor
30040 TESLA 500 30042 METCALF 500 1.1	P1-2.1	L-1	52%	73%	26%	52%	50%	27%	10%	18%	86%	29%	104%	104%	Sensitivity only
30040 TESLA 500 31856 TESLA 6M 118.8 1.1	P1-2.40-12. TESLA-METCALF 500V 16110	P1-2	L-1	74%	61%	42%	74%	47%	70%	53%	61%	113%	47%	88%	Sensitivity only
30040 TESLA 500 31856 TESLA 6M 118.8 1.1	P1-2.40-16. TESLA 500V 200V 10	P1-2	L-1	74%	61%	42%	74%	47%	70%	53%	61%	113%	47%	88%	Sensitivity only
30055 GATES 500 34607 GATES112M 118.12 1.1	P1-2.40-17. GATES 500V 230V 12	P1-3	L-1	26%	58%	23%	85%	60%	43%	98%	96%	129%	52%	131%	
30055 GATES 500 34607 GATES112M 118.12 1.1	P1-2.40-15. LOSBANOS 500V 230V 10	P1-3	L-1	28%	48%	21%	65%	45%	23%	73%	74%	95%	39%	103%	
30055 GATES 500 34607 GATES112M 118.12 1.1	P1-2.40-16. GATES 500V 230V 12	P1-3	L-1	29%	51%	21%	66%	49%	19%	78%	76%	93%	43%	105%	Sensitivity only
30055 GATES 500 34607 GATES112M 118.12 1.1	P1-2.40-19. MIDWAY 500V 230V 12	P1-3	L-1	29%	51%	21%	66%	49%	19%	78%	76%	93%	43%	105%	
30055 GATES 500 34607 GATES112M 118.12 1.1	P1-2.40-18. MIDWAY 500V 230V 10	P1-3	L-1	29%	51%	21%	66%	49%	19%	78%	76%	93%	43%	105%	
30055 GATES 500 34607 GATES112M 118.12 1.1	P1-2.40-22. MANNING 500V 230V 2	P1-3	L-1	N/A	50%	22%	69%	N/A	23%	75%	78%	N/A	N/A	105%	
30245 ROUND MT 230 30065 RD MT 1M 500 1.1	P1-2.40-1. CAPTACK-OLINDA 500V 10	P1-2	L-1	6%	20%	40%	54%	86%	91%	73%	103%	18%	86%	18%	Continue to monitor
30245 ROUND MT 230 30065 RD MT 1M 500 1.1	P1-2.40-1. OLINDA 500V 230V 10	P1-2	L-1	38%	26%	99%	19%	89%	97%	83%	113%	7%	90%	26%	
30390 VASCOVINDCT 230 30330 CASTANEO 230 1.1	P1-2.40-13. TESLA-METCALF 500V 16110	P1-2	L-1	80%	97%	81%	103%	61%	86%	91%	91%	71%	46%	71%	
30390 VASCOVINDCT 230 30330 CASTANEO 230 1.1	P1-2.40-17. MANNING - METCALF 500 KV 10	P1-2	L-1	N/A	N/A	85%	103%	N/A	96%	35%	97%	N/A	N/A	N/A	Continue to monitor
30390 VASCOVINDCT 230 30330 CASTANEO 230 1.1	P1-2.40-15. TESLA-METCALF 500V 16110	P1-2	L-1	N/A	N/A	85%	103%	N/A	96%	35%	97%	N/A	N/A	N/A	
30622 EIGHT M 230 30624 TESLA 6 230 1.1	P1-2.40-15. TABLE MTN 500V 230V 10	P1-3	L-1	0%	16%	17%	11%	148%	11%	20%	24%	31%	149%	3%	Project: Table MtN 500V/230V Transformer
30640 TESLA 6 230 30655 PRASCT 230 1.1	P1-2.40-12. TESLA-METCALF 500V 16110	P1-2	L-1	70%	80%	81%	104%	37%	30%	34%	78%	67%	38%	80%	Continue to monitor
30640 TESLA 6 230 30655 PRASCT 230 1.1	P1-2.40-15. MANNING - METCALF 500 KV 10	P1-2	L-1	N/A	N/A	85%	103%	N/A	96%	35%	97%	N/A	N/A	N/A	
30640 TESLA 6 230 30655 PRASCT 230 1.1	P1-2.40-18. TESLA 500V 230V 12	P1-3	L-1	64%	78%	84%	103%	34%	30%	37%	60%	77%	37%	65%	
30640 TESLA 6 230 31856 TESLA 6M 118.8 1.1	P1-2.40-12. TESLA-METCALF 500V 16110	P1-2	L-1	74%	61%	42%	74%	46%	68%	53%	60%	113%	47%	87%	
30640 TESLA 6 230 31856 TESLA 6M 118.8 1.1	P1-2.40-16. TESLA 500V 230V 12	P1-3	L-1	74%	61%	42%	74%	46%	68%	53%	60%	113%	47%	87%	Sensitivity only
30655 PRASCT 230 30651 NEWARK 6 230 2.1	P1-2.40-12. TESLA-METCALF 500V 16110	P1-2	L-1	82%	106%	70%	90%	43%	26%	30%	68%	79%	43%	95%	Project: Tesla Newark 230V Line No. 2 Reconducting
30731 LS ESTES 230 38901 335 230 1.1	P1-2.40-14. METCALF-MOSSLANDING 500V 16090	P1-2	L-1	86%	92%	96%	100%	70%	84%	92%	104%	83%	70%	89%	
30731 LS ESTES 230 38901 335 230 1.1	P1-2.40-14. METCALF-MOSSLANDING 500V 16090	P1-2	L-1	86%	92%	96%	100%	70%	84%	92%	104%	83%	70%	89%	
30731 LS ESTES 230 38901 335 230 1.1	P1-2.40-12. METCALF 500V 230V 12	P1-3	L-1	86%	92%	96%	100%	70%	84%	92%	104%	83%	70%	89%	Continue to monitor
30731 LS ESTES 230 38901 335 230 1.1	P1-2.40-12. METCALF 500V 230V 12	P1-3	L-1	86%	92%	96%	100%	70%	84%	92%	104%	83%	70%	89%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-12. METCALF 500V 230V 12	P1-3	L-1	N/A	N/A	96%	100%	N/A	96%	N/A	N/A	N/A	N/A	N/A	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-12. METCALF 500V 230V 12	P1-3	L-1	N/A	61%	99%	99%	N/A	63%	81%	110%	N/A	N/A	48%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-12. METCALF 500V 230V 12	P1-3	L-1	N/A	61%	99%	99%	N/A	63%	81%	110%	N/A	N/A	48%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-12. METCALF 500V 230V 12	P1-3	L-1	N/A	61%	99%	99%	N/A	63%	81%	110%	N/A	N/A	48%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-11. TRAC-LOSANOS 500V 16100	P1-2	L-1	63%	51%	97%	94%	53%	61%	79%	108%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%	80%	109%	56%	57%	40%	
30731 METCALF 230 30731 LS ESTES 230 1.2	P1-2.40-13. TRAC-LOSANOS 500V 16100	P1-2	L-1	64%	51%	97%	94%	53%	62%						

Monitored Facility	Contingency Description	Category	Category Description	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 5P Heavy Renewables & Min Gas (Gt)	2027 OP Sensitivity	2030 5P High CEC Forecast	Project & Potential Mitigation
30001 RM FR 11 500 30060 FERNDAOS 500 1 1	P2-LAD-5: ROUND MTN.FERN RD #2 500KV [9502] (ROUND MT.RM. FR. 22)	P2-1	bus-bkr 122% 117% 8%	102%	38%	62%	12%	58%	117%	38%	116%				
30001 RM FR 22 500 30060 FERNDAOS 500 2 1	P2-LAD-5: ROUND MTN.FERN RD #1 500KV [9501] (ROUND MT.RM. FR. 11)	P2-1	bus-bkr 122% 117% 8%	102%	38%	62%	12%	58%	117%	38%	116%				
30000 FERNDAOS 500 30004 FR TM 11 500 1 1	P2-LAD-21: TABLE MTR.FERN RD #2 500KV [9504] (FR. TM. 22-TABLE MTR)	P2-1	bus-bkr 110% 107% 21%	91%	38%	28%	9%	28%	106%	38%	106%				
30000 FERNDAOS 500 30004 FR TM 21 500 2 1	P2-LAD-19: TABLE MTR.FERN RD #1 500KV [9503] (FR. TM. 12-TABLE MTR)	P2-1	bus-bkr 110% 107% 21%	91%	38%	28%	9%	28%	106%	38%	106%				
30002 MN RM 11 500 30001 MN RM 12 500 1 1	P2-LAD-00: MALIN ROUND MT 500KV [26020]	PS	N-1/N-1 120% 123% <100%	112%	<100%	<100%	<100%	<100%	109%	<100%	108%				
40887 MALIN 500 30002 MN RM 11 500 1 1	P2-LAD-00: MALIN ROUND MT 500KV [26020]	PS	N-1/N-1 111% 114% <100%	104%	<100%	<100%	<100%	<100%	101%	<100%	100%				
30003 MN RM 12 500 30005 ROUND MT 500 1 1	P2-LAD-00: MALIN ROUND MT 500KV [26020]	PS	N-1/N-1 110% 114% <100%	104%	<100%	<100%	<100%	<100%	101%	<100%	<100%				
30006 MN RM 23 500 30005 ROUND MT 500 2 1	CAPTACK OLINDA 500KV (I)	PS	N-1/N-1 10444% 10487% <100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%				
30005 ROUND MT 500 30003 RM FR 22 500 1 1	ROUND MT.FERNDAOS 500KV [50]	PS	N-1/N-1 10911% 11085% <100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%				
30005 ROUND MT 500 30003 RM FR 21 500 1 1	ROUND MT.FERNDAOS 500KV [20]	PS	N-1/N-1 10911% 11085% <100%	10404%	<100%	<100%	<100%	<100%	<100%	<100%	<100%				
30330 RIO OSD 230 30335 ATLANTIC 230 1 1	TESLA 500/230KV TB 2	PS	N-1/N-1 <100% <100%	<100%	<100%	11105%	<100%	<100%	<100%	<100%	<100%				
300153 TM TS 11 500 300154 TM TS 12 500 1 1	P2-LAD-22: TABLE MTR.VACA 500KV [0290] (TM. VD. 12-VACA-050)	P2-1	bus-bkr 100% 100%	28%	80%	20%	14%	19%	13%	102%	21%	101%			
300153 TM TS 11 500 300154 TM TS 12 500 1 1	P2-LAD-06: TABLE MTR.VACA 500KV [0290] (TABLE MTR TM. VD. 11)	P2-1	bus-bkr 100% 100%	27%	80%	19%	13%	19%	11%	102%	20%	101%			
300504 LB MW 23 500 30050 MIDWAY 500 2 1	P2-LAD-30: GATES 500KV - Middle Breaker Bay 4	P2-3	bus-bkr 25% 24%	113%	24%	13%	109%	55%	60%	10%	73%	10%			
300504 LB MW 23 500 30050 MIDWAY 500 2 1	P2-LAD-35: MIDWAY 500KV - Middle Breaker Bay 1	P2-3	bus-bkr 37% 37%	102%	44%	63%	93%	41%	50%	27%	66%	26%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-14: MANNING - METCALF 500KV [5] No Fault	P2-1	bus-bkr N/A N/A	99%	100%	N/A	99%	88%	97%	N/A	N/A	N/A			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-55: METCALF - MANNING 500KV [5] No Fault	P2-1	bus-bkr N/A N/A	99%	100%	N/A	100%	88%	97%	N/A	N/A	N/A			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-10: TRACY 500KV - Middle Breaker Bay 2	P2-3	bus-bkr N/A 92%	99%	103%	N/A	100%	88%	96%	N/A	N/A	95%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-11: TRACY 500KV - Middle Breaker Bay 1	P2-3	bus-bkr N/A 92%	99%	103%	N/A	100%	88%	97%	N/A	N/A	95%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-12: TESLA 500KV - Middle Breaker Bay 1	P2-3	bus-bkr N/A 92%	99%	104%	N/A	100%	88%	96%	N/A	N/A	94%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-13: TESLA 500KV - Middle Breaker Bay 3	P2-3	bus-bkr N/A 94%	99%	105%	N/A	100%	88%	97%	N/A	N/A	97%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-17: METCALF 500KV - Middle Breaker Bay 1	P2-3	bus-bkr N/A 94%	99%	105%	N/A	100%	88%	97%	N/A	N/A	96%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-18: METCALF 500KV - Middle Breaker Bay 2	P2-3	bus-bkr N/A 92%	99%	104%	N/A	100%	88%	96%	N/A	N/A	94%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-21: MOSSLAND 500KV - Middle Breaker Bay 4	P2-3	bus-bkr N/A 92%	99%	104%	N/A	100%	88%	96%	N/A	N/A	95%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-22: MOSSLAND 500KV - Middle Breaker Bay 1	P2-3	bus-bkr N/A 92%	99%	103%	N/A	100%	88%	96%	N/A	N/A	95%			
356166 SKVLINE 230 356167 SANJOSEB230 230 1 1	P2-LAD-23: MOSSLAND 500KV - Middle Breaker Bay 2	P2-3	bus-bkr N/A 92%	99%	103%	N/A	99%	87%	96%	N/A	N/A	94%			
356166 SANJOSEB230 230 356169 SB 0F 115 1 1	P2-LAD-16: TESLA 500KV - Middle Breaker Bay 2	P2-3	bus-bkr N/A 104%	89%	36%	N/A	70%	56%	78%	N/A	N/A	104%			
356169 SANJOSEB230 230 356169 SB 0F 115 1 1	P2-LAD-17: METCALF 500KV - Middle Breaker Bay 1	P2-3	bus-bkr N/A 106%	91%	38%	N/A	72%	57%	78%	N/A	N/A	106%			
367101 Q19353WSTA 230 30971 MIDWAY F 230 1 1	P2-LAD-30: GATES 500KV - Middle Breaker Bay 4	P2-3	bus-bkr 29% 77%	15%	104%	32%	87%	55%	8%	32%	22%	41%			
30031 TRACY 500 3708 TRCY MP1 500 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	82%	73%	60%	71%	25%	21%	55%	30%	102%	30%	96%	
30031 TRACY 500 3710 TRCY MP2 500 2 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	82%	73%	60%	71%	25%	21%	55%	30%	102%	30%	96%	
30040 TESLA 500 33856 TESLA BM 13.8 1 1	PS-SIDC-AD-3: Station DC Battery Supply Vaca Olson 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	66%	48%	42%	76%	45%	65%	61%	62%	103%	49%	76%	
30040 TESLA 500 33856 TESLA BM 13.8 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	101%	78%	62%	NConv	79%	84%	75%	82%	138%	82%	103%	
30043 GROVE 500 35665 VSC2-1H 350 1 1	PS-SIDC-AD-10: Station DC Battery Supply Collinsville 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	106%	93%	N/A	112%	N/A	N/A	N/A	N/A	N/A	
30043 GROVE 500 35665 VSC2-1H 350 2 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	94%	93%	N/A	112%	N/A	N/A	N/A	N/A	N/A	
30043 GROVE 500 35665 VSC2-1H 350 2 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	108%	93%	N/A	112%	N/A	N/A	N/A	N/A	N/A	
30043 GROVE 500 35665 VSC2-1H 350 2 1	PS-SIDC-AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	104%	93%	N/A	112%	N/A	N/A	N/A	N/A	N/A	
30043 GROVE 500 35665 VSC2-1H 350 2 1	PS-SIDC-AD-3: Station DC Battery Supply Vaca Olson 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	106%	93%	N/A	112%	N/A	N/A	N/A	N/A	N/A	
30043 GROVE 500 35665 VSC2-1H 350 2 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	93%	93%	N/A	101%	N/A	N/A	N/A	N/A	N/A	
30043 GROVE 500 35665 VSC2-1H 350 2 1	PS-SIDC-AD-9: Station DC Battery Supply Double Canyon 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	108%	93%	N/A	112%	N/A	N/A	N/A	N/A	N/A	
30050 LOSBANOS 500 30055 GATES 500 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	17%	126%	37%	N/A	127%	115%	113%	N/A	N/A	68%	
30050 LOSBANOS 500 30002 LB MW 21 500 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	17%	N/A	N/A	N/A	97%	N/A	N/A	N/A	10%	104%	N/A	
30052 MANNING 500 300010 MNMC SC1 500 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	111%	64%	N/A	121%	109%	110%	N/A	N/A	N/A	
30055 GATES 500 34607 GATES12M 13.8 111	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	27%	36%	18%	61%	106%	36%	67%	63%	NConv	107%	NConv	
30055 GATES 500 34607 GATES12M 13.8 111	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	NConv	NConv	NConv	NConv	117%	98%	NConv	NConv	NConv	
30055 GATES 500 34657 GATES12M 13.8 121	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	65%	10%	97%	N/A	32%	94%	89%	N/A	N/A	136%	
30055 GATES 500 34657 GATES12M 13.8 121	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	31%	52%	16%	67%	43%	23%	72%	74%	99%	37%	108%	
30055 GATES 500 34657 GATES12M 13.8 121	PS-SIDC-AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	31%	52%	21%	67%	42%	24%	74%	75%	100%	37%	108%	
30055 GATES 500 34657 GATES12M 13.8 121	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	26%	51%	19%	62%	47%	18%	69%	70%	88%	42%	105%	
30055 GATES 500 34657 GATES12M 13.8 121	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	32%	44%	17%	66%	104%	18%	64%	64%	65%	104%	NConv	
30055 GATES 500 34657 GATES12M 13.8 121	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	NConv	NConv	NConv	NConv	152%	120%	NConv	NConv	NConv	
30055 GATES 500 34657 GATES12M 13.8 121	PS-SIDC-AD-9: Station DC Battery Supply Double Canyon 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	36%	52%	24%	71%	35%	29%	77%	73%	103%	29%	105%	
30107 COTWD F2 230 30108 BRNF F3F JCT 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	105%	76%	103%	16%	78%	104%	62%	17%	64%	58%	64%	
30108 BRNF F3F JCT 230 30185 PT 1 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	94%	65%	93%	13%	68%	93%	65%	20%	54%	48%	53%	
30460 VACA DM 230 30465 BAHJA 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	110%	72%	65%	107%	42%	44%	31%	52%	125%	42%	71%	
30460 VACA DM 230 30465 BAHJA 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	85%	77%	66%	NConv	61%	46%	37%	60%	101%	65%	79%	
30460 VACA DM 230 30467 PARKWAY 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	108%	73%	65%	107%	41%	46%	33%	58%	124%	41%	70%	
30465 BAHJA 230 30550 MORAGA 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	96%	66%	58%	96%	33%	48%	24%	48%	115%	34%	63%	
30467 PARKWAY 230 30550 MORAGA 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	98%	65%	58%	97%	35%	45%	31%	55%	116%	35%	65%	
30508 BELLOTA 230 30505 WEBER 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	52%	44%	74%	N/A	27%	42%	106%	N/A	N/A	NConv	
30515 WARNERVL 230 30516 WILSONNCTR 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	42%	79%	90%	N/A	116%	156%	140%	N/A	N/A	110%	
30515 WARNERVL 230 30516 WILSONNCTR 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	14%	32%	59%	59%	118%	69%	94%	87%	NConv	147%	NConv	
30516 WILSONNCTR 230 30800 WILSON 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	42%	N/A	N/A	N/A	N/A	112%	100%	N/A	N/A	N/A	
30516 WILSONNCTR 230 30800 WILSON 230 4 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	78%	N/A	N/A	115%	37%	33%	N/A	N/A	109%	
30516 WILSONNCTR 230 30800 WILSON 230 BP 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	13%	N/A	N/A	N/A	116%	N/A	N/A	N/A	N/A	145%	N/A	
30526 PITB6 D 230 38952 TRC PTE1 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	95%	95%	97%	N/A	93%	98%	93%	93%	112%	93%	96%	
30530 CASTANO 230 30537 NOUBURN 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	85%	101%	82%	NConv	66%	72%	27%	103%	91%	58%	82%	
30537 NOUBURN 230 33219 VINEYARD 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	93%	111%	66%	NConv	70%	62%	23%	84%	106%	59%	93%	
30550 MORAGA 230 30554 CASTROVA 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	92%	84%	84%	103%	25%	47%	16%	45%	82%	17%	71%	
30550 MORAGA 230 30554 CASTROVA 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay												

Monitored Facility	Contingency Description	Category	Category Description	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 5P Heavy Renewables & Min Gas Gen	2027 OP Sensitivity	2030 5P High CEC Forecast	Project & Potential Mitigation
30567 LONETREE 230 30590 VASCOWINDUCT 230 1 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	106%	100%	81%	NConv	71%	81%	44%	99%	86%	68%	80%	
30585 LS PSTAS 230 30630 NEWARK D 230 1 1	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	106%	101%	95%	105%	37%	92%	18%	72%	109%	20%	86%	
30585 LS PSTAS 230 30630 NEWARK D 230 1 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	105%	120%	111%	NConv	73%	104%	37%	89%	113%	60%	101%	
30590 VASCOWINDUCT 230 30530 CAYETANO 230 1 1	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	107%	98%	85%	112%	61%	88%	29%	92%	97%	44%	72%	
30590 VASCOWINDUCT 230 30530 CAYETANO 230 1 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	106%	113%	94%	NConv	87%	97%	44%	107%	95%	73%	84%	
30622 EIGHT MI 230 30624 TESLA E 230 1 1	PS-SIDC:AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	12%	11%	36%	39%	103%	51%	26%	32%	1%	104%	5%	
30622 EIGHT MI 230 30624 TESLA E 230 1 1	PS-SIDC:AD-8: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	4%	22%	11%	10%	102%	36%	26%	30%	NConv	105%	NConv	
30624 TESLA E 230 30630 NEWARK D 230 1 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	92%	93%	79%	NConv	86%	65%	65%	103%	113%	90%	95%	
30624 TESLA E 230 30670 WESTLEY 230 1 1	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	61%	80%	96%	94%	63%	90%	63%	83%	94%	68%	106%	
30630 NEWARK D 230 30626 NWK 7M 112 2 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	114%	100%	82%	NConv	77%	60%	56%	91%	104%	76%	99%	
30631 NEWARK E 230 30628 NWK 11M 112 1 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	115%	119%	97%	NConv	91%	69%	65%	106%	121%	90%	117%	
30631 NEWARK E 230 30635 NWK DST 230 1 1	PS-SIDC:AD-1: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	141%	95%	87%	NConv	86%	73%	58%	78%	122%	86%	87%	
30635 NWK DST 230 30731 LS ESTRS 230 1 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	110%	92%	82%	NConv	88%	73%	71%	78%	128%	88%	86%	
30635 NWK DST 230 30731 LS ESTRS 230 1 2	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	142%	87%	78%	NConv	84%	70%	64%	70%	121%	84%	82%	
30635 NWK DST 230 30731 LS ESTRS 230 1 3	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	142%	87%	78%	NConv	84%	70%	64%	70%	122%	84%	82%	
30635 NWK DST 230 30731 LS ESTRS 230 1 4	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	143%	86%	77%	NConv	83%	68%	63%	69%	122%	82%	81%	
30640 TESLA C 230 30655 PPAUSCT 230 2 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	98%	109%	102%	NConv	66%	45%	54%	100%	99%	70%	96%	
30640 TESLA C 230 31856 TESLA 6M 118 8 1	PS-SIDC:AD-3: Station DC Battery Supply Vacca Dixon 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	66%	48%	41%	76%	45%	63%	59%	61%	104%	48%	77%	
30640 TESLA C 230 31856 TESLA 6M 118 8 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	100%	78%	61%	NConv	78%	82%	73%	81%	130%	81%	103%	
30655 PPAUSCT 230 30631 NEWARK E 230 2 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	116%	129%	88%	NConv	79%	39%	48%	88%	117%	83%	114%	
30705 MONTAVIS 230 30730 HICKS 230 1 1	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	42%	45%	82%	69%	25%	59%	67%	103%	42%	26%	36%	
30705 MONTAVIS 230 30730 HICKS 230 1 2	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	42%	45%	82%	69%	25%	59%	67%	103%	42%	26%	36%	
30731 LS ESTRS 230 38901 SSS 230 1 1	PS-SIDC:AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	92%	93%	99%	N/A	82%	91%	102%	N/A	N/A	89%	
30731 LS ESTRS 230 38901 SSS 230 1 1	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	86%	88%	97%	99%	69%	84%	94%	106%	81%	69%	85%	
30731 LS ESTRS 230 38901 SSS 230 1 1	PS-SIDC:AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	86%	NConv	NConv	NConv	NConv	NConv	92%	104%	83%	NConv	90%	
30735 METCALF 230 30642 METCALF 500 14 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	143%	NConv	N/A	114%	115%	154%	N/A	N/A	N/A	
30735 METCALF 230 30731 LS ESTRS 230 1 2	PS-SIDC:AD-10: Station DC Battery Supply Collinsville 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	53%	97%	102%	N/A	62%	78%	110%	N/A	N/A	42%	
30735 METCALF 230 30731 LS ESTRS 230 1 2	PS-SIDC:AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	68%	55%	93%	101%	48%	55%	75%	99%	60%	51%	43%	
30735 METCALF 230 30731 LS ESTRS 230 1 2	PS-SIDC:AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	68%	55%	96%	101%	48%	58%	76%	102%	60%	52%	44%	
30735 METCALF 230 30731 LS ESTRS 230 1 2	PS-SIDC:AD-3: Station DC Battery Supply Vacca Dixon 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	67%	53%	96%	101%	51%	57%	78%	104%	62%	56%	43%	
30735 METCALF 230 30731 LS ESTRS 230 1 2	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	41%	31%	108%	82%	59%	71%	100%	126%	37%	66%	22%	
30735 METCALF 230 30731 LS ESTRS 230 1 2	PS-SIDC:AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	61%	48%	112%	91%	48%	71%	90%	107%	NConv	53%	NConv	
30735 METCALF 230 30731 LS ESTRS 230 1 3	PS-SIDC:AD-10: Station DC Battery Supply Collinsville 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	52%	97%	102%	N/A	62%	78%	110%	N/A	N/A	42%	
30735 METCALF 230 30731 LS ESTRS 230 1 3	PS-SIDC:AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	68%	55%	93%	101%	48%	55%	75%	98%	60%	51%	42%	
30735 METCALF 230 30731 LS ESTRS 230 1 3	PS-SIDC:AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	68%	55%	96%	101%	48%	58%	76%	102%	60%	52%	44%	
30735 METCALF 230 30731 LS ESTRS 230 1 3	PS-SIDC:AD-3: Station DC Battery Supply Vacca Dixon 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	67%	53%	95%	101%	51%	57%	78%	104%	62%	55%	43%	
30735 METCALF 230 30731 LS ESTRS 230 1 3	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	42%	31%	108%	82%	58%	71%	100%	126%	37%	66%	21%	
30735 METCALF 230 30731 LS ESTRS 230 1 3	PS-SIDC:AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	61%	48%	112%	90%	48%	71%	90%	107%	NConv	53%	NConv	
30735 METCALF 230 30731 LS ESTRS 230 1 4	PS-SIDC:AD-10: Station DC Battery Supply Collinsville 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	51%	95%	100%	N/A	61%	77%	108%	N/A	N/A	40%	
30735 METCALF 230 30731 LS ESTRS 230 1 4	PS-SIDC:AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	67%	54%	94%	98%	47%	58%	75%	101%	58%	51%	42%	
30735 METCALF 230 30731 LS ESTRS 230 1 4	PS-SIDC:AD-3: Station DC Battery Supply Vacca Dixon 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	66%	52%	94%	99%	50%	55%	77%	103%	60%	55%	41%	
30735 METCALF 230 30731 LS ESTRS 230 1 4	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	42%	29%	106%	80%	58%	69%	98%	124%	55%	65%	17%	
30735 METCALF 230 30731 LS ESTRS 230 1 4	PS-SIDC:AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	60%	46%	110%	90%	47%	69%	88%	105%	NConv	53%	NConv	
30755 MOSLINOW 230 30797 LASAGUILASS 230 2 1	PS-SIDC:AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	38%	N/A	N/A	N/A	23%	N/A	N/A	N/A	124%	27%	N/A	
30755 MOSLINOW 230 30797 LASAGUILASS 230 2 1	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	45%	N/A	N/A	N/A	30%	N/A	N/A	N/A	135%	34%	N/A	
30755 MOSLINOW 230 30797 LASAGUILASS 230 2 1	PS-SIDC:AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	36%	N/A	N/A	N/A	174%	N/A	N/A	N/A	NConv	198%	N/A	
30755 MOSLINOW 230 30797 LASAGUILASS 230 2 1	PS-SIDC:AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	34%	N/A	N/A	N/A	13%	N/A	N/A	N/A	142%	21%	N/A	
30755 MOSLINOW 230 30798 LASAGUILACTH 230 1 1	PS-SIDC:AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	54%	43%	61%	N/A	55%	45%	56%	N/A	N/A	115%	
30761 FINNSWSTA 230 30670 WESTLEY 230 1 1	PS-SIDC:AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	45%	50%	86%	NConv	51%	57%	86%	109%	71%	59%	67%	
30765 LOSBANOS 230 30790 PANDOCHE 230 2 1	PS-SIDC:AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	43%	33%	32%	55%	18%	21%	33%	38%	102%	23%	62%	
30765 LOSBANOS 230 30790 PANDOCHE 230 2 1	PS-SIDC:AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	41%	35%	42%	66%	6%	27%	47%	54%	143%	15%	76%	
30765 LOSBANOS 230 38615 DS AMIGO 230 1 1	PS-SIDC:AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	25%	N/A	N/A	N/A	16%	N/A	N/A	N/A	129%	6%	N/A	
30790 PANDOCHE 230 30791 PINCHE 1M 230 1 1	PS-SIDC:AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	35%	13%	9%	23%	18%	51%	44%	42%	102%	17%	52%	

Subject to PTD station redundant DC supply program and installation timelines.

Monitored Facility	Contingency Description	Category	Category Description	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 5P Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 5P High CEC Forecast	Project & Potential Mitigation
30790 PANDOCHE 230 30793 PNCH 1M 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Min 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	35%	12%	9%	23%	18%	52%	46%	43%	101%	17%	54%	
30790 PANDOCHE 230 30902 GATES E 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	4%	129%	15%	N/A	121%	64%	70%	N/A	N/A	73%	
30790 PANDOCHE 230 30902 GATES E 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	45%	4%	29%	35%	130%	38%	6%	4%	NConv	142%	NConv	
30790 PANDOCHE 230 30902 GATES E 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	6%	60%	74%	62%	16%	63%	79%	82%	63%	4%	136%	
30790 PANDOCHE 230 30902 GATES E 230 2 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	4%	137%	16%	N/A	129%	93%	101%	N/A	N/A	78%	
30790 PANDOCHE 230 30902 GATES E 230 2 1	PS-SIDC-AD-3: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	48%	4%	31%	37%	138%	41%	9%	5%	NConv	130%	NConv	
30790 PANDOCHE 230 30902 GATES E 230 2 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	6%	64%	79%	66%	17%	67%	114%	119%	67%	5%	145%	
30797 LASAGUIASS 230 30790 PANDOCHE 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	17%	35%	39%	41%	113%	46%	39%	43%	NConv	129%	NConv	
30797 LASAGUIASS 230 30790 PANDOCHE 230 2 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	17%	35%	40%	42%	113%	46%	39%	43%	NConv	130%	NConv	
30800 WILSON 230 30801 STOREVICT1 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	68%	98%	N/A	N/A	71%	88%	122%	N/A	N/A	140%	
30800 WILSON 230 30801 STOREVICT1 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	33%	47%	58%	N/A	109%	12%	18%	62%	NConv	62%	NConv	
30800 WILSON 230 30802 STOREVICT2 230 2 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	54%	71%	N/A	N/A	52%	67%	92%	N/A	N/A	111%	
30830 KEARNEY 230 30835 HERNDON 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	37%	28%	128%	N/A	23%	54%	67%	N/A	N/A	59%	
30878 HENTAPI 230 30885 MUSTANG55 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	37%	21%	52%	N/A	29%	42%	60%	N/A	N/A	109%	
30878 HENTAPI 230 30885 MUSTANG55 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	21%	3%	32%	48%	100%	12%	12%	25%	NConv	108%	NConv	
30885 MUSTANGS 230 30906 GATES F 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	44%	3%	91%	N/A	43%	72%	71%	N/A	N/A	113%	
30885 MUSTANGS 230 30906 GATES F 230 2 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	44%	3%	91%	N/A	43%	72%	71%	N/A	N/A	113%	
30900 GATES D 230 30889 CALFLAT555 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	9%	NConv	NConv	NConv	162%	37%	NConv	NConv	NConv	
30900 GATES D 230 30905 TEMPLETN 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	17%	NConv	NConv	NConv	143%	30%	NConv	NConv	NConv	
30902 GATES E 230 34607 GATES11M 13.8 11.1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	27%	36%	19%	62%	108%	37%	68%	65%	NConv	108%	NConv	
30902 GATES E 230 34607 GATES11M 13.8 11.1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	8%	NConv	NConv	NConv	131%	22%	NConv	NConv	NConv	
30905 TEMPLETN 230 30915 MORROBAY 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	5%	NConv	NConv	NConv	184%	71%	NConv	NConv	NConv	
30906 GATES F 230 30933 ARCO 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	64%	10%	94%	N/A	31%	91%	87%	N/A	N/A	131%	
30906 GATES F 230 34657 GATES12M 13.8 12.1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	31%	51%	16%	65%	42%	23%	71%	73%	96%	36%	105%	
30906 GATES F 230 34657 GATES12M 13.8 12.1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	30%	51%	20%	66%	41%	24%	73%	73%	97%	36%	106%	
30906 GATES F 230 34657 GATES12M 13.8 12.1	PS-SIDC-AD-2: Station DC Battery Supply Table Min 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	25%	50%	19%	61%	46%	18%	67%	69%	85%	41%	103%	
30906 GATES F 230 34657 GATES12M 13.8 12.1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	31%	44%	17%	65%	102%	18%	63%	63%	NConv	102%	NConv	
30906 GATES F 230 34657 GATES12M 13.8 12.1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	NConv	NConv	NConv	NConv	141%	117%	NConv	NConv	NConv	
30906 GATES F 230 34657 GATES12M 13.8 12.1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	35%	51%	24%	70%	34%	29%	76%	71%	100%	29%	103%	
30906 GATES F 230 34657 GATES12M 13.8 12.1	PS-SIDC-AD-9: Station DC Battery Supply Diablo Canyon 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	10%	3%	72%	41%	57%	57%	16%	9%	146%	60%	101%	
30906 GATES F 230 367101 Q15935N5TA 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	NConv	NConv	NConv	NConv	191%	130%	NConv	NConv	NConv	
30906 GATES F 230 367101 Q15935N5TA 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	NConv	21%	NConv	N/A	NConv	101%	14%	N/A	N/A	NConv	
30910 ESTRELLA 230 30889 CALFLAT555 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	NConv	8%	15%	N/A	NConv	118%	24%	N/A	N/A	NConv	
30915 MORROBAY 230 30910 ESTRELLA 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	NConv	8%	15%	N/A	NConv	118%	24%	N/A	N/A	NConv	
30933 ARCO 230 30970 MIDWAY E 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	6%	30%	44%	50%	74%	5%	3%	13%	106%	68%	92%	
30933 ARCO 230 30970 MIDWAY E 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	NConv	NConv	NConv	NConv	170%	84%	NConv	NConv	NConv	
37015 PROCTER 230 37009 HEDGE 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	26%	45%	47%	21%	103%	33%	26%	27%	NConv	105%	NConv	
37585 TRCY PMP 230 30625 TESLA D 230 2 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	52%	48%	57%	118%	38%	33%	87%	80%	91%	49%	86%	
37585 TRCY PMP 230 30641 TESLA F 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	48%	122%	N/A	38%	17%	98%	N/A	N/A	N/A	
37585 TRCY PMP 230 37508 TCY MP1 500 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	83%	72%	59%	70%	25%	21%	54%	30%	102%	31%	95%	
37585 TRCY PMP 230 37510 TCY MP2 500 2 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	83%	72%	59%	70%	25%	21%	54%	30%	102%	31%	95%	
38206 COTTLE 230 37563 MELONES 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	59%	107%	114%	N/A	140%	106%	96%	N/A	N/A	125%	
38206 COTTLE 230 37563 MELONES 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	57%	55%	69%	89%	26%	78%	68%	64%	106%	28%	99%	
38206 COTTLE 230 37563 MELONES 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Min 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	59%	56%	75%	94%	25%	81%	69%	65%	108%	27%	100%	
38206 COTTLE 230 37563 MELONES 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	43%	53%	76%	78%	30%	86%	72%	69%	91%	40%	100%	
38206 COTTLE 230 37563 MELONES 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	46%	54%	89%	87%	77%	102%	79%	73%	NConv	86%	NConv	
38206 COTTLE 230 37563 MELONES 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	49%	51%	75%	91%	22%	85%	74%	72%	113%	25%	99%	
38610 DELTAPMP 230 30580 SANDHLWICT 230 1 1	PS-SIDC-AD-3: Station DC Battery Supply Vacca-Olson 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	67%	54%	41%	107%	59%	12%	76%	40%	103%	100%	89%	
38610 DELTAPMP 230 30580 SANDHLWICT 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	74%	63%	48%	NConv	80%	24%	75%	50%	110%	101%	93%	
38615 DS AMIGO 230 30790 PANDOCHE 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	57%	N/A	N/A	N/A	29%	N/A	N/A	N/A	119%	34%	N/A	
38615 DS AMIGO 230 30790 PANDOCHE 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Min 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	56%	N/A	N/A	N/A	30%	N/A	N/A	N/A	121%	36%	N/A	
38615 DS AMIGO 230 30790 PANDOCHE 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	55%	N/A	N/A	N/A	14%	N/A	N/A	N/A	166%	26%	N/A	
38615 DS AMIGO 230 30790 PANDOCHE 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	51%	N/A	N/A	N/A	44%	N/A	N/A	N/A	108%	50%	N/A	

Monitored Facility	Contingency Description	Category	Category Description	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Winter Off-Peak	2040 Winter Off-Peak	2027 5P Heavy Summer/Weekends & Min Gas Gen	2027 OP Sensitivity	2030 5P High CEC Forecast	Project & Potential Mitigation
302052 LB MW 21 500 300503 LB MW 22 500 2 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	13%	17%	108%	N/A	77%	108%	70%	69%	8%	81%	5%	
302053 LB MW 22 500 300504 LB MW 23 500 2 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	13%	17%	108%	13%	77%	108%	70%	69%	8%	81%	5%	
302054 LB MW 23 500 30060 MIDWAY 500 2 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	18%	22%	139%	18%	98%	139%	71%	71%	13%	104%	8%	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-10: Station DC Battery Supply Coltonville 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	92%	99%	104%	N/A	100%	88%	97%	N/A	N/A	95%	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	92%	100%	102%	N/A	99%	86%	98%	N/A	N/A	97%	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	96%	99%	104%	N/A	102%	89%	97%	N/A	N/A	101%	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	97%	100%	106%	N/A	102%	90%	98%	N/A	N/A	102%	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-3: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	92%	99%	103%	N/A	100%	88%	96%	N/A	N/A	94%	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	98%	100%	102%	N/A	100%	88%	98%	N/A	N/A	102%	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	94%	100%	103%	N/A	97%	89%	98%	N/A	N/A	NConv	
356166 SKYLINE 230 356167 SANJOSEB230 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Double Canyon 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	93%	100%	104%	N/A	104%	91%	96%	N/A	N/A	97%	
356167 SANJOSEB230 230 356169 SUB EF 115 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	144%	83%	N/A	54%	43%	68%	N/A	N/A	N/A	131%	
356167 SANJOSEB230 230 356169 SUB EF 115 1 1	PS-SIDC-AD-9: Station DC Battery Supply Double Canyon 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	89%	89%	N/A	72%	59%	76%	N/A	N/A	N/A	85%	
365224 Q1135 230 365223 Q1135Q1391 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	9%	28%	21%	28%	17%	1%	64%	118%	NConv	20%	NConv	
365224 Q1135 230 365223 Q1135Q1391 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	9%	27%	20%	28%	6%	3%	54%	111%	19%	2%	31%	
365313 Q1243 230 365300 Q1242Q1243 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	21%	72%	52%	62%	12%	6%	33%	49%	60%	3%	90%	
365431 Q1196 500 365443 Q1196 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	61%	76%	56%	65%	28%	23%	55%	54%	107%	23%	86%	
365431 Q1196 500 365443 Q1196 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	60%	76%	56%	66%	28%	11%	56%	54%	107%	23%	86%	
365431 Q1196 500 365443 Q1196 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	55%	72%	53%	63%	29%	18%	52%	54%	96%	28%	81%	
365431 Q1196 500 365443 Q1196 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	58%	70%	55%	NConv	28%	13%	50%	51%	100%	23%	78%	
365431 Q1196 500 365443 Q1196 230 1 1	PS-SIDC-AD-9: Station DC Battery Supply Double Canyon 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	60%	74%	56%	66%	28%	20%	56%	54%	105%	23%	83%	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-10: Station DC Battery Supply Coltonville 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	92%	75%	93%	N/A	129%	58%	35%	N/A	N/A	31%	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-11: Station DC Battery Supply Manning 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	98%	81%	95%	N/A	129%	52%	34%	N/A	N/A	59%	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	28%	99%	74%	91%	26%	130%	65%	41%	53%	13%	1%	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	20%	98%	77%	96%	22%	130%	62%	41%	68%	9%	23%	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-3: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	21%	94%	74%	93%	27%	131%	63%	43%	69%	19%	33%	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-4: Station DC Battery Supply Tesla 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	35%	98%	80%	93%	21%	130%	51%	34%	89%	6%	19%	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	20%	101%	81%	96%	24%	129%	54%	36%	NConv	15%	NConv	
365465 KOLA 230 36040 TESLA C 230 1 1	PS-SIDC-AD-8: Station DC Battery Supply Metcalf 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	78%	106%	85%	NConv	21%	131%	56%	35%	94%	3%	61%	
365941 CASTANIA 230 365942 WPSN 230 1 1	PS-SIDC-AD-1: Station DC Battery Supply Round Mtn 500-230KV Batt	PS-SIDC	Non-Redundant Battery/Relay	16%	41%	28%	32%	6%	34%	21%	34%	73%	1%	90%	
365941 CASTANIA 230 365942 WPSN 230 1 1	PS-SIDC-AD-2: Station DC Battery Supply Table Mtn 500-230-115-60KV Batt	PS-SIDC	Non-Redundant Battery/Relay	16%	41%	28%	33%	6%	36%	23%	34%	76%	1%	90%	
367101 Q1395SWSTA 230 30971 MIDWAY F 230 1 1	PS-SIDC-AD-6: Station DC Battery Supply Gates 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	21%	104%	16%	127%	85%	94%	22%	39%	83%	68%	97%	
367101 Q1395SWSTA 230 30971 MIDWAY F 230 1 1	PS-SIDC-AD-7: Station DC Battery Supply Midway 500KV Batt	PS-SIDC	Non-Redundant Battery/Relay	NConv	NConv	22%	NConv	NConv	NConv	248%	83%	NConv	NConv	NConv	
390010 MMAC SC1 500 390011 MMAC SC2 500 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	111%	65%	N/A	121%	108%	109%	N/A	N/A	N/A	
390011 MMAC SC2 500 39042 METCALF 500 1 1	PS-SIDC-AD-5: Station DC Battery Supply Los Banos 500-230-70KV Batt	PS-SIDC	Non-Redundant Battery/Relay	N/A	N/A	111%	65%	N/A	121%	108%	109%	N/A	N/A	N/A	
39044 TESLA 230 39456 TESLA 4M 118.8 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	59%	42%	40%	N/A	44%	64%	57%	60%	91%	43%	65%	
39044 TESLA 230 39456 TESLA 4M 118.8 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	59%	42%	40%	N/A	44%	64%	57%	60%	91%	43%	65%	
39055 GATES 500 34607 GATES11AM 118.11 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	27%	45%	20%	62%	43%	38%	68%	65%	97%	38%	96%	
39055 GATES 500 34607 GATES11AM 118.11 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	34%	54%	21%	68%	45%	22%	70%	72%	105%	40%	108%	
390731 LS ESTRS 230 30781 LS ESTRS 230 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	86%	92%	86%	101%	70%	84%	92%	104%	83%	70%	89%	
390731 METCALF 230 30781 LS ESTRS 230 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	59%	47%	92%	85%	51%	61%	74%	103%	52%	53%	33%	
390731 METCALF 230 30781 LS ESTRS 230 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	59%	46%	92%	85%	51%	61%	74%	103%	52%	53%	32%	
390731 METCALF 230 30781 LS ESTRS 230 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	59%	45%	92%	85%	51%	61%	74%	103%	52%	53%	31%	
390731 METCALF 230 30781 LS ESTRS 230 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	21%	N/A	N/A	N/A	25%	N/A	N/A	N/A	103%	30%	N/A	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl Bipole outage	P7-1.2	L-1/L1-1	33%	53%	20%	67%	45%	21%	69%	71%	98%	37%	107%	
39096 GATES F 230 34657 GATES12M 118.12 1 1	P7-1.2: POCl														

Monitored Facility				Contingency Description		Category	Category Description	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 5P Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 5P High CEC Forecast	Project & Potential Mitigation
30735 METCALF	230	30731 LS ESTRES	230	1	METCALF-SUB MONOPHOLE & TESLA 500/230KV TB 6	PG	N-1/N-1	<100%	<100%	115.64	116.29	<100%	<100%	<100%	126.22	<100%	<100%	<100%	Continue to monitor
					TESLA 500/230KV TB 6 & METCALF-SUB MONOPHOLE	PG	N-1/N-1	<100%	<100%	109.23	120.96	<100%	<100%	<100%	123.17	<100%	<100%		
					METCALF-SUB MONOPHOLE & MIDWAY-VINCENT 500KV 110	PG	N-1/N-1	<100%	<100%	111.04	111.42	<100%	<100%	<100%	119.17	<100%	<100%		
30052 MANNING	500	3005012 LB MW 21	500	2	METCALF-SUB MONOPHOLE & TESLA 500/230KV TB 6	PG	N-1/N-1	<100%	<100%	115.54	116.29	<100%	<100%	<100%	126.1	<100%	<100%	Continue to monitor	
					MIDWAY-MANNING 500KV 101 & OLINDA-TRACY 500KV 101	PG	N-1/N-1	<100%	<100%	101.29	<100%	<100%	<100%	<100%	<100%	<100%			
					MIDWAY-MANNING 500KV 101 & MALIN-ROUND MT 500KV 216020	PG	N-1/N-1	<100%	<100%	100.32	<100%	<100%	<100%	109.62	<100%	<100%			
30735 METCALF	230	30739 HICKS	230	1	GATES-MANNING 500KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%	Continue to monitor	
					METCALF-SUB MONOPHOLE & TESLA 500/230KV TB 6	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%			
					METCALF-MOSSLANDING 500KV 105010 & TESLA-METCALF 500KV 10110	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	105.42	<100%	<100%			
30720 SARATOGA	230	30733 VACUNA	230	1	METCALF 500/230KV TB 12 & METCALF 500/230KV TB 13	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.86	115.22	<100%	118.7	<100%	Project: MetcalF 500/230 #14 transformer. Manning MetcalF 500 KV line compensation under review.	
					METCALF 500/230KV TB 13 & METCALF-SUB MONOPHOLE	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	103.57	117.32	<100%	<100%	<100%		
					TESLA-METCALF 500KV 10110 & MANNING - METCALF 500 KV 101	PG	N-1/N-1	N/A	N/A	101.45	112.03	N/A	<100%	108.6	N/A	N/A	N/A		
30735 METCALF	230	30042 METCALF	500	14	MIDWAY-MANNING 500KV 101 & GATES-MANNING 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	104.12	108.71	129.11	<100%	<100%	Continue to monitor	
					METCALF 500/230KV TB 13 & METCALF-SUB MONOPHOLE	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	103.57	117.32	<100%	<100%	<100%		
					TESLA-METCALF 500KV 10110 & MANNING - METCALF 500 KV 101	PG	N-1/N-1	N/A	N/A	101.45	112.03	N/A	<100%	108.6	N/A	N/A	N/A		
30780 PANACHE	230	30051 MANNING	500	2	MIDWAY-MANNING 500KV 101 & GATES-MANNING 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	104.12	108.71	129.11	<100%	<100%	Continue to monitor	
					MANNING 500/230KV TB 1 & OLINDA-TRACY 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	129.12	<100%	<100%	<100%	101.81		
					MANNING 500/230KV TB 1 & MALIN-ROUND MT 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	116.26	<100%	<100%	<100%	118.08		
30803 MANNING	230	30051 MANNING	500	1	MANNING 500/230KV TB 1 & CAPTACK-OLINDA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	126.24	<100%	<100%	117.01	<100%	Continue to monitor	
					MANNING 500/230KV TB 2 & OLINDA-TRACY 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	129.12	<100%	<100%	<100%	111.84		
					MANNING 500/230KV TB 2 & MALIN-ROUND MT 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	116.26	<100%	<100%	<100%	118.08		
30902 GATES E	230	34407 GATES11M	13.8	11	MANNING 500/230KV TB 2 & CAPTACK-OLINDA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	126.24	<100%	<100%	117.01	<100%	101.13	
					GATES 500/230KV TB 12 & OLINDA-TRACY 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	112.87	<100%	<100%	101.27	109.85		
					GATES 500/230KV TB 12 & MALIN-ROUND MT 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.41	113.43	<100%	<100%	119.49		
30055 GATES	500	34407 GATES11M	13.8	11	GATES 500/230KV TB 12 & ROUND MT-FERRISDAVIS 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.85	<100%	<100%	101.28	111.88	127.67	
					GATES 500/230KV TB 12 & OLINDA-TRACY 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	110.85	<100%	<100%	107.03	118.84		
					GATES 500/230KV TB 12 & ROUND MT-FERRISDAVIS 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	102.04	<100%	<100%	109.14	106.25		
30055 GATES	500	34407 GATES12M	13.8	12	GATES 500/230KV TB 12 & TABLE MT-VACA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.47	<100%	<100%	101.19	116.84	Continue to monitor	
					GATES 500/230KV TB 12 & ROUND MT-FERRISDAVIS 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	102.04	<100%	<100%	109.14	106.25		
					GATES 500/230KV TB 12 & TABLE MT-VACA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.47	<100%	<100%	101.19	116.84		
30906 GATES F	230	34407 GATES12M	13.8	12	GATES 500/230KV TB 12 & ROUND MT-FERRISDAVIS 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	102.04	<100%	<100%	109.14	106.25	Continue to monitor	
					GATES 500/230KV TB 12 & TABLE MT-VACA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.47	<100%	<100%	101.19	116.84		
					GATES 500/230KV TB 12 & TABLE MT-VACA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.47	<100%	<100%	101.19	116.84		
30006 GATES F	230	30502 TRC PTB1	230	1	GATES 500/230KV TB 12 & TABLE MT-VACA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.47	<100%	<100%	101.19	116.84	Continue to monitor	
					GATES 500/230KV TB 12 & TABLE MT-VACA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.47	<100%	<100%	101.19	116.84		
					GATES 500/230KV TB 12 & TABLE MT-VACA 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	106.47	<100%	<100%	101.19	116.84		
30610 DELTAPAP	230	30580 SANDHILWCT	230	1	TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	127.38	<100%	<100%	<100%	<100%	Continue to monitor	
					COLLINSVILLE-TESLA 500KV 101 & TABLE MT-VACA 500KV 101010	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		
					TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30110 GLENN	230	30114 DELEVAN	230	4	TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	127.38	<100%	<100%	<100%	<100%	Continue to monitor	
					COLLINSVILLE-TESLA 500KV 101 & TABLE MT-VACA 500KV 101010	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		
					TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30580 SANDHILWCT	230	30625 TESLA D	230	1	COLLINSVILLE-TESLA 500KV 101 & TABLE MT-VACA 500KV 101010	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	Continue to monitor	
					TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		
					COLLINSVILLE-TESLA 500KV 101 & TABLE MT-VACA 500KV 101010	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30580 TESLA D	230	30624 METCALF	230	1	TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	127.38	<100%	<100%	<100%	<100%	Continue to monitor	
					TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		
					COLLINSVILLE-TESLA 500KV 101 & TABLE MT-VACA 500KV 101010	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
304533 CHARCOTRYSTA	115	33610 MONTAGUE	115	1	TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	127.38	<100%	<100%	<100%	<100%	Continue to monitor	
					TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		
					COLLINSVILLE-TESLA 500KV 101 & TABLE MT-VACA 500KV 101010	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30516 PITTSBURGH D	230	30502 TRC PTB1	230	1	TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	127.38	<100%	<100%	<100%	<100%	Continue to monitor	
					TABLE MT-VACA 500KV 101010 & VACA-DC-COLLINSVILLE 500KV 101	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		
					COLLINSVILLE-TESLA 500KV 101 & TABLE MT-VACA 500KV 101010	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30735 METCALF	230	30739 HICKS	230	1	MANNING - METCALF 500 KV 101 & TESLA-MOSSLANDING 500KV 10110	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	105.42	<100%	<100%	<100%	<100%	Continue to monitor	
					MANNING - METCALF 500 KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%		
					Base Case & METCALF-SUB MONOPHOLE	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30735 METCALF	230	30739 HICKS	230	1	GATES-MANNING 500KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%	Continue to monitor	
					MANNING - METCALF 500 KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%		
					Base Case & METCALF-SUB MONOPHOLE	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30735 METCALF	230	30739 HICKS	230	1	GATES-MANNING 500KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%	Continue to monitor	
					MANNING - METCALF 500 KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%		
					Base Case & METCALF-SUB MONOPHOLE	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30735 METCALF	230	30739 HICKS	230	1	GATES-MANNING 500KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%	Continue to monitor	
					MANNING - METCALF 500 KV 101 & LOSBANOS-GATES 500KV 316020	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	101.28	<100%	<100%	<100%	<100%		
					Base Case & METCALF-SUB MONOPHOLE	PG	N-1/N-1	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%	<100%		<100%
30735 METCALF	23																		

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off Peak	2035 Spring Off Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
				NONE detected on Bulk System											

Substation	Contingency	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off Peak	2035 Spring Off Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
				None over 8%											

Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios		
			2027 Spring Off-Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off-Peak	2027 OP Sensitivity	2030 SP High CEC Forecast	
P1_1-0. DIABLOCNYSN FAULT ONLY	P1	L-1	no issues	no issues	N/A	N/A	no issues	no issues	DCPP modeled offline in 2035 case
P1_2-0. RND MTN FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	
P1_2-10 METCALF-MOSSLAND 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-11 MOSSLAND-LOSBANOS 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-12. LOSBANOS-GATES#1 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-13. LOSBANOS-GATES#2 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-14. LOSBANOS-MIDWAY 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-15. GATES-DIABLOCNYSN 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-16. GATES-MIDWAY 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-17. DIABLOCNYSN-MIDWAY#2 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-18. DIABLOCNYSN-MIDWAY#3 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-19. MIDWAY 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-2. TABLEMTN VACADIXON 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-20. MIDWAY 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-21 MIDWAY 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-22 CAPTJACK-OLINDA	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-23. FR_TM_21-TABLEMTN 500KV	P1	L-1	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	no issues	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_2-24. OLINDA-CAPTJACK 500KV	P1	L-1	no issues	no issues	no issues	Potential WECC/NERC criteria violation	no issues	no issues	Under review with PTO for fault clearing time and fault impedances.
P1_2-25. DALLASES-MOSSLAND 500KV	P1	L-1	no issues	no issues	potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	no issues	N/A	-
P1_2-26. MN_RM_12-MALIN 500KV	P1	L-1	no issues	no issues	no issues	Potential WECC/NERC criteria violation	no issues	N/A	Under review with PTO for fault clearing time and fault impedances.
P1_2-27. MN_RM_23-MALIN 500KV	P1	L-1	no issues	no issues	no issues	Potential WECC/NERC criteria violation	no issues	no issues	Under review with PTO for fault clearing time and fault impedances.
P1_2-3 RNDMTN-TESLA 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-4. OLINDA-TRACY 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-5 VACADIXON-TESLA 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_2-6. TRACY-TESLA 500KV	P1	L-1	no issues	no issues	potential WECC/NERC criteria violation	no issues	no issues	potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_2-7. TRACY-LOSBANOS 500KV	P1	L-1	no issues	no issues	Potential WECC/NERC criteria violation	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_2-8 TESLA-METCALF 500KV	P1	L-1	no issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_2-9. TESLA-LOSBANOS 500KV	P1	L-1	no issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-0. OLINDA 500/230KV TFMR	P1	L-1	no issues	Potential WECC/NERC criteria violation	no issues	no issues	no issues	no issues	Under review with PTO for fault clearing time and fault impedances.
P1_3-1. TRACY FAULT ONLY	P1	L-1	no issues	Potential WECC/NERC criteria violation	no issues	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-10. METCALF 500/230KV #11 TFMR	P1	L-1	no issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-11. METCALF 500/230KV #12 TFMR	P1	L-1	no issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-12. METCALF 500/230KV #13 TFMR	P1	L-1	no issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-13. MOSSLAND 500/230KV #9 TFMR	P1	L-1	no issues	no issues	no issues	Potential WECC/NERC criteria violation	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-14. LOSBANOS FAULT ONLY	P1	L-1	no issues	no issues	no issues	Potential WECC/NERC criteria violation	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-15. GATES FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-16. GATES FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-17. MIDWAY 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-18. MIDWAY 500/230KV #12 TFMR	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-19. MIDWAY 500KV FAULT ONLY	P1	L-1	no issues	Potential WECC/NERC criteria violation	no issues	no issues	no issues	no issues	Under review with PTO for fault clearing time and fault impedances.
P1_3-2. TRACY 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_3-3. ROUNDMTN 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-4. TABLE MTN 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-5. VACADIXON 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-6. VACADIXON 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-7. TESLA 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-8. TESLA 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_3-9. TESLA 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_4-0. ROUNDMTN-MN_RM_23 #2 500KV	P1	L-1	no issues	no issues	potential WECC/NERC criteria violation	Interruption	no issues	potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_4-1. CJ_OL_13-OLINDA 500KV	P1	L-1	no issues	no issues	no issues	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P1_4-10. TRACY 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_4-11. METCALF 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	N/A	-
P1_4-2. MX_TR_11-MAXWELL 500KV SHUNT	P1	L-1	Potential WECC/NERC criteria violation	no issues	no issues	no issues	no issues	Interruption	Under review with PTO for fault clearing time and fault impedances.
P1_4-3. TM_TS_11-TABLEMTN 500KV SHUNT	P1	L-1	Potential WECC/NERC criteria violation	no issues	no issues	no issues	no issues	no issues	Under review with PTO for fault clearing time and fault impedances.
P1_4-4. OL_MX_11-OL_MX_12 500KV SHUNT	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	Interruptions to be investigated
P1_4-6. GATES-DIABLOCNYSN 500KV SHUNT	P1	L-1	no issues	no issues	no issues	no issues	no issues	Interruption	-
P1_4-7. MIDWAY-DIABLOCNYSN 500KV SHUNT	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_4-8. ROUNDMTN 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P1_4-9. OLINDA 500KV FAULT ONLY	P1	L-1	no issues	no issues	no issues	no issues	no issues	Potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P2_3-0. ROUNDMTN-MALIN#2 500KV	P2	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P2_3-1. TESLA-LOSBANOS 500KV	P2	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P2_3-10. MIDWAY-LOSBANOS 500KV	P2	L-1	no issues	no issues	N/A	N/A	no issues	no issues	-
P2_3-11. MIDWAY 500KV FAULT ONLY	P2	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-
P2_3-2. TESLA-METCALF 500KV	P2	L-1	no issues	no issues	potential WECC/NERC criteria violation	no issues	no issues	no issues	-
P2_3-3. METCALF-TESLA 500KV	P2	L-1	no issues	no issues	potential WECC/NERC criteria violation	no issues	no issues	no issues	-
P2_3-4. METCALF-MOSSLAND 500KV & METCALF 500/230#11 TFMR	P2	L-1	no issues	no issues	WECC/NERC criteria violation	no issues	no issues	potential WECC/NERC criteria violation	Under review with PTO for fault clearing time and fault impedances.
P2_3-5. MOSSLAND-LOSBANOS 500KV & METCALF 500/230 #11 TFMR	P2	L-1	no issues	no issues	no issues	no issues	no issues	no issues	-

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Worst Contingency	Category	Category Description	Amount of Load Drop (MW)											Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	

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

Substation	Load Served (MW)										Potential Mitigation Solutions	
	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2035 Winter Off-Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity		2030 SP High CEC Forecast

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak	B4R: 2040 Summer Peak	B5: 2030 Summer-Off Peak	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak	S1: 2030SP High CEC Load	S2: 2027SP Heavy Renewable	S3: 2027 Spring OP BESS Charging		
26043 INTERMT TWE-IPP 345 1 1 (26043 INTERMT TWE-IPP 345 26043 TWE-IPP 345 2 1 line has similar P6 overloads)	P1L_8303_Line INTERMT 345.0 to TWE-IPP 345.0 Circuit 2 AND P1L_8308_Line TWE-IPP_PST 500.0 to TWE-NVE_CRY5 500.0 HVAC 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	184.2	< 100	< 100	< 100	Rely on TWE-RAS	
	P1L_8308_Line TWE-IPP_PST 500.0 to TWE-NVE_CRY5 500.0 HVAC 1 AND P1L_8303_Line INTERMT 345.0 to TWE-IPP 345.0 Circuit 2	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	184.7	< 100	< 100	< 100		
826113 TWE-IPP 345 826122 TWE-IPP-PST 345 #1 (TWE-IPP-PST #2 and #3 have similar P6 overloads)	P1DC_IPP1_IPPDC CONVERTER MONOPOLE #1 AND P1T_8324_Tran TWE-IPP 345.00 to TWE-IPP-PST2 345.00 Circuit 2 0.00	P6	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	122.9	< 100	< 100	< 100	Rely on IPPDC RAS and TWE RAS	
	P1DC_IPP2_IPPDC CONVERTER MONOPOLE #2 AND P1T_8324_Tran TWE-IPP 345.00 to TWE-IPP-PST2 345.00 Circuit 2 0.00	P6	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	123.9	< 100	< 100	< 100		
26044 MARKETPL ADELANTO 500 1 1	P1L_24074_Line LUGO 500.0 to MOHAVE 500.0 Circuit 1 AND P1L_LADWP10b_Line VICTORVL 500.0 to MCCULLGH 500.0 Circuit 2	P6*	overlapping singles	< 100	< 100	104.5	< 100	< 100	< 100	105.3	< 100	< 100	< 100	System adjustments after the first contingency"	
	P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1 AND P1L_LADWP10b_Line VICTORVL 500.0 to MCCULLGH 500.0 Circuit 2	P6*	overlapping singles	< 100	< 100	112.2	< 100	< 100	< 100	120.6	< 100	< 100	< 100		
24042 ELDORDO MCCULLGH 500 1 1	P1L_24074_Line LUGO 500.0 to MOHAVE 500.0 Circuit 1 AND P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	136.3	< 100	< 100	< 100	108.8	< 100	< 100	< 100	Revise the Lugo-Victorville RAS along and rely on congestion management to address Eldorado-McCullough 500 kV tie overloads for P6 contingency, while incorporating transmission projects to interconnect out-of-state wind resources as they are materialized.	
	P1L_NV_AZ058_Line MEAD 500.0 to MARKETPL 500.0 Circuit 1 AND P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	100.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
15021 PALOVRDE PV_CLRV_R 500 1 1	P1L_24112y_Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1 AND P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	107.0	< 100	< 100	< 100	< 100	< 100	The P6 overloads and power flow divergence concerns could be mitigated through the use of existing RAS and operational mitigations, including post-contingency generation curtailment as system adjustment in the SCE Eastern and DCRT systems.	
	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P6*	overlapping singles	< 100	102.6	< 100	< 100	NotConv	< 100	< 100	< 100	NotConv	< 100		
29251 PV_CLRV_R 500 24900 COLRIVER 500 1 1	P1L_24112y_Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1 AND P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	106.4	< 100	< 100	< 100	< 100	< 100		
	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P6*	overlapping singles	< 100	102.0	< 100	< 100	NotConv	< 100	< 100	< 100	NotConv	< 100		
29253 DVRS_RB_12 500 24374 REDBLUFF 500 1 1 (29255 DVRS_RB_22 500 24374 REDBLUFF 500 2 1)	P1G_24001_Gen Alamos Repower AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P3*	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	147.6	< 100		
	P1L_241_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6*	overlapping singles	105.1	< 100	< 100	< 100	101.1	< 100	< 100	< 100	157.5	< 100		
	P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6*	overlapping singles	102.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	115.4	< 100	< 100	100.7	NotConv	< 100		
	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P6*	overlapping singles	113.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6*	overlapping singles	113.4	< 100	< 100	< 100	115.1	< 100	< 100	100.5	NotConv	< 100		
	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6*	overlapping singles	113.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
	P1L_SDGE20RASA_22930 ECO-22468 MIGUEL 500KV &1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6*	overlapping singles	104.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	155.3	< 100		
29254 DVRS_RB_21 500 29255 DVRS_RB_22 500 2 1	P1L_241_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1 AND P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.7	< 100		
	P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	100.2	< 100	< 100	< 100	NotConv	< 100		
24801 DEVERS VALLEYSC 500 24151	P1L_24153_Line DEVERS 500.0 to VALLEYSC 500.0 Circuit 2 AND P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.3	< 100		
	P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1 AND P1L_24153_Line DEVERS 500.0 to VALLEYSC 500.0 Circuit 2	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	101.7	< 100		
24801 DEVERS DVRS_RB_11 500 29252 DVRS_RB_11 500 1 1 (24801 DEVERS 500 29254 DVRS_RB_21 500 2 1)	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P1	Single Contingency	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	144.3	< 100		
	P1G_24001_Gen Alamos Repower AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P3*	G-1/N-1	100.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	149.1	< 100		
	P1L_241_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	(blank)	106.2	< 100	< 100	< 100	102.2	< 100	< 100	< 100	159.1	< 100		
	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	116.6	< 100	< 100	101.8	NotConv	< 100		
	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6*	overlapping singles	114.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak	B4R: 2040 Summer Peak	B5: 2030 Summer-Off Peak	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak	S1: 2030SP High CEC Load	S2: 2027SP Heavy Renewable	S3: 2027 Spring OP BESS Charging		
	P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6*	overlapping singles	105.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	156.9	< 100		
24590 MW_VINCNT_12 500 24156 VINCENT 500 1 1 (or 24592 MW_VINCNT_22 500 24156 VINCENT 500 2 1)	P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2	P1	Single Contingency	150.0								158.6			
	P1G_24010_Gen Mountainview Block 2 AND P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2	P3*	G-1/N-1	154.3								161.1			
	P1G_24012_Palo Verde Unit No.2 AND P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2	P3*	G-1/N-1	163.5								172.1			
	P1DC_PDC1_PDCI CONVERTER MONOPOLE #1 AND P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2	P6*	overlapping singles	186.0			156.2								
	P1L_2409_Line MIDWAY 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2	P6*	overlapping singles	178.0			173.5					180.8			
30060 MIDWAY 500 24593 MW_VINCNT_21 500 2 1 (30060 MIDWAY 500 24591 MW_VINCNT_11 500 1 1)	P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P1	Single Contingency	151.1								159.4			
	P1G_24010_Gen Mountainview Block 2 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P3*	G-1/N-1	155.4								161.8			
	P1G_24012_Palo Verde Unit No.2 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P3*	G-1/N-1	164.6								172.9			
	P1DC_PDC1_PDCI CONVERTER MONOPOLE #1 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	187.2			158.7								
	P1DC_SUNZIA2_SUNZIA CONVERTER MONOPOLE #1 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	160.9								169.5			
	P1G_PALV2_APS Palo Verde Unit No.2 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	164.6								172.9			
	P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1 AND P1DC_PDC2_PDCI CONVERTER MONOPOLE #2	P6*	overlapping singles	187.5											
	P1L_2409_Line MIDWAY 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	178.8			175.9					181.0			
	P1L_24120_Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	173.9								185.6			
30060 MIDWAY 500 24595 MW_WRLWIND_31 500 3 1	N2_1P26_N2S_NoRAS_MIDWAY-Vincent 500KV N-2 W/O Path26 RAS or OP	N2/P6	Always Credible Common Corridor	114.5	< 100	< 100	111.8	< 100	< 100	< 100	< 100	118.3	< 100		
	N2_4P26_N2S_RAS1_MIDWAY-Vincent 500KV N-2 WITH Path26 N2S RAS	N2/P6	Always Credible Common Corridor	< 100	NA	NA	< 100	< 100	< 100	< 100	NA	< 100	< 100		
	P1L_24208_Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1 AND P1L_24207_Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1	P6*	overlapping singles	< 100	101.1	< 100	< 100	< 100	< 100	< 100	101.0	< 100	< 100		
24595 MW_WRLWIND_31 500 24594 MW_WRLWIND_32 500 3 1	Base Case	P0	Normal Operation	< 100	118.8	< 100	< 100	< 100	< 100	< 100	118.3	< 100	< 100		
	N2_1P26_N2S_NoRAS_MIDWAY-Vincent 500KV N-2 W/O Path26 RAS or OP	N2/P6	Always Credible Common Corridor	106.9	< 100	< 100	104.0	< 100	< 100	< 100	< 100	109.8	< 100		
	N2_4P26_N2S_RAS1_MIDWAY-Vincent 500KV N-2 WITH Path26 N2S RAS	N2/P6	Always Credible Common Corridor	< 100	NA	NA	< 100	< 100	< 100	< 100	NA	< 100	< 100		
24594 MW_WRLWIND_32 500 29402 WIRLWIND 500 3 1	N2_1P26_N2S_NoRAS_MIDWAY-Vincent 500KV N-2 W/O Path26 RAS or OP	N2/P6	Always Credible Common Corridor	115.2	< 100	< 100	112.0	< 100	< 100	< 100	< 100	119.1	< 100		
	N2_4P26_N2S_RAS1_MIDWAY-Vincent 500KV N-2 WITH Path26 N2S RAS	N2/P6	Always Credible Common Corridor	< 100	NA	NA	< 100	< 100	< 100	< 100	NA	< 100	< 100		
	N2_6P26_S2N_OP_MIDWAY-Vincent 500KV N-2 WITH Path26 S2N OP	N2/P6	Always Credible Common Corridor	109.0	< 100	< 100	100.1	< 100	< 100	< 100	< 100	115.9	< 100		
29402 WIRLWIND 500 29401 WINDHUB 500 1 1	P1L_24207_Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	107.9	< 100	< 100	< 100	< 100	< 100		
	P1G_24003_Diablo Canyon PP No.2 AND P1L_24207_Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1	P3*	G-1/N-1	< 100	< 100	< 100	< 100	108.4	< 100	< 100	< 100	< 100	< 100		
	P1L_24209_Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	108.2	< 100	< 100	< 100	< 100	< 100		
29400 ANTELOPE 500 24156 VINCENT 500 1 1	P1L_2409_Line MIDWAY 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_24206_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 2	P6*	overlapping singles	< 100	101.3	< 100	< 100	112.4	< 100	< 100	< 100	< 100	< 100		
	P1L_24120_Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_24206_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 2	P6*	overlapping singles	102.9	< 100	< 100	< 100	122.8	< 100	< 100	< 100	112.7	< 100		
	P1L_24206_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 2 AND P1L_24120_Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3	P6*	overlapping singles	102.9	< 100	< 100	< 100	122.9	< 100	< 100	< 100	112.7	< 100		
	P1L_24209_Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 AND P1L_24206_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 2	P6*	overlapping singles	< 100	< 100	< 100	< 100	106.3	< 100	< 100	< 100	< 100	< 100		
The P1 and P3 overloads could be eliminated by Tehachapi CRAS and operational mitigation actions reducing generation in the Windhub area															

1. The P1 and P3 overloads with the heavy Path 26 flow from north to south up to the 4000 MW limit (B1/S2) could be eliminated by operational mitigation actions reducing power flow via Path 26. The P1 overload would lead to congestion issue that needs to be assessed in economic study.

2. The P6 overloads with the heavy Path 26 flow scenarios from north to south up to the 4000 MW limit and (B1/B4/S2) could be eliminated by operational mitigation actions reducing power flow import via Path 26 after the 1st contingency.

1. The P0 overload with the heavy Path 26 flow from south to north up to the 3000 MW limit (B2/S1) could be eliminated by operational mitigation actions, including reducing power flow via Path 26 and/or dispatching energy storage in charging mode in the Tehachapi area. The P0 overload would lead to congestion issue that needs to be assessed in economic study;

2. The credible N-2 overloads for the operating scenarios with heavy Path 26 flow from north to south up to the 4000 MW limit (B1/B4/S2) could be eliminated by the PG&E Path 26 RAS curtailing generation and the SCE Path 26 RAS dropping loads;

3. The P6 overloads for the operating scenarios with heavy Path 26 flow from north to south up to the 4000 MW limit (B1/B4/S2) could be eliminated by operational mitigation actions reducing power flow import via Path 26 after the 1st contingency.

The P1 and P3 overloads could be eliminated by Tehachapi CRAS and operational mitigation actions reducing generation in the Windhub area

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak	B4R: 2040 Summer Peak	B5: 2030 Summer-Off Peak	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak	S1: 2030SP High CEC Load	S2: 2027SP Heavy Renewable	S3: 2027 Spring OP BESS Charging		
29400 ANTELOPE 500 24156 VINCENT 500 2 1	P1L_2409_Line MIDWAY 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_24205_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	< 100	101.3	< 100	< 100	112.4	< 100	< 100	< 100	< 100	< 100	The P6 overloads could be eliminated by operational mitigation actions, by reducing power flow import or export via Path 26 or curtaining generation as needed after the 1st contingency of P6 contingency	
	P1L_24120_Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_24205_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	102.8	< 100	< 100	< 100	122.8	< 100	< 100	< 100	112.6	< 100		
	P1L_24205_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 1 AND P1L_2409_Line MIDWAY 500.0 to WIRLWIND 500.0 Circuit 3	P6*	overlapping singles	< 100	100.9	< 100	< 100	< 100	< 100	< 100	100.1	< 100	< 100		
	P1L_24205_Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 1 AND P1L_24120_Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3	P6*	overlapping singles	102.8	< 100	< 100	< 100	122.9	< 100	< 100	< 100	112.7	< 100		
29400 ANTELOPE 500 29402 WIRLWIND 500 1 1	P1L_2409_Line MIDWAY 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_24207_Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	103.4	< 100	< 100	< 100	< 100	< 100	The P6 overloads could be eliminated by operational mitigation actions, by reducing power flow import or export via Path 26 or curtaining generation as needed after the 1st contingency of P6 contingency	
	P1L_24120_Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_24207_Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1	P6*	overlapping singles	106.3	< 100	< 100	< 100	113.3	< 100	< 100	< 100	120.3	< 100		
	P1L_24207_Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 AND P1L_24208_Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1	P6*	overlapping singles	< 100	< 100	< 100	< 100	101.8	< 100	< 100	< 100	106.8	< 100		
	P1L_24072_Line LUGO 500.0 to VINCENT 500.0 Circuit 2 AND P1L_24071_Line LUGO 500.0 to VINCENT 500.0 Circuit 1	P6*	overlapping singles	110.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	118.2	< 100		
24156 VINCENT 500 29402 WIRLWIND 500 3 1	P1L_24072_Line LUGO 500.0 to VINCENT 500.0 Circuit 2 AND P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P6*	overlapping singles	121.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	Mitigated by the previously approved Imperial Valley North of SONG 500 kV line project in the long term, and existing SDG&E 500 kV RAS in the near-term	
24156 VINCENT 500 24386 MESA CAL 500 1 1	P1L_24072_Line LUGO 500.0 to VINCENT 500.0 Circuit 2 AND P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P6*	overlapping singles	121.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
24086 LUGO 500 24156 VINCENT 500 1 1	P1L_24072_Line LUGO 500.0 to VINCENT 500.0 Circuit 2 AND P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P6*	overlapping singles	121.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
22844 TALEGA 230 24131 S.ONOFRE 230 1 1	P1L_241_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1 AND P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.1	< 100		
22844 TALEGA 230 24131 S.ONOFRE 230 1 1	P1L_242_Line SYLMAR220 230.0 to GOULD 230.0 Circuit 1 AND P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.4	< 100		
	P1L_2430_Line EAGLROCK 230.0 to SYLMAR220 230.0 Circuit 1 AND P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.4	< 100		
	P1L_2430_Line EAGLROCK 230.0 to SYLMAR220 230.0 Circuit 1 AND P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P6*	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.4	< 100		
22357 IV PFC1 230 22358 IV PFC 230 1 1 (22357 IV PFC1 230 22358 IV PFC 230 2 1)	P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P1	Single Contingency	105.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	112.4	< 100	Mitigated by the previously approved Imperial Valley North of SONG 500 kV line project in the long term, and existing SDG&E 500 kV RAS in the near-term	
	P1G_24015_Gen PEN Plant (SDG&E) AND P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P3*	G-1/N-1	109.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
	P1G_24016_Gen OTAY MESA Plant (SDG&E) AND P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P3*	G-1/N-1	109.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	116.0	< 100		
	P1DC_PDC1_PDCI CONVERTER MONOPOLE #1 AND P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P6*	overlapping singles	104.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
	P1DC_PDC2_PDCI CONVERTER MONOPOLE #2 AND P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P6*	overlapping singles	104.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
	P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1 AND P1L_SDGE30RAS0_23310 OCOTILLO-22885 SUNCREST 500KV &1	P6*	overlapping singles	NotConv	< 100	< 100	< 100	139.8	< 100	< 100	106.1	NotConv	150.9		
	P1L_SDGE30RAS0_23310 OCOTILLO-22885 SUNCREST 500KV &1 AND P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P6*	overlapping singles	NotConv	< 100	< 100	< 100	140.1	< 100	< 100	105.3	NotConv	151.1		
	P1L_SDGE30RAS0_23310 OCOTILLO-22885 SUNCREST 500KV &1 AND P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P6*	overlapping singles	NotConv	< 100	< 100	< 100	140.1	< 100	< 100	105.3	NotConv	151.1		

Note (*): P6 and P3 results are reported without System adjustment between the two single P1 events



Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)*								Voltage PU (Sensitivity Scenarios)*			Project & Potential Mitigation Solutions
					B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak	B4R: 2040 Summer Peak	B5: 2030 Summer-Off Peak	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak	S1: 2030SP High CEC Load	S2: 2030SP Heavy Renewable	S3: 2027 Spring OP BESS Charging		
240020 OBERON 500 KV	Base Case	P0	Base Case	Low Voltage									1.026		Low voltage issues under normal conditions and potential voltage instability during single transmission line outages were observed in the SCE bulk system with high renewable generation in the near-term (B1/S2). In the long-term (B4), the SCE main local system study at 1-in-10 load levels identified low voltages at major 500 kV substations, despite most of gas generation and about 1,000 MW of energy storage dispatched in the western LA Basin (Zone 996). Similar but more severe voltage issues were identified in the SCE Main system study.	
240205 ROMOLA 500 KV	Base Case	P0	Base Case	Low Voltage									1.035			
24086 LUGO 500 KV	Base Case	P0	Base Case	Low Voltage	1.038								1.038			
24092 MIRALOMA 500 KV	Base Case	P0	Base Case	Low Voltage									1.032			
241018 EASLEY 500 KV	Base Case	P0	Base Case	Low Voltage									1.027			
241158 TOT915_GSU_H 500 KV	Base Case	P0	Base Case	Low Voltage									1.038			
24138 SERRANO 500 KV	Base Case	P0	Base Case	Low Voltage	1.039								1.027	1.039		
24151 VALLEYSO 500 KV	Base Case	P0	Base Case	Low Voltage									1.035			
24156 VINCENT 500 KV	Base Case	P0	Base Case	Low Voltage	1.036								1.024			
24162 VINCEN&1 500 KV	Base Case	P0	Base Case	Low Voltage	1.025								1.011			
24236 RANCHYST 500 KV	Base Case	P0	Base Case	Low Voltage	1.039								1.033		Steady-state and dynamic reactive power support facilities at various candidate substations or nearby locations will be evaluated to determine optimal siting and Mvar sizing for both near-term and long-term needs. Locations and sizes under consideration include, but are not limited to: Eldorado (900, -300 Mvar), Lugo (1200, -300 Mvar), Vincent (900, -200 Mvar), Devers (600 Mvar), Mesa (900 Mvar), Lighthipe (300 Mvar), and Del Amo (300 Mvar). The technology options could be shunt capacitor/reactor, Static Var Systems including SVC and STARCOM, Synchronizer Condenser, or hybrid. Further evaluation is required to refine these options, confirm feasibility, and ensure compliance with applicable voltage criteria.	
24374 REDBLUFF 500 KV	Base Case	P0	Base Case	Low Voltage									1.026			
24384 EAST TS 500 KV	Base Case	P0	Base Case	Low Voltage	1.039								1.029			
24385 WEST TS 500 KV	Base Case	P0	Base Case	Low Voltage	1.039								1.028			
24386 MESA CAL 500 KV	Base Case	P0	Base Case	Low Voltage	1.027								1.013			
24573 HAE SVCL 500 KV	Base Case	P0	Base Case	Low Voltage	1.020	1.027		1.034	1.032	1.014	1.020	1.028	1.019	1.019		
24801 DEVERS 500 KV	Base Case	P0	Base Case	Low Voltage					1.034				1.029			
24849 DELAMO 500 KV	Base Case	P0	Base Case	Low Voltage												
24900 COLRIVER 500 KV	Base Case	P0	Base Case	Low Voltage									1.037			
25660 MIRA81X2 500 KV	Base Case	P0	Base Case	Low Voltage									1.032			
29400 ANTELOPE 500 KV	Base Case	P0	Base Case	Low Voltage									1.031			
29401 WINDHUB 500 KV	Base Case	P0	Base Case	Low Voltage									1.037			
29402 WIRLWIND 500 KV	Base Case	P0	Base Case	Low Voltage					1.035							
24097 MOHAVE 500 KV	Base Case	P0	Base Case	High Voltage		1.082									A high voltage issue was observed at the Mohave 500 kV bus during the 2030 summer peak base case and real-time operations due to inadequate reactive power regulation. Steady-state and dynamic reactive power support facilities may be considered at three candidate locations, such as ±(100~300) Mvar at Mohave or Eldorado 500 kV bus, ±(100~300) Mvar at Lugo 500 kV substation. Further evaluation is required to verify the high voltage issue and determine the appropriate Mvar sizing and locations for reactive power facilities in both the near-term and long-term.	

Note (*): Voltage in blank cell is within applicable voltage criteria

Substation	Contingency	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak	B4R: 2040 Summer Peak	B5: 2030 Summer-Off Peak	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak		S1: 2030SP High CEC Load	S2: 2027SP Heavy Renewable	S3: 2027 Spring OP BESS Charging	
OCOTIL&1 500 kV	P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8		< 8	9.69	5.47	Mitigated by the existing SDG&E 500 kV RAS dropping generation in the Imperial Valley area
SUNCREST 500 kV	P1L_SDGE20RAS0_22930 ECO-22468 MIGUEL 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8		< 8	9.69	5.47	



Transient Stability

Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios		
			B7: 2027 Spring Off-Peak	B2: 2030 Summer Peak	B3: 2035 Summer Peak	B8: 2035 Spring Off-Peak	S1: 2030SP High CEC Load	S3: 2027 Spring OP BESS Charging	
P1-1_P1.2_Lugo 500 kV_3-PH	P1	Single Contingency	stable	stable	stable	disruption	TBD	TBD	further investigation on disruption
P1-2_P1.2_Imperial Valley 500 kV_3-PH	P1	Single Contingency	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P1-3_P1.1_Palo Verde 500 kV_3-PH	P1	Single Contingency	stable	stable	oscillation	stable	TBD	TBD	further investigation on oscillation
P1-25_P1.2_Valley 500 kV_3-PH	P1	Single Contingency	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P1-28_P1.2_Devers 500 kV_3-PH	P1	Single Contingency	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P1-29_P1.2_Devers 500 kV_3-PH	P1	Single Contingency	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P1-30_P1.2_N.Gila 500 kV_3-PH	P1	Single Contingency	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P4-54_P4.2_Devers 500 kV_1-PH	P4	stuck breaker	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P7-144_P7.1_Mira Loma 500 kV_1-PH	P7	common structure	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P7-178_P7.1_Mesa 500 kV_1-PH	P7	common structure	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P7-179_P7.1_Lugo 500 kV_1-PH	P7	common structure	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario
P7-180_P7.1_Mira Loma 500 kV_1-PH	P7	common structure	stable	stable	stable	stable	TBD	TBD	criteria met in base scenario

Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions
			B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak	B4R: 2040 Summer Peak	B5: 2030 Summer-Off Peak	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak	S1: 2030SP High CEC Load	S2: 2027SP Heavy Renewable	S3: 2027 Spring OP BESS Charging	

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

Single Source Substation with more than 100 MW Load

Substation	Load Served (MW)										Potential Mitigation Solutions
	B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak	B4R: 2040 Summer Peak	B5: 2030 Summer-Off Peak	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak	S1: 2030SP High CEC Load	S2: 2027SP Heavy Renewable	S3: 2027 Spring OP BESS Charging	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off-Peak	2027 Spring Off-Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
BRIDGEVILLE-GARBERVILLE 60KV	Base case	P0	Base case	108	39	47	31	92	67	27	43	101	93	39	Garberville Area Reinforcement		
	P1-2-A1.14: HMBLT BY-HARRIS 60KV [0] MOAS OPENED ON HARRIS_HARRISST	P1	N-1	100	34	40	26	86	68	26	40	93	87	33	Garberville Area Reinforcement		
	P1-2-A1.2: HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P1	N-1	102	34	40	26	93	68	26	40	97	95	33	Garberville Area Reinforcement		
	P1-2-A1.3: BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	105	34	40	26	102	70	26	40	102	104	33	Garberville Area Reinforcement		
	BRIDGEVILLE-COTTONWOOD 115KV [1110]&HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P6	N-1-1	<100	<100	<100	<100	100	<100	<100	<100	100	99	<100	Garberville Area Reinforcement		
HMBLT BY-HARRIS 60KV	P1-2-A1.10: HUMBOLDT-EUREKA 60KV [7120] MOAS OPENED ON HUMBOLDT_HARRIS	P1	N-1	71	76	89	22	59	71	76	116	51	59	47	Continue to Monitor		
HUMBOLDT BAY-HUMBOLDT #1 60KV	UMBOLDT-EUREKA 60KV [7120] MOAS OPENED ON HUMBOLDT_HARRIS&HUMBOLDT1-25 25.00KV Gen Unit	P3	G-1/N-1	<100	<100	100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to Monitor		
	P1-2-A1.12: HUMBOLDT BAY-HUMBOLDT #2 60KV [7090]	P1	N-1	88	97	81	17	93	67	71	47	96	93	110	Continue to Monitor		
HUMBOLDT BAY-RIO DELL JCT 60KV	P7-3-A1.2: HUMBOLDT BAY & HUMBOLDT BAY LINES	P7	DTCL	96	97	81	17	96	69	65	44	104	96	111	Continue to Monitor		
HUMBOLDT BRIDGEVILLE 115KV	HUMBOLDT-BRIDGEVILLE 115KV [1810]&BRIDGEVILLE-COTTONWOOD 115KV [1110]	P6	N-1-1	100	<100	<100	<100	100	<100	<100	<100	<100	100	<100	Continue to Monitor		
HUMBOLDT-BRIDGEVILLE 115KV	P1-2-A1.2: HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P1	N-1	68	68	87	59	85	62	54	79	75	87	112	Continue to Monitor		
	P2-1-A1.1: HUMBOLDT-TRINITY 115KV [1820] (HUMBOLDT-TRINITY)	P2	Bus/Breaker	66	66	86	58	82	61	52	79	72	84	106	Continue to Monitor		
	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	48	107	51	62	63	36	76	NConv	60	63	147	Continue to Monitor		
	P2-3-A1.1: HUMBOLDT -MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	40	105	NConv	51	51	32	75	NConv	48	51	147	Continue to Monitor		
	P2-3-A1.2: HUMBOLDT -MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	48	107	51	62	63	36	76	NConv	60	63	147	Continue to Monitor		
	P2-3-A1.3: HUMBOLDT -MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	51	62	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	48	107	51	65	63	36	76	NConv	60	63	147	Install redundant relay		
	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	40	105	NConv	52	51	32	75	NConv	48	51	147	Install redundant battery supply		
	HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP&BRIDGEVILLE-COTTONWOOD 115KV [1110]	P6	N-1-1	<100	100	<100	<100	<100	<100	<100	<100	<100	35	100	Continue to Monitor		
	HUMBOLDT 11560KV TB 2&HUMBOLDT 11560KV TB 1	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	101	Continue to Monitor		
METCALF-MANNING SCAP 500KV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	NA	NA	NConv	100	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P2-3-A1.1: HUMBOLDT -MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	NA	NA	NConv	100	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P2-3-A1.2: HUMBOLDT -MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	100	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P2-3-A1.3: HUMBOLDT -MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	100	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	NA	NA	NConv	100	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	NA	NA	NConv	100	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
RIO DELL JCT-BRIDGEVILLE 60KV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	90	19	13	23	110	64	17	NConv	110	110	20	Garberville Area Reinforcement		
	P2-3-A1.1: HUMBOLDT -MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	96	19	13	23	118	67	17	NConv	120	118	20	Garberville Area Reinforcement		
	P2-3-A1.2: HUMBOLDT -MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	90	19	13	23	110	64	17	NConv	110	110	20	Garberville Area Reinforcement		
	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	86	15	9	20	108	61	13	NConv	107	108	16	Garberville Area Reinforcement		
	P2-3-A1.1: HUMBOLDT -MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	93	15	9	20	116	64	13	NConv	116	116	16	Garberville Area Reinforcement		
	P2-3-A1.2: HUMBOLDT -MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	86	15	9	20	108	61	13	NConv	107	108	16	Garberville Area Reinforcement		
	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	86	14	8	20	107	61	13	NConv	106	107	16	Garberville Area Reinforcement		
	P2-3-A1.1: HUMBOLDT -MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	92	14	8	20	116	63	13	NConv	116	116	16	Garberville Area Reinforcement		
	P2-3-A1.2: HUMBOLDT -MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	86	14	8	20	107	61	13	NConv	106	107	16	Garberville Area Reinforcement		
	P2-1-A1.1: HUMBOLDT-TRINITY 115KV [1820] (HUMBOLDT-TRINITY)	P2	Bus/Breaker	101	34	40	26	92	68	26	40	95	93	33	Garberville Area Reinforcement		
	P2-1-A1.2: BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	104	34	40	26	101	70	26	40	102	103	33	Garberville Area Reinforcement		
	P2-2-A1.2: LOW GAP1 115KV Section 1D	P2	Bus/Breaker	105	34	40	26	102	70	26	40	102	104	33	Garberville Area Reinforcement		
	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	90	19	13	23	110	64	17	NConv	110	110	20	Garberville Area Reinforcement		
	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	96	19	13	23	118	67	17	NConv	120	118	20	Garberville Area Reinforcement		
	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	86	15	9	20	108	61	13	NConv	107	108	16	Garberville Area Reinforcement		
	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	93	15	9	20	116	64	13	NConv	116	116	16	Garberville Area Reinforcement		
	TRINIDAD-ARCATA 60KV	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	86	14	8	20	107	61	13	NConv	106	107	16	Garberville Area Reinforcement	
		P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	92	14	8	20	116	63	13	NConv	116	116	16	Garberville Area Reinforcement	
		P1-2-A1.7: ARCATA-HUMBOLDT 60KV [7110]	P1	N-1	43	49	57	24	39	51	56	100	34	37	35	Garberville Area Reinforcement	
P2-2-A1.1: HUMBOLDT 115KV Section MA		P2	Bus/Breaker	23	71	NConv	80	46	21	42	NConv	37	46	114	Continue to Monitor		
P2-3-A1.1: HUMBOLDT -MA 115KV & HUMBOLDT-TRINITY line		P2	Bus/Breaker	14	68	NConv	64	34	15	41	NConv	25	34	122	Continue to Monitor		
TRINITY-MAPLE CREEK 60KV	P2-3-A1.2: HUMBOLDT -MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	23	71	NConv	80	46	21	42	NConv	37	46	114	Continue to Monitor		
	P2-3-A1.3: HUMBOLDT -MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	80	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	23	72	NConv	79	47	21	42	NConv	37	47	114	Continue to Monitor		
	P2-3-A1.1: HUMBOLDT -MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	15	69	NConv	63	35	16	41	NConv	25	35	122	Continue to Monitor		
	P2-3-A1.2: HUMBOLDT -MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	23	72	NConv	79	47	21	42	NConv	37	47	114	Continue to Monitor		
	P2-3-A1.3: HUMBOLDT -MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	79	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor		
	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	23	71	NConv	80	46	21	42	NConv	37	46	114	Continue to Monitor		
	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	14	68	NConv	64	34	15	41	NConv	25	34	122	Continue to Monitor		
	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	23	72	NConv	79	47	21	42	NConv	37	47	114	Continue to Monitor		
P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	15	69	NConv	63	35	16	41	NConv	25	35	122	Continue to Monitor			

Substation	Contingency (AI and Worst 6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off Peak	2037 Spring Off Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
ARCATA 60 kV	P1-3-A1.1: HUMBOLDT 11560KV TB 1&P1-3-A1.2: HUMBOLDT 11560KV TB 2	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
ARCATA 60 kV	P1-3-A1.2: HUMBOLDT 11560KV TB 2&P1-3-A1.1: HUMBOLDT 11560KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
ARCATA 60kV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	NA	NA	NConv	0.50	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
ARCATA 60kV	P2-3-A1.1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	NA	NA	NConv	0.48	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
ARCATA 60kV	P2-3-A1.2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.50	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
ARCATA 60kV	P2-3-A1.3: HUMBOLDT - MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.50	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
ARCATA 60kV	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay/battery	NA	NA	NConv	0.50	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
ARCATA 60kV	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay/battery	NA	NA	NConv	0.47	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
BRDVILLE 60 kV	P1-2-A1.15: HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC, NEWBURG&P1-3-A1.3: BRDVILLE 11560KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.88	>0.9	>0.9	Garberville Area Reinforcement
BRDVILLE 60 kV	P1-2-A1.21: RIO DELL JCT-BRDVILLE 60KV [7850] MOAS OPENED ON CARLOTTA, SWINS FLT&P1-3-A1.3: BRDVILLE 11560KV TB 1	P6	N-1-1	0.51	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.54	>0.9	>0.9	Garberville Area Reinforcement
BRDVILLE 60 kV	P1-3-A1.3: BRDVILLE 11560KV TB 1&P1-2-A1.15: HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC, NEWBURG	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.89	>0.9	>0.9	Garberville Area Reinforcement
EUREKA 60 kV	P1-3-A1.1: HUMBOLDT 11560KV TB 1&P1-3-A1.2: HUMBOLDT 11560KV TB 2	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
EUREKA 60 kV	P1-3-A1.2: HUMBOLDT 11560KV TB 2&P1-3-A1.1: HUMBOLDT 11560KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
EUREKA 60kV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	1.03	1.03	NConv	0.48	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
EUREKA 60kV	P2-3-A1.1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	1.03	1.03	NConv	0.46	0.97	0.97	0.98	NConv	1.03	0.97	1.02	Continue to Monitor
EUREKA 60kV	P2-3-A1.2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	1.03	1.03	NConv	0.49	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
EUREKA 60kV	P2-3-A1.3: HUMBOLDT - MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.49	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
EUREKA 60kV	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.48	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
EUREKA 60kV	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.46	0.97	0.97	0.98	NConv	1.03	0.97	1.02	Continue to Monitor
EUREKA A 60 kV	P1-3-A1.1: HUMBOLDT 11560KV TB 1&P1-3-A1.2: HUMBOLDT 11560KV TB 2	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
EUREKA A 60 kV	P1-3-A1.2: HUMBOLDT 11560KV TB 2&P1-3-A1.1: HUMBOLDT 11560KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
EUREKA A 60kV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	1.03	1.03	NConv	0.49	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
EUREKA A 60kV	P2-3-A1.1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	1.03	1.03	NConv	0.46	0.97	0.97	0.98	NConv	1.03	0.97	1.01	Continue to Monitor
EUREKA A 60kV	P2-3-A1.2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	1.03	1.03	NConv	0.49	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
EUREKA A 60kV	P2-3-A1.3: HUMBOLDT - MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.49	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
EUREKA A 60kV	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.49	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
EUREKA A 60kV	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.46	0.97	0.97	0.98	NConv	1.03	0.97	1.01	Continue to Monitor
FAIRHAVEN 60kV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	NA	NA	NConv	0.51	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
FAIRHAVEN 60kV	P2-3-A1.1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	NA	NA	NConv	0.48	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
FAIRHAVEN 60kV	P2-3-A1.2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.51	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
FAIRHAVEN 60kV	P2-3-A1.3: HUMBOLDT - MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.51	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
FAIRHAVEN 60kV	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay/battery	NA	NA	NConv	0.51	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
FAIRHAVEN 60kV	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay/battery	NA	NA	NConv	0.48	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
GRBVILLE 60 kV	P1-2-A1.1: HUMBOLDT-BRDVILLE 115KV [1810]&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-2-A1.13: HUMBOLDT-APPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT, MPLE CR&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	0.57	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-2-A1.15: HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC, NEWBURG&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-2-A1.2: HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY, JESS&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	0.57	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-2-A1.21: RIO DELL JCT-BRDVILLE 60KV [7850] MOAS OPENED ON CARLOTTA, SWINS FLT&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	0.57	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-2-A1.3: BRIDGEVILLE-COTTONWOOD 115KV [1108]&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	0.56	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-2-A1.4: HUMBOLDT BAY-HUMBOLDT #1 115KV [1800]&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-3-A1.1: HUMBOLDT 11560KV TB 1&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	0.57	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-3-A1.2: HUMBOLDT 11560KV TB 2&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	0.57	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-3-A1.3: BRDVILLE 11560KV TB 1&P1-2-A1.15: HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC, NEWBURG	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.85	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-3-A1.4: HUMB&BAYPB 1151.8KV TB 1&P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.68	>0.9	>0.9	Garberville Area Reinforcement
GRBVILLE 60kV	P1-2-A1.23: BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDVILLE, FRUTLITD	P1	N-1	0.57	NA	NA	NA	1.03	0.89	NA	NA	0.73	1.03	NA	Garberville Area Reinforcement
GRBVILLE 60 kV	P1-4-A1.6: GRBVILLE 60.0KV D-H& GRBVILLE 60.0KV D-H& GRBVILLE 60.0KV D-H& GRBVILLE 60.0KV D-H SHUNT DEVICES	P1	N-1	0.85	0.99	0.99	1.02	0.94	0.92	1.02	1.00	0.87	0.94	0.99	Garberville Area Reinforcement
GRBVILLE 60kV	P5-SC-A1.2: BRIDGEVILLE 115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay/battery	0.57	NA	NA	NA	1.03	0.89	NA	NA	0.73	1.03	NA	Garberville Area Reinforcement
HARRIS 60 kV	P1-3-A1.1: HUMBOLDT 11560KV TB 1&P1-3-A1.2: HUMBOLDT 11560KV TB 2	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
HARRIS 60 kV	P1-3-A1.2: HUMBOLDT 11560KV TB 2&P1-3-A1.1: HUMBOLDT 11560KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
HARRIS 60kV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	1.03	1.03	NConv	0.49	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
HARRIS 60kV	P2-3-A1.1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	1.03	1.03	NConv	0.46	0.96	0.96	0.98	NConv	1.03	0.96	1.01	Continue to Monitor
HARRIS 60kV	P2-3-A1.2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	1.03	1.03	NConv	0.49	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
HARRIS 60kV	P2-3-A1.3: HUMBOLDT - MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.49	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
HARRIS 60kV	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.49	0.97	0.97	0.98	NConv	1.03	0.97	1.03	Continue to Monitor
HARRIS 60kV	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.46	0.96	0.96	0.98	NConv	1.03	0.96	1.01	Continue to Monitor
HMBLT BY 60 kV	P1-3-A1.1: HUMBOLDT 11560KV TB 1&P1-3-A1.2: HUMBOLDT 11560KV TB 2	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
HMBLT BY 60 kV	P1-3-A1.2: HUMBOLDT 11560KV TB 2&P1-3-A1.1: HUMBOLDT 11560KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
HMBLT BY 60kV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	1.03	1.03	NConv	0.49	0.99	0.99	1.00	NConv	1.03	0.99	1.03	Continue to Monitor
HMBLT BY 60kV	P2-3-A1.1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	1.03	1.03	NConv	0.46	0.98	0.98	0.99	NConv	1.03	0.98	1.02	Continue to Monitor
HMBLT BY 60kV	P2-3-A1.2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 line	P2	Bus/Breaker	1.03	1.03	NConv	0.49	0.99	0.99	1.00	NConv	1.03	0.99	1.03	Continue to Monitor
HMBLT BY 60kV	P2-3-A1.3: HUMBOLDT - MA 115KV & HUMB115-HUMBOLDT #1 line	P2	Bus/Breaker	NA	NA	NConv	0.48	NA	NA	NA	NConv	NA	NA	NA	Continue to Monitor
HMBLT BY 60kV	P5-SA-A1.1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.49	0.99	0.99	1.00	NConv	1.03	0.99	1.03	Continue to Monitor
HMBLT BY 60kV	P5-SC-A1.1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-redundant relay/battery	1.03	1.03	NConv	0.46	0.99	0.99	0.99	NConv	1.03	0.99	1.02	Continue to Monitor
MPLE CRK 60 kV	P1-3-A1.1: HUMBOLDT 11560KV TB 1&P1-3-A1.2: HUMBOLDT 11560KV TB 2	P6	N-1-1	>0.9	>0.9	>0.9	0.57	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
MPLE CRK 60 kV	P1-3-A1.2: HUMBOLDT 11560KV TB 2&P1-3-A1.1: HUMBOLDT 11560KV TB 1	P6	N-1-1	>0.9	>0.9	>0.9	0.57	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
MPLE CRK 60kV	P2-2-A1.1: HUMBOLDT 115KV Section MA	P2	Bus/Breaker	1.03	1.02	NConv	0.58	0.96	0.96	0.98	NConv	1.02	0.96	0.98	Continue to Monitor
MPLE CRK 60kV	P2-3-A1.1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY line	P2	Bus/Breaker	1.03	1.01	NConv	0.53	0.96	0.96	0.97	NConv	1.03	0.96	0.90	Continue to Monitor



Substation	Contingency	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off-Peak	2027 Spring Off-Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
FRT SWRD 60 kV	P1-2:A1:23:_BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED on BRDGVILLE_FRUTLDJT	P1	N-1	41	<8%	<8%	<8%	<8%	13	<8%	<8%	27	<8%	<8%	Garberville Area Reinforcement
	P1-4:A1:6:_GRBRVILLE 60.00KV ID=8H & GRBRVILLE 60.00KV ID=7H & GRBRVILLE 60.00KV ID=5H & GRBRVILLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	10	<8%	<8%	<8%	<8%	<8%	<8%	<8%	10	<8%	<8%	Garberville Area Reinforcement
FRUITLND 60 kV	P1-2:A1:23:_BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED on BRDGVILLE_FRUTLDJT	P1	N-1	42	<8%	<8%	<8%	<8%	13	<8%	<8%	27	<8%	<8%	Garberville Area Reinforcement
GRBRVILLE 60 kV	P1-2:A1:23:_BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED on BRDGVILLE_FRUTLDJT	P1	N-1	41	<8%	<8%	<8%	<8%	14	<8%	<8%	27	<8%	<8%	Garberville Area Reinforcement
	P1-4:A1:6:_GRBRVILLE 60.00KV ID=8H & GRBRVILLE 60.00KV ID=7H & GRBRVILLE 60.00KV ID=5H & GRBRVILLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	13	<8%	<8%	<8%	<8%	<8%	<8%	<8%	13	<8%	<8%	Garberville Area Reinforcement
ORICK 60 kV	P1-2:A1:7:_ARCATA-HUMBOLDT 60KV [7110]	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	10	<8%	<8%	<8%	Garberville Area Reinforcement

Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios		
			2027 Spring Off-Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off-Peak	2027 OP Sensitivity	2030 SP High CEC Forecast	
In accordance with TPL-001-5- Requirement R2.6, this area relies on the past studies from the 2020-21 Transmission Planning Process.									
http://www.caiso.com/Documents/BoardApproved2020-2021TransmissionPlan.pdf									



Worst Contingency	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area Hi-EV sensitivity	

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



Substation	Load Served (MW)														Potential Mitigation Solutions
	2026 Summer Peak	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area H-EV sensitivity	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off Peak	2035 Spring Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
CLEAR LAKE-KONOCITI 60KV	P2-4-A2-5; MENDOCINO 115KV - SECTION 1D & 2D	P2	Bus-tie-breaker	89	106	150	69	80	Diverge	70	56	65	70	83	Operation Solution		
	P5-5AA2-11; MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	87	103	116	68	79	Diverge	68	58	63	68	82	Install Redundant Relay		
	P7-1-A2-23; EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	83	91	98	63	66	108	66	49	65	66	75	Continue to monitor		
CORONA-LAKEVILLE 115KV	P5-5AA2-9; FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	111	53	Diverge	82	47	76	13	67	76	69	Install Redundant Relay		
	P7-1-A2-15; FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DCTL	102	111	53	79	81	47	76	12	67	76	69	Santa Rosa 115 KV Lines Reconducting project		
	P6- FULTON-SANTA ROSA #1 115KV [1620] and FULTON-SANTA ROSA #2 115KV [1630]	P6	N-1-1	102	111	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
CORTINA-MENDOCINO #1 115KV	P2-3-A2-29; EGLE ROCK - MA 115KV & EGLE ROCK-HOMSTKTP-CORTINA LINE	P2	Non-bus-tie-breaker	60	77	Diverge	39	42	Diverge	25	10	58	35	46	Continue to monitor		
	P2-3-A2-27; EGLE ROCK - MA 115KV & EGLE ROCK-FULTON-SILVERDO LINE	P2	Non-bus-tie-breaker	54	69	96	32	38	Diverge	23	13	50	33	42	Continue to monitor		
	P2-2-A2-22; EGLE ROCK 115KV SECTION MA	P2	Bus section fault	54	69	91	32	38	Diverge	23	13	50	32	42	Continue to monitor		
	P2-3-A2-28; EGLE ROCK - MA 115KV & EAGLE ROCK-REDBUD LINE	P2	Non-bus-tie-breaker	54	69	91	32	38	Diverge	23	12	50	32	42	Continue to monitor		
	P5-5AA2-7; EAGLE ROCK 115KV(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	49	64	84	29	32	Diverge	17	8	46	27	38	Continue to monitor		
EAGLE ROCK-REDBUD 115KV	P6- EAGLE ROCK-REDBUD 115KV [1480] (2) and UKIAH-HOPLAND-CLOVERDALE 115KV [4050]	P6	N-1-1	<100	<100	104	<100	<100	130	<100	<100	<100	<100	<100	Continue to monitor		
	P6- UKIAH-HOPLAND-CLOVERDALE 115KV [4050] and CORTINA-MENDOCINO #1 115KV [1330] MOAS OPENED ON LUCERNE1_LUCERNE	P6	N-1-1	100	115	121	<100	<100	Diverge	<100	<100	<100	<100	<100	Operation Solution or capacity increase		
	P2-4-A2-5; MENDOCINO 115KV - SECTION 1D & 2D	P2	Bus-tie-breaker	79	91	126	71	79	Diverge	62	41	54	62	66	Continue to monitor		
EGLE ROCK 115/60KV TB 1	P2-3-A2-24; CLOVERLE - 1D 115KV & UKIAH-HOPLAND-CLOVERDALE LINE	P2	Non-bus-tie-breaker	75	81	85	70	73	104	66	46	54	64	63	Continue to monitor		
	P2-3-A2-25; AIDUNSWSTA 115KV - MIDDLE BREAKER BAY 1	P2	Non-bus-tie-breaker	75	80	85	69	72	107	65	47	57	64	62	Continue to monitor		
	P2-3-A2-26; AIDUNSWSTA 115KV - MIDDLE BREAKER BAY 2	P2	Non-bus-tie-breaker	67	72	76	59	62	107	55	46	57	58	53	Continue to monitor		
	P2-3-A2-67; GEYSERS34 115KV - RING R2 & R3	P2	Non-bus-tie-breaker	57	62	68	48	52	103	46	37	48	45	43	Continue to monitor		
	P5-5AA2-11; MENDOCINO 115 KV BUS 1&2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	77	89	105	70	79	Diverge	61	41	53	61	64	Continue to monitor		
	P5-5AA2-1; CLOVERDALE 115 KV(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	71	77	81	65	68	104	61	44	53	60	59	Continue to monitor		
	P7-1-A2-23; EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	73	82	93	66	70	115	60	37	54	60	61	Continue to monitor		
	P7-1-A2-4; MENDOCINO-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	69	77	88	61	65	107	56	35	50	56	56	Continue to monitor		
	P3- TULUCAY 1-25 25.00KV GEN UNIT V5 and GEYSERS #3-EAGLE ROCK 115KV [1660]	P3	G-1/N-1	<100	<100	<100	<100	<100	101	<100	<100	<100	<100	<100	Continue to monitor		
	P6- UKIAH-HOPLAND-CLOVERDALE 115KV [4050] and CORTINA-MENDOCINO #1 115KV [1330] MOAS OPENED ON LUCERNE1_LUCERNE	P6	N-1-1	<100	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	Continue to monitor		
	P2-1-A2-28; EAGLE ROCK-FULTON-SILVERADO 115KV [4392] (EGLE ROCK-ERT4_23CRU)	P2	Line section open w/o fault	31	25	15	42	37	10	56	101	33	49	45	Continue to monitor		
EGLE ROCK-HOMSTKTP-CORTINA 115KV	P1-2-A6-12; SILVERDO-FULTON-EGLE ROCK 115KV [0]	P1	N-1	31	25	15	42	37	10	56	101	33	49	45	Continue to monitor		
	P2-3-A6-2; SILVERDO - 1E 115KV & SILVERDO-FULTON-EGLE ROCK LINE	P2	Non-bus-tie-breaker	31	25	15	42	37	10	56	101	33	49	45	Continue to monitor		
	P2-3-A2-32; FULTON - 2D 115KV & EGLE ROCK-FULTON-SILVERDO LINE	P2	Non-bus-tie-breaker	31	25	15	42	37	11	56	101	33	49	45	Continue to monitor		
	P7-1-A2-13; EAGLE ROCK-FULTON-SILVERADO & FULTON-PUEBLO LINES	P7	DCTL	32	26	14	43	38	11	57	102	33	50	46	Continue to monitor		
	P7-1-A6-1; SILVERADO-FULTON JCT & FULTON-PUEBLO LINES	P7	DCTL	32	26	14	43	38	11	57	102	33	50	46	Continue to monitor		
	P7-1-A2-13; EAGLE ROCK-FULTON-SILVERADO & FULTON-PUEBLO LINES	P7	DCTL	32	26	14	42	38	11	57	101	33	49	46	Continue to monitor		
	P7-1-A6-1; SILVERADO-FULTON JCT & FULTON-PUEBLO LINES	P7	DCTL	32	26	14	42	38	11	57	101	33	49	46	Continue to monitor		
	P6- UKIAH-HOPLAND-CLOVERDALE 115KV [4050] and CORTINA-MENDOCINO #1 115KV [1330] MOAS OPENED ON LUCERNE1_LUCERNE	P6	N-1-1	<100	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	Continue to monitor		
	P6- CORTINA-MENDOCINO #1 115KV [1330] MOAS OPENED ON LUCERNE1_LUCERNE and FULTON 230/115KV TB 4	P6	N-1-1	<100	<100	<100	<100	<100	101	<100	<100	<100	<100	<100	Continue to monitor		
	P3- GEYSERS12 13.80KV GEN UNIT 1 and LAKEVILLE #1 60KV [7360]	P3	G-1/N-1	<100	<100	102	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	P2-1-A2-28; EAGLE ROCK-FULTON-SILVERADO 115KV [4392] (EGLE ROCK-ERT4_23CRU)	P2	Line section open w/o fault	100	49	39	65	26	40	99	51	105	100	56	Continue to monitor		
FULTON-HOPLAND 60KV	P2-2-A6-12; SILVERDO-FULTON-EGLE ROCK 115KV [0]	P1	N-1	100	49	39	65	26	40	100	51	105	100	56	Continue to monitor		
	P2-3-A6-2; SILVERDO - 1E 115KV & SILVERDO-FULTON-EGLE ROCK LINE	P2	Non-bus-tie-breaker	100	49	39	65	26	40	100	51	105	100	56	Continue to monitor		
	P5-5AA2-8; FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	128	126	Diverge	91	100	275	62	243	275	113	Install Redundant Relay		
	P5-5AA2-9; FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	125	120	Diverge	90	97	275	61	244	275	109	Install Redundant Relay		
	P5-5C(DC)A6-5; STATION DC BATTERY SUPPLY SILVERADO 115KV BATT	P5	Non-Redundant Battery/Relay	100	49	39	65	26	40	100	51	105	100	56	Continue to monitor		
	P5-5AA2-8; FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	129	126	Diverge	91	100	227	62	203	230	113	Install Redundant Relay		
	P5-5AA2-9; FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	126	121	Diverge	90	98	227	61	204	227	109	Install Redundant Relay		
	P7-1-A2-5; GEYSERS #17-FULTON & EAGLE ROCK-FULTON-SILVERADO LINES	P7	DCTL	109	54	43	69	29	43	110	56	112	110	58	Clear Lake 60 KV System Reinforcement		
	P7-1-A2-6; GEYSERS #9-LAKEVILLE & EAGLE ROCK-FULTON-SILVERADO LINES	P7	DCTL	112	55	45	75	30	44	114	57	117	113	61	Clear Lake 60 KV System Reinforcement		
	P7-1-A6-1; SILVERADO-FULTON JCT & FULTON-PUEBLO LINES	P7	DCTL	93	46	35	63	24	37	95	49	101	95	54	Continue to monitor		
	P5-5AA2-8; FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	219	224	Diverge	164	173	4	32	17	7	170	Install Redundant Relay		
FULTON-MOUND-COTATI 60KV	P5-5AA2-9; FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	226	232	Diverge	168	178	4	34	17	5	174	Install Redundant Relay		
	P3- Q1097 0.48KV GEN UNIT 1 and FULTON-MOUND-COTATI 60KV [6910] MOAS OPENED ON	P3	G-1/N-1	<100	<100	111	<100	<100	115	<100	<100	<100	<100	<100	Continue to monitor		
	P6- FULTON-SANTA ROSA #2 115KV [1630] and CORONA-LAKEVILLE 115KV [4311]	P6	N-1-1	104	113	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
FULTON-SANTA ROSA #1 115KV	P6- FULTON-SANTA ROSA #1 115KV [1630] and CORONA-LAKEVILLE 115KV [4311]	P6	N-1-1	104	113	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	P2-4-A2-5; MENDOCINO 115KV - SECTION 1D & 2D	P2	Bus-tie-breaker	86	95	117	63	65	Diverge	67	56	66	66	77	Continue to monitor		
	P7-1-A2-23; EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	100	108	123	75	77	121	79	63	75	78	89	Operation Solution		
GEYSERS #9-CLOVERDALE 115KV	P7-1-A2-4; MENDOCINO-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	89	97	109	67	69	108	72	58	67	70	81	Continue to monitor		
	P7-1-A2-23; EAGLE ROCK-REDBUD & CORTINA-MENDOCINO #1 LINES	P7	DCTL	9	18	30	8	6	107	16	6	12	7	8	Continue to monitor		
	P2-4-A2-5; MENDOCINO 115KV - SECTION 1D & 2D	P2	Bus-tie-breaker	68	86	120	50	63	Diverge	58	39	37	57	58	Continue to monitor		
GEYSERS #9-EAGLE ROCK 115KV	P6- MENDOCINO 115/60KV TB 3 and MENDOCINO 115/60KV TB 1	P6	N-1-1	<100	<100	<100	<100	<100	106	<100	<100	<100	<100	<100	Continue to monitor		
	P2-3-A2-29; EGLE ROCK - MA 115KV & EGLE ROCK-HOMSTKTP-CORTINA LINE	P2	Non-bus-tie-breaker	95	100	Diverge	97	95	Diverge	100	62	67	89	101	Operation Solution		
	P2-4-A2-5; MENDOCINO 115KV - SECTION 1D & 2D	P2	Bus-tie-breaker	95	111	120	94	114	Diverge	82	71	60	80	89	Continue to monitor		
	P2-3-A2-27; EGLE ROCK - MA 115KV & EGLE ROCK-FULTON-SILVERDO LINE	P2	Non-bus-tie-breaker	101	111	104	101	101	Diverge	104	64	67	94	106	Maintenance project Hopland bank on hold - continue to monitor for now		
	P2-2-A2-22; EGLE ROCK 115KV SECTION MA	P2	Bus section fault	100	111	103	101	101	Diverge	104	63	67	93	106	Maintenance project Hopland bank on hold - continue to monitor for now		
	P2-3-A2-28; EGLE ROCK - MA 115KV & EAGLE ROCK-REDBUD LINE	P2	Non-bus-tie-breaker	101	111	103	101	101	Diverge	104	63	67	93	106	Maintenance project Hopland bank on hold - continue to monitor for now		
	P2-1-A2-28; EAGLE ROCK-FULTON-SILVERADO 115KV [4392] (EGLE ROCK-ERT4_23CRU)	P2	Line section open w/o fault	90	98	98	79	82	127	78	79	74	77	94	Maintenance project Hopland bank on hold - continue to monitor for now		
	P2-3-A2-32; FULTON - 2D 115KV & EGLE ROCK-FULTON-SILVERDO LINE	P2	Non-bus-tie-breaker	90	98	98	79	81	127								

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)							Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
MENDOCINO-PHILO ICT-HOPLAND 60KV	P7-1A2-23: EAGLE ROCK- REDBLD & CORTINA-MENDOCINO #1 LINES P6- URIAH-HOPLAND-CLOVERDALE 115KV [4050] and CORTINA-MENDOCINO #1 115KV [1330] MOAS OPENED ON LUCERNE LUCERNE	P7 P6	DTCL N-1-1	53 <100	67 <100	84 <100	52 <100	61 <100	101 Diverge	39 <100	26 <100	39 <100	39 <100	49 <100	Continue to monitor
MENDOCINO-REDBLUD 115KV	P6- URIAH-HOPLAND-CLOVERDALE 115KV [4050] and CORTINA-MENDOCINO #1 115KV [1330] MOAS OPENED ON LUCERNE LUCERNE	P6	N-1-1	<100	107	105	<100	<100	Diverge	<100	<100	<100	<100	<100	Continue to monitor
MENDOCINO-WILLOTS-FRATT BRAGG 60KV	P7- KONOCTE 60.00KV GEN UNIT 1 and MENDOCINO-PHILO ICT-HOPLAND 60KV [7250] MOAS OPENED ON PHILO ICT-HOPLAND IT	P3	G-1/N-1	<100	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	Continue to monitor
NORTH TWR-SOBRANTE 115KV	P2-2A6-16: NORTH TWR 115KV SECTION 1E	P2	Bus section fault	51	16	29	24	12	30	49	12	117	48	20	Continue to monitor
	P2-2A6-17: NORTH TWR 115KV SECTION 1F	P2	Bus section fault	51	16	29	24	12	30	49	12	117	48	20	Continue to monitor
	P2-2A6-18: NORTH TWR 115KV SECTION 1G	P2	Bus section fault	51	16	29	24	12	30	49	12	117	48	20	Continue to monitor
	P2-4A6-5: NORTH TWR 115KV- SECTION 1E & 1F	P2	Bus-tie breaker	51	16	29	24	12	30	49	12	117	48	20	Continue to monitor
	P2-4A6-6: NORTH TWR 115KV- SECTION 1F & 1G	P2	Bus-tie breaker	51	16	29	24	12	30	49	12	117	48	20	Continue to monitor
	P5-5A2-9: FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	115	48	Diverge	75	42	79	12	72	79	73	Santa Rosa 115 KV lines Reconductoring project
SANTA ROSA-CORDINA 115KV	P5-5A2-9: FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	119	50	Diverge	78	44	81	12	73	81	75	Santa Rosa 115 KV lines Reconductoring project
	P7-1A2-15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DTCL	106	115	48	72	75	42	79	12	72	79	73	Santa Rosa 115 KV lines Reconductoring project
	P7-1A2-15: FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7	DTCL	109	119	50	75	77	44	81	12	73	81	75	Santa Rosa 115 KV lines Reconductoring project
	P6- FULTON-SANTA ROSA #1 115KV [1620] and FULTON-SANTA ROSA #2 115KV [1630]	P6	N-1-1	106	115	<100	<100	<100	<100	<100	<100	<100	<100	<100	Santa Rosa 115 KV lines Reconductoring project
TULUCAY-NAPA #2 60KV	P1-2A6-22: TULUCAY-NAPA #1 60KV [8180] MOAS OPENED ON TULCAY1_TULCY IT	P1	N-1	100	53	54	48	32	51	76	16	76	76	38	Napa-Tulucay 60kV line upgrade project
TULUCAY-VACA 230KV	P2-4A2-2: LAKEVILLE 230KV- SECTION 2E & 1E	P2	Bus-tie breaker	95	98	119	42	37	113	53	29	89	52	81	Continue to monitor
	P5-5A2-13: LAKEVILLE 230 KV BUS 1&2 SECTION E(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Batter	95	98	119	42	37	113	53	29	89	52	81	Continue to monitor
	P7-1A2-11: GEYSERS #12-FULTON & GEYSERS #9-LAKEVILLE LINES	P7	DTCL	83	87	102	53	49	96	66	39	77	66	71	Continue to monitor
	P6- VACA LAKEVILLE #1 230KV [5840] and GEYSRS-LAKEVILLE-GEYSR20-GEYSR13 230KV [0] MOAS OPENED ON GLETTT & SANJAVE	P6	N-1-1	<100	<100	<100	<100	<100	110	<100	<100	<100	<100	<100	Continue to monitor
	P2-4A2-5: MENDOCINO 115KV- SECTION 1D & 2	P2	Bus-tie breaker	75	85	105	49	51	Diverge	59	52	58	58	70	Continue to monitor
URIAH-HOPLAND-CLOVERDALE 115KV	P7-1A2-23: EAGLE ROCK- REDBLD & CORTINA-MENDOCINO #1 LINES	P7	DTCL	90	99	111	59	62	96	71	58	67	70	82	Continue to monitor
VACA-LAKEVILLE #1 230KV	P6- TULUCAY-VACA 230KV [5800] and GEYSRS-LAKEVILLE-GEYSR20-GEYSR13 230KV [0] MOAS OPENED ON GLETTT & SANJAVE	P6	N-1-1	<100	<100	<100	<100	<100	112	<100	<100	<100	<100	<100	Continue to monitor



Substation	Contingency (All and Worst P6)		Category	Category Description	Voltage PU (Baseline Scenarios)									Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
GYSRVILLE 60 KV	P5-SA-A2:8:_ FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.45	0.37	0.37	0.53	0.36	0.34	0.92	0.36	0.34	0.59	Install Redundant Relay		
	P5-SA-A2:9:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.46	0.37	0.36	0.53	0.36	0.34	0.92	0.36	0.34	0.58	Install Redundant Relay		
WINDSOR 60 KV	P5-SA-A2:8:_ FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.46	0.38	0.36	0.53	0.36	0.34	0.92	0.36	0.34	0.59	Install Redundant Relay		
	P5-SA-A2:9:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.46	0.38	0.36	0.54	0.37	0.34	0.92	0.36	0.34	0.59	Install Redundant Relay		
FULTON 60 KV	P5-SA-A2:8:_ FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.47	0.38	0.36	0.53	0.36	0.33	0.93	0.35	0.33	0.60	Install Redundant Relay		
	P5-SA-A2:9:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.47	0.38	0.33	0.53	0.36	0.33	0.93	0.35	0.33	0.60	Install Redundant Relay		
FTCH MTN 60 KV	P5-SA-A2:8:_ FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.46	0.39	0.33	0.53	0.37	0.35	0.92	0.37	0.35	0.59	Install Redundant Relay		
	P5-SA-A2:9:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.47	0.38	0.35	0.54	0.37	0.35	0.92	0.37	0.35	0.59	Install Redundant Relay		
COTATI 60 KV	P5-SA-A2:8:_ FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.63	0.55	0.33	0.66	0.53	0.32	0.96	0.36	0.32	0.75	Install Redundant Relay		
	P5-SA-A2:9:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.63	0.54	0.35	0.66	0.52	0.32	0.96	0.35	0.32	0.74	Install Redundant Relay		
PETLMA A 60 KV	P5-SA-A2:8:_ FULTON BUS 115 KV 1 & 2 SECTION D(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.77	0.72	0.75	0.78	0.70	1.01	0.97	1.01	1.01	0.85	Install Redundant Relay		
	P5-SA-A2:9:_ FULTON BUS 115 KV 1 & 2 SECTION E/F(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.77	0.71	0.74	0.78	0.69	1.01	0.97	1.01	1.01	0.84	Install Redundant Relay		

[illegible]



Worst Contingency	Category	Category Description	Amount of Load Drop (MW)													Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area Hi-EV sensitivity	

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



Substation	Load Served (MW)														Potential Mitigation Solutions
	2026 Summer Peak	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area Hi-EV sensitivity	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
CASCADE-BENTON-DESCHUTES 60KV	COLUSAPCTG1 18.00KV & COLUSAPCTG2 18.00KV & COLUSAPSTG1 18.00KV Gen Units and CASCADE-COTTONWOOD 115KV [1240]	P3	G-1-N-1	< 100	< 100	< 100	99.6	< 100	< 100	< 100	< 100	Generation Redispatch
	P5-5(DC)A3-3_ Cottonwood 230KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	113	NConv	28	114	NConv	28	38	Install Redundant Battery
	P5-5(A3-10_ COTTONWOOD 230KV BUS SECTION E/G/WAPA/F (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	113	NConv	28	113	NConv	28	55	Install Redundant Relay
	P5-5(DC)A3-3_ Cottonwood 230KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	41	161	NConv	41	26	Install Redundant Battery
	P5-5(A3-10_ COTTONWOOD 230KV BUS SECTION E/G/WAPA/F (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	41	160	NConv	41	19	Install Redundant Relay
CASCADE-COTTONWOOD 115KV	COTWD_ E2 230/60KV TB 2 and COTWD_ E 230/60KV TB 3	P6	N-1-1	138	< 100	250	< 100	115	< 100	< 100	< 100	Existing operation solution to redispatch generation
	COTWD_ E 230/60KV TB 3 and COTWD_ E2 230/60KV TB 2	P6	N-1-1	< 100	< 100	174	< 100	< 100	< 100	< 100	< 100	Continue to monitor
CENTERVILLE-TABLE MTN-OROVILLE 60KV	COTWD_ E2 230/60KV TB 2 and COTWD_ E 230/60KV TB 3	P6	N-1-1	126	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Existing operation solution to redispatch generation
	HRIDGEGT 34.50KV Gen Unit 2 and CENTERVILLE-TABLE MTN 60KV [6320] MOAS OPENED ON CENTRVILLE_AMERESCOOTAP	P3	G-1-N-1	< 100	< 100	< 100	99.53	< 100	99.51	99.53	< 100	Generation Redispatch
COLGATE-PALERMO 60KV	PALERMO-NICOLAUS 115KV [3210] MOAS OPENED ON PALERMO_ E.MRY 12 and PALERMO-COLGATE 230KV [5360]	P6	N-1-1	< 100	< 100	102	< 100	< 100	< 100	< 100	< 100	Continue to monitor
COTTONWOOD-BENTON #1 60KV	P5-5(DC)A3-3_ Cottonwood 230KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	112	NConv	21	55	NConv	21	118	Install Redundant Battery
	P5-5(A3-10_ COTTONWOOD 230KV BUS SECTION E/G/WAPA/F (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	112	NConv	21	54	NConv	21	127	Install Redundant Relay
	COTWD_ E2 230/60KV TB 2 and COTWD_ E 230/60KV TB 3	P6	N-1-1	< 100	< 100	153	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	COTWD_ E2 230/60KV TB 2 and COTWD_ E 230/60KV TB 3	P6	N-1-1	< 100	< 100	102	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	P2-4(A3-4_ ROUND MT 230KV - Section 1E & 1D	P2	Bus-tie breaker	47	74	101	48	101	21	15	61	Continue to monitor
COTWD_F2-PIT 1-BRNV_FST 230KV	P5-5(DC)A3-1_ Round Mtn 500-230KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	78	NConv	NConv	58	NConv	Install Redundant Battery
	P5-5(A3-9_ ROUND MOUNTAIN 230KV BUS 1 & 2 SEC. E/F (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	74	74	101	78	101	62	58	61	Install Redundant Relay
	P5-5(DC)A3-1_ Round Mtn 500-230KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	26	NConv	NConv	28	47	Install Redundant Battery
CRAG VIEW-CASCADE 115KV	P5-5(DC)A3-3_ Cottonwood 230KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	78	0	NConv	20	47	Install Redundant Battery
	P5-5(A3-10_ COTTONWOOD 230KV BUS SECTION E/G/WAPA/F (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	78	0	NConv	19	41	Install Redundant Relay
HUMBOLDT-TRINITY 115KV	COLUSAPCTG1 18.00KV & COLUSAPCTG2 18.00KV & COLUSAPSTG1 18.00KV Gen Units and BRIDGEVILLE-COTTONWOOD 115KV [1110]	P3	G-1-N-1	< 100	< 100	< 100	< 100	< 100	99.66	< 100	< 100	Sensitivity Study
KESWICK-CASCADE 60KV	P2-4(A3-8_ COTWDPGE 115KV - Section 2D & 1D	P2	Bus-tie breaker	NConv	NConv	NConv	90	NConv	NConv	88	NConv	Cottonwood 115 KV Bus Sectionalizing Breaker Project
	P5-5(A3-11_ COTTONWOOD 115KV BUS 1/BUS 2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	83	29	91	32	NConv	90	78	Install Redundant Relay
	HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP and BRIDGEVILLE-COTTONWOOD 115KV [1110]	P6	N-1-1	Diverge	< 100	< 100	< 100	< 100	Diverge	< 100	< 100	Redispatch Humboldt Gen
KESWICK-TRINITY 60KV	P2-4(A3-8_ COTWDPGE 115KV - Section 2D & 1D	P2	Bus-tie breaker	NConv	NConv	NConv	108	NConv	NConv	107	NConv	Cottonwood 115 KV Bus Sectionalizing Breaker Project
	P5-5(DC)A3-24_ COTTONWOOD 115KV BATT (FAILURE OF STATION DC BATTERY SUPPLY)	P5	Non-Redundant Battery/Relay	NConv	110	NConv	78	NConv	NConv	NConv	34	Install Redundant Battery
	P5-5(A3-11_ COTTONWOOD 115KV BUS 1/BUS 2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	114	42	110	39	NConv	109	92	Install Redundant Relay
PARADISE-TABLE MTN 115KV	HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP and BRIDGEVILLE-COTTONWOOD 115KV [1110]	P6	N-1-1	Diverge	< 100	< 100	< 100	< 100	Diverge	< 100	< 100	Redispatch Humboldt Gen
	P2-4(A3-44_ TBLE MTN 115KV Section 1D	P2	Bus section fault	76	89	102	9	10	22	35	53	Continue to monitor
	P2-3(A3-45_ TBLE MTN - 1D 115KV & TABLE MTN-BUTTE #1 line	P2	Non-bus-tie breaker	89	89	102	34	9	19	24	53	Continue to monitor
PEACHTON-PEASE 60KV	TABLE MTN-BUTTE #1 115KV [3910] and TABLE MTN-BUTTE #2 115KV [3920]	P6	N-1-1	< 100	< 100	101	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	P2-3(A3-26_ TABLE MTN D - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	1	2	113	14	35	22	14	18	Continue to monitor
	P2-4(A3-23_ TABLE MTN D Section 1D & TABLE MTN E Section 1E 230KV	P2	Bus-tie breaker	2	2	NConv	15	35	23	15	18	Continue to monitor
SYCAMORE CREEK-NOTRE DAME-TABLE MTN 115KV	P2-4(A3-5_ TABLE MTN D 230KV - Section 1D & 2D	P2	Bus-tie breaker	3	2	113	18	35	9	5	18	Continue to monitor
	P2-1(A3-70_ BUTTE-SYCAMORE CREEK 115KV [1190] (CHICOTP2-BUTTE)	P2	Open line section w/o fault	75	89	103	24	16	17	59	47	Continue to monitor
	P2-2(A3-40_ BUTTE 115KV Section MD	P2	Bus section fault	75	89	104	5	15	27	34	47	Continue to monitor
	P2-2(A3-44_ TBLE MTN 115KV Section 1D	P2	Bus section fault	75	88	101	23	9	11	24	53	Continue to monitor
	P2-3(A3-41_ BUTTE - MD 115KV & TABLE MTN-BUTTE #1 line	P2	Non-bus-tie breaker	90	114	132	33	16	25	30	65	Bus upgrade or capacity increase
	P2-3(A3-45_ TBLE MTN - 1D 115KV & TABLE MTN-BUTTE #1 line	P2	Non-bus-tie breaker	88	88	101	35	9	14	18	53	Continue to monitor
	P2-3(A3-47_ BUTTE - MD 115KV & TABLE MTN-BUTTE #1 line	P2	Non-bus-tie breaker	110	NConv	NConv	49	95	72	49	66	Review Table Mountain RAS scope and modelling
	P2-4(A3-10_ BUTTE 115KV - Section MD & ME	P2	Bus-tie breaker	76	92	108	24	15	35	24	48	Continue to monitor
	P2-2(A3-27_ TABLE MTN D 230KV Section 1D	P2	Bus section fault	99	118	137	18	57	24	33	71	Review Table Mountain RAS scope and modelling
	P2-3(A3-26_ TABLE MTN D - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	100	118	137	23	57	3	19	71	Review Table Mountain RAS scope and modelling
TABLE MTN E 230/115KV TB 3	P2-3(A3-27_ TABLE MTN D - 1D 230KV & line	P2	Non-bus-tie breaker	129	NConv	NConv	129	132	129	129	77	Review Table Mountain RAS scope and modelling
TABLE MTN E-HYATT3-THERMLTO 230KV	P2-1(A3-29_ TABLE MTN E-THM JCT 230KV [1] No Fault	P2	Open line section w/o fault	96	96	97	97	113	119	127	96	Operation Solution
TABLE MTN-BUTTE #1 115KV	SYCAMORE CREEK-NOTRE DAME-TABLE MTN 115KV [4314] and TABLE MTN-BUTTE #2 115KV [3920]	P6	N-1-1	< 100	< 100	119	< 100	< 100	< 100	< 100	< 100	Continue to monitor
TABLE MTN-BUTTE #2 115KV	SYCAMORE CREEK-NOTRE DAME-TABLE MTN 115KV [4314] and TABLE MTN-BUTTE #1 115KV [3910]	P6	N-1-1	111	< 100	136	< 100	< 100	< 100	< 100	< 100	Review Table Mountain RAS scope and modelling
TABLE MTN-PEACHTON 60KV	P2-2(A3-27_ TABLE MTN D 230KV Section 1D	P2	Bus section fault	75	15	132	49	40	25	31	30	Continue to monitor
	P2-3(A3-26_ TABLE MTN D - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	17	15	132	24	40	33	24	30	Continue to monitor
	P2-4(A3-23_ TABLE MTN D Section 1D & TABLE MTN E Section 1E 230KV	P2	Bus-tie breaker	18	16	NConv	25	40	33	25	31	Continue to monitor
	P2-4(A3-5_ TABLE MTN D 230KV - Section 1D & 2D	P2	Bus-tie breaker	27	9	124	25	34	12	7	24	Continue to monitor
	TABLE MTN-PALERMO 230KV [5690] MOAS OPENED ON TABLE MTN D_PALERMO and TABLE MTN-RIO OSO 230KV [5700]	P6	N-1-1	< 100	< 100	100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
TRINITY-MAPLE CREEK 60KV	HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP and BRIDGEVILLE-COTTONWOOD 115KV [1110]	P6	N-1-1	Diverge	< 100	< 100	< 100	< 100	Diverge	< 100	< 100	Redispatch Humboldt Gen
WESTWOOD-WESTWOODLUD #1 60KV	CARIBOU 230/230KV TB 11 and COLLINSFINE2 11.80KV Gen Unit 1	P6	N-1-1	< 100	102	< 100	< 100	< 100	< 100	< 100	< 100	Review Caribou RAS scope expansion

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
CARIBOU 115 KV	P1-2:A3:24:_CARIBOU-TABLE MTN 230KV [4440]	P1	N-1	NConv	0.41	0.41	0.41	0.41	0.41	0.41	0.41	Review Caribou RAS scope expansion and modelling
	P2-1:A3:21:_CARIBOU-TABLE MTN 230KV [4440] (CARIBOU-BELDENTP)	P2	Open line section w/o fault	NConv	0.51	0.52	0.52	0.52	0.51	0.51	0.53	Review Caribou RAS scope expansion and modelling
	P2-1:A3:23:_CARIBOU-TABLE MTN 230KV [4440] (BELDENTP-TABLE MTN D)	P2	Open line section w/o fault	NConv	0.52	0.60	0.53	0.53	0.52	0.52	0.52	Review Caribou RAS scope expansion and modelling
	P2-2:A3:20:_CARIBOU 230KV Section 1D	P2	Bus section fault	NConv	0.51	0.51	0.51	0.51	0.51	0.51	0.51	Review Caribou RAS scope expansion and modelling
	P2-2:A3:27:_TABLE MTN D 230KV Section 1D	P2	Bus section fault	NConv	0.52	0.52	0.52	0.52	0.52	0.52	0.52	Review Caribou RAS scope expansion and modelling
	P2-3:A3:21:_CARIBOU - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	NConv	0.51	0.51	0.51	0.52	0.51	0.51	0.53	Review Caribou RAS scope expansion and modelling
	P2-3:A3:26:_TABLE MTN D - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	NConv	0.51	0.51	0.51	0.51	0.51	0.51	0.53	Review Caribou RAS scope expansion and modelling
	P2-4:A3:23:_TABLE MTN D Section 1D & TABLE MTN E Section 1E 230KV	P2	Bus-tie breaker	NConv	0.52	NConv	NConv	0.55	0.51	0.51	0.53	Review Caribou RAS scope expansion and modelling
	P2-4:A3:5:_TABLE MTN D 230kv - Section 1D & 2D	P2	Bus-tie breaker	NConv	0.52	0.41	NConv	0.54	0.52	0.52	0.52	Review Caribou RAS scope expansion and modelling
	P5-5(DC):A3:2:_Table Mtn 500-230-115-60KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	NConv	0.39	NConv	NConv	NConv	0.51	0.54	Install Redundant Battery
CARIBOU 230 KV	P5-5:A3:7:_TABLE MTN 230KV BUS SECTION D/E (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.51	0.40	NConv	0.54	NConv	NConv	0.52	Install Redundant Relay
	P1-2:A3:24:_CARIBOU-TABLE MTN 230KV [4440]	P1	N-1	NConv	0.40	0.40	0.40	0.54	0.53	0.53	0.53	Review Caribou RAS scope expansion and modelling
	P2-1:A3:21:_CARIBOU-TABLE MTN 230KV [4440] (CARIBOU-BELDENTP)	P2	Open line section w/o fault	NConv	0.51	0.51	0.51	0.51	0.51	0.51	0.53	Review Caribou RAS scope expansion and modelling
	P2-1:A3:23:_CARIBOU-TABLE MTN 230KV [4440] (BELDENTP-TABLE MTN D)	P2	Open line section w/o fault	NConv	0.52	0.60	0.51	0.51	0.52	0.52	0.54	Review Caribou RAS scope expansion and modelling
	P2-2:A3:27:_TABLE MTN D 230KV Section 1D	P2	Bus section fault	NConv	0.52	0.52	0.52	0.52	0.52	0.52	0.52	Review Caribou RAS scope expansion and modelling
	P2-3:A3:26:_TABLE MTN D - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	NConv	0.51	0.51	0.51	0.52	0.51	0.51	0.53	Review Caribou RAS scope expansion and modelling
	P2-4:A3:23:_TABLE MTN D Section 1D & TABLE MTN E Section 1E 230KV	P2	Bus-tie breaker	NConv	0.52	NConv	NConv	0.55	0.52	0.52	0.54	Review Caribou RAS scope expansion and modelling
	P2-4:A3:5:_TABLE MTN D 230kv - Section 1D & 2D	P2	Bus-tie breaker	NConv	0.52	0.41	NConv	0.55	0.51	0.51	0.54	Review Caribou RAS scope expansion and modelling
	P5-5(DC):A3:2:_Table Mtn 500-230-115-60KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	NConv	0.39	NConv	NConv	0.52	0.52	0.54	Install Redundant Battery
	P5-5:A3:7:_TABLE MTN 230KV BUS SECTION D/E (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.51	0.40	NConv	0.54	NConv	NConv	0.52	Install Redundant Relay
CARIBOU 60 KV	P1-2:A3:24:_CARIBOU-TABLE MTN 230KV [4440]	P1	N-1	NConv	0.52	0.39	0.27	0.53	0.40	0.39	0.46	Review Caribou RAS scope expansion and modelling
	P1-3:A3:4:_CARIBOU 230/230KV TB 11	P1	N-1	NConv	0.51	0.52	0.51	1.03	0.28	0.28	0.28	Review Caribou RAS scope expansion and modelling
	P2-1:A3:21:_CARIBOU-TABLE MTN 230KV [4440] (CARIBOU-BELDENTP)	P2	Open line section w/o fault	NConv	0.52	0.52	0.52	0.52	0.52	0.52	0.54	Review Caribou RAS scope expansion and modelling
	P2-1:A3:23:_CARIBOU-TABLE MTN 230KV [4440] (BELDENTP-TABLE MTN D)	P2	Open line section w/o fault	NConv	0.53	0.51	0.51	0.53	0.53	0.53	0.53	Review Caribou RAS scope expansion and modelling
	P2-2:A3:20:_CARIBOU 230KV Section 1D	P2	Bus section fault	NConv	0.52	0.52	0.52	0.52	0.52	0.52	0.51	Review Caribou RAS scope expansion and modelling
	P2-2:A3:27:_TABLE MTN D 230KV Section 1D	P2	Bus section fault	NConv	0.53	0.53	0.53	0.51	0.53	0.53	0.54	Review Caribou RAS scope expansion and modelling
	P2-3:A3:21:_CARIBOU - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	NConv	0.52	0.52	0.52	0.51	0.52	0.52	0.54	Review Caribou RAS scope expansion and modelling
	P2-3:A3:26:_TABLE MTN D - 1D 230KV & CARIBOU-TABLE MTN line	P2	Non-bus-tie breaker	NConv	0.52	0.52	0.52	0.52	0.52	0.52	0.54	Review Caribou RAS scope expansion and modelling
	P2-4:A3:23:_TABLE MTN D Section 1D & TABLE MTN E Section 1E 230KV	P2	Bus-tie breaker	NConv	0.53	NConv	NConv	0.54	0.51	0.51	0.54	Review Caribou RAS scope expansion and modelling
	P2-4:A3:5:_TABLE MTN D 230kv - Section 1D & 2D	P2	Bus-tie breaker	NConv	0.53	0.40	NConv	0.53	0.51	0.51	0.51	Review Caribou RAS scope expansion and modelling
CASCADE 115 KV	P5-5(DC):A3:2:_Table Mtn 500-230-115-60KV Batt (Failure of Station DC Battery Supply)	P5	Non-Redundant Battery/Relay	NConv	NConv	0.38	NConv	NConv	NConv	0.51	0.54	Install Redundant Battery
	P5-5:A3:12:_CARIBOU PH #2 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.52	0.40	NConv	0.53	NConv	NConv	0.54	Install Redundant Relay
	P5-5:A3:2:_CARIBOU 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.52	0.40	NConv	0.53	NConv	NConv	0.54	Install Redundant Relay
	P5-5:A3:7:_TABLE MTN 230KV BUS SECTION D/E (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	0.52	0.39	NConv	0.53	NConv	NConv	0.54	Install Redundant Relay
	OLSENHYDRO 4.16KV Gen Unit 1 and CASCADE-COTTONWOOD 115KV [1240]	P3	G-1-N-1	> 0.9	> 0.9	0.87	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	CASCADE-COTTONWOOD 115KV [1240] and CSCDE T SVD=V	P6	N-1-1	> 0.9	> 0.9	0.85	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	COTWDW_E 230/60KV TB 2 and COTWDW_E 230/60KV TB 3	P6	N-1-1	> 0.9	> 0.9	0.88	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	COTWDW_E 230/60KV TB 2 and COTWDW_E 230/60KV TB 3	P6	N-1-1	> 0.9	> 0.9	0.60	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	COTWDW_E 230/60KV TB 2 and COTWDW_E 230/60KV TB 3	P6	N-1-1	> 0.9	> 0.9	0.62	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	P5-5:A3:10:_COTTONWOOD 230KV BUS SECTION E/G/WAPA/F (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	NConv	0.90	NConv	NConv	0.54	Install Redundant Relay
COLEMAN 60 KV	COTWDW_E 230/60KV TB 2 and COTWDW_E 230/60KV TB 3	P6	N-1-1	> 0.9	> 0.9	0.76	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	COTWDW_E 230/60KV TB 2 and COTWDW_E 230/60KV TB 3	P6	N-1-1	> 0.9	> 0.9	0.83	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
COTWDW_E 230 KV	TABLE MTN-PALERMO 230KV [5690] MOAS OPENED ON TABLE MTN D_PALERMO and PALERMO-COLGATE 230KV [5360]	P6	N-1-1	> 0.9	0.88	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
COTWDW 60 KV	SOUTH G 4.16KV Gen Unit 1 and COTTONWOOD-RED BLUFF 60KV [6660] MOAS OPENED ON RED B_IT_RED BLUFF	P3	G-1-N-1	> 0.9	> 0.9	0.89	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	COTWDW_E 230/60KV TB 2 and COTWDW_E 230/60KV TB 3	P6	N-1-1	0.87	> 0.9	0.55	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Install Reactive Device
SYCAMORE 115 KV	TABLE MTN-BUTTE #1 115KV [3910] and SYCAMORE CREEK-NOTRE DAME-TABLE MTN 115KV [4314]	P6	N-1-1	> 0.9	> 0.9	0.90	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
TRINITY 115 KV	HUMBOLODT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP and BRIDGEVILLE-COTTONWOOD 115KV [1110]	P6	N-1-1	> 0.9	0.90	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
	HUMBOLODT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP and BRIDGEVILLE-COTTONWOOD 115KV [1110]	P6	N-1-1	> 0.9	0.90	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Generation Redispatch

[illegible]

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)												Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	

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

Substation	Load Served (MW)														Potential Mitigation Solutions
	2026 Summer Peak	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area Hi-EV sensitivity	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst #)	Category	Category Description	Loading # (Baseline Scenarios)										Loading # (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off Peak	2037 Spring Off Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 SP Renewal e & Min Gen Gen	2027 OP Sensitivity	2030 SP High CEC Forecast				
SALINAS - SPENCE 60KV	P1-2-A19-37, SALINAS1-FIRESTNE 60KV [0]	P1	N-1	117	120	NA	NA	85	60	60	NA	106	86	109	Project: Salinas Area Reinforcement			
	P5-SCA19-1, MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously			
	P5-SA-A20-6, MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	NConv	24	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant relay installation recommended previously			
ATASCADERO-CAYUCOS 70KV	P5-SA-A20-6, MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	NConv	24	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant relay installation recommended previously			
	P5-SC-A20-3, MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	24	NConv	NConv	130	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously			
	P5-SA-A20-6, MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	NConv	41	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant relay installation recommended previously			
ATASCADERO-SAN LUIS OBISPO 70KV	P5-SC-A20-3, MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	42	NConv	NConv	126	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously			
	P5-SA-A20-6, MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	NConv	87	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant relay installation recommended previously			
	P5-SC-A20-3, MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	86	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously			
CABRILLO SANTA YNEZ SW STA 115KV	MESA-SISQOCC 115KV (240)MESA, PGE-SNTA MRA 115KV [0]	P6	N-1-1	<100	<100	153	<100	<100	<100	<100	<100	<100	<100	<100	Continue to Monitor			
	MESA-SISQOCC 115KV (240)MESA, PGE-SNTA MRA 115KV [0]	P6	N-1-1	<100	<100	153	<100	<100	<100	<100	<100	<100	<100	<100	Continue to Monitor			
	P2-4-A20-4, MORROBAY 230KV - SECTION 1E & 2E	P2-4	Bus Tie-Breaker Fault	97	81	81	87	107	90	46	148	154	145	110	Review existing RAS			
CALLENDER SW STA MESA 115KV	P5-SA-A20-6, MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	NConv	87	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant relay installation recommended previously			
	P5-SC-A20-3, MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	86	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously			
	MORROBAY 230115KV TB MAMESA, PGE-SNTA MRA 115KV [0]	P6	N-1-1	93	96	123	<100	<100	<100	<100	<100	<100	<100	<100	Review existing RAS			
CHUALAR-FIRESTNE-SPENCE 115KV	P7-1-A20-15, MORRO BAY MESA AND MORRO BAY OMBLO 230 KV LINES	P7	DTCL	92	74	75	87	98	83	44	139	146	135	104	Review existing RAS			
	P7-1-A20-16, MORRO BAY MESA AND OMBLO MESA 230 KV LINES	P7	DTCL	93	69	108	89	98	79	40	138	146	131	99	Review existing RAS			
	P1-2-A19-38, SALINAS-SPENCE 60KV [7910]	P1	N-1	138	137	NA	NA	66	63	NA	131	98	132	98	Project: Salinas Area Reinforcement			
	P1-2-A19-38, SALINAS-SPENCE 60KV [7910]	P1	N-1	147	146	NA	NA	104	71	67	NA	140	104	140	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]CAMPEVERES, D1 21.60KV GEN UNIT RE	P3	G-1/N-1	147	146	<100	<100	104	<100	<100	<100	140	104	140	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]CAMPEVERES, 0.68KV GEN UNIT 1	P3	G-1/N-1	147	146	<100	<100	104	<100	<100	<100	140	104	140	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]MLPBC1CTG 18.00KV & MLPBC2CTG 18.00KV & MLPBC2CTG 18.00KV GEN UNITS	P3	G-1/N-1	146	<100	<100	<100	104	<100	<100	<100	140	104	140	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]MLPBC1CTG 18.00KV & MLPBC1CTG 18.00KV & MLPBC1CTG 18.00KV GEN UNITS	P3	G-1/N-1	146	<100	<100	<100	103	<100	<100	<100	140	104	140	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]MLPBC2CTG 18.00KV & MLPBC2CTG 18.00KV GEN UNITS	P3	G-1/N-1	<100	146	<100	<100	<100	<100	<100	<100	<100	<100	141	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]GRANTCROOK, 4.16KV GEN UNIT RE	P3	G-1/N-1	138	137	<100	<100	98	<100	<100	<100	131	98	132	Project: Salinas Area Reinforcement			
COALINGA #1 SAN MIGUEL 70KV	SALINAS-SPENCE 60KV [7910]CAMPEVERES, D1 21.60KV GEN UNIT RE	P3	G-1/N-1	137	<100	<100	<100	98	<100	<100	<100	131	98	131	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]CAMPEVERES, 0.68KV GEN UNIT 1	P3	G-1/N-1	137	<100	<100	<100	98	<100	<100	<100	131	98	131	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]CAMPEVERES, 0.68KV GEN UNIT 1	P3	G-1/N-1	138	137	<100	<100	98	<100	<100	<100	131	98	132	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]MLPBC1CTG 18.00KV & MLPBC1CTG 18.00KV & MLPBC1CTG 18.00KV GEN UNITS	P3	G-1/N-1	138	<100	<100	<100	97	<100	<100	<100	131	98	<100	Project: Salinas Area Reinforcement			
	SALINAS-SPENCE 60KV [7910]MLPBC2CTG 18.00KV & MLPBC2CTG 18.00KV GEN UNITS	P3	G-1/N-1	<100	137	<100	<100	<100	<100	<100	<100	<100	<100	132	Project: Salinas Area Reinforcement			
	TEMPLETON GATES 230KV (250)MORRO BAY TEMPLETON 230KV [9503]	P6	N-1-1	107	<100	<100	<100	74	<100	<100	<100	63	77	<100	Project: Estrella Substation Project			
	P7-1-A20-12, MORRO BAY-CALIFATS SS AND TEMPLETON GATES 230 KV LINES	P7	DTCL	102	23	29	41	51	27	3	14	55	59	5	Project: Estrella Substation Project			
	COBURN-OL FIELDS #1 60KV [8410]SALINASRIVER, 13.80KV GEN UNIT 1	P3	G-1/N-1	<100	<100	<100	<100	102	<100	<100	<100	<100	<100	<100	Project: Morgan Hill-Watsonville Area Reinforcement			
	COBURN-OL FIELDS #1 60KV [8410]SALINASRIVER, 13.80KV GEN UNIT 1	P3	G-1/N-1	<100	<100	<100	<100	102	<100	<100	<100	<100	<100	<100	Project: Morgan Hill-Watsonville Area Reinforcement			
	COBURN 230KV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	96	<100	<100	<100	Continue to Monitor			
CRAZY HORSE CANYON-SALINAS-SOLEDAAD #1 115KV	MOSS LANDING-SALINAS #2 115KV [289]SALINAS-MOSSLNDW-OLANR 115KV [0]	P6	N-1-1	158	<100	<100	<100	104	<100	<100	<100	109	102	<100	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	P7-1-A19-4, MOSS LANDING - SALINAS #1 AND #2 115 KV LINES	P7	DTCL	171	48	61	14	100	91	34	52	111	111	34	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	P7-1-A19-4, MOSS LANDING - SALINAS #1 AND #2 115 KV LINES	P7	DTCL	158	43	54	16	104	86	32	48	109	105	32	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	P7-1-A19-6, MOSS LANDING - CRAZY HORSE #1 AND #2 115 KV LINES	P7	DTCL	113	25	33	11	69	54	16	25	73	80	16	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	MOSS LANDING-SALINAS #2 115KV [289]SALINAS-MOSSLNDW-OLANR 115KV [0]	P6	N-1-1	158	<100	<100	<100	104	<100	<100	<100	109	102	<100	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	P7-1-A19-4, MOSS LANDING - SALINAS #1 AND #2 115 KV LINES	P7	DTCL	171	48	61	14	100	91	34	52	111	111	34	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	P7-1-A19-4, MOSS LANDING - SALINAS #1 AND #2 115 KV LINES	P7	DTCL	158	43	54	16	104	86	32	48	109	105	32	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	P7-1-A19-6, MOSS LANDING - CRAZY HORSE #1 AND #2 115 KV LINES	P7	DTCL	113	25	33	11	69	54	16	25	73	80	16	Project: Crazy Horse Canyon - Salinas - Soldered #1 and #2 115 KV Line Reconducting			
	P1-2-A19-40, DEL MONTE-FORT ORD #2 60KV [8422]	P1	N-1	90	96	121	40	70	72	75	111	69	70	70	Continue to Monitor			
	DEL MONTE-FORT ORD #2 60KV [8422]GREENVALLEY-25 25.00KV GEN UNIT VB	P3	G-1/N-1	<100	<100	121	<100	<100	<100	<100	<100	<100	<100	<100	Continue to Monitor			
DIVIDE-CABRILLO #1 115KV	DEL MONTE-FORT ORD #2 60KV [8422]MLPBC2CTG 18.00KV & MLPBC2CTG 18.00KV & MLPBC2CTG 18.00KV GEN UNITS	P3	G-1/N-1	<100	<100	121	<100	<100	<100	<100	<100	116	<100	<100	Continue to Monitor			
	P1-2-A19-38, DEL MONTE-FORT ORD #1 60KV [8400]	P1	N-1	90	96	121	40	70	72	75	111	69	70	70	Continue to Monitor			
	DEL MONTE-FORT ORD #1 60KV [8400]GREENVALLEY-25 25.00KV GEN UNIT VB	P3	G-1/N-1	<100	<100	121	<100	<100	<100	<100	<100	116	<100	<100	Continue to Monitor			
	DEL MONTE-FORT ORD #1 60KV [8400]GREENVALLEY-25 25.00KV GEN UNIT VB	P3	G-1/N-1	<100	<100	121	<100	<100	<100	<100	<100	116	<100	<100	Continue to Monitor			
	MESA-SISQOCC 115KV (240)MESA, PGE-SNTA MRA 115KV [0]	P6	N-1-1	<100	<100	159	<100	<100	<100	<100	<100	<100	<100	<100	Continue to Monitor			
	MESA-SISQOCC 115KV (240)MESA, PGE-SNTA MRA 115KV [0]	P6	N-1-1	<100	<100	159	<100	<100	<100	<100	<100	<100	<100	<100	Continue to Monitor			
	P1-2-A19-10, GREEN VALLEY PAUL SWEET 115KV [1730] MOSS OPENED ON GREENVALLEY ROB ROY	P1	N-1	75	92	111	16	61	68	70	116	35	68	45	Continue to Monitor			
	P2-1-A19-14, GREEN VALLEY PAUL SWEET 115KV [1730] MOSS OPENED ON PAUL SWT ROB ROY	P1	N-1	67	83	98	16	55	60	62	101	33	62	45	Continue to Monitor			
	P2-1-A19-15, GREEN VALLEY PAUL SWEET 115KV [1730] MOSS OPENED ON PAUL SWT ROB ROY	P1	N-1	67	83	98	16	55	60	62	101	33	62	45	Continue to Monitor			
	P2-1-A19-16, GREEN VALLEY PAUL SWEET 115KV [1730] MOSS OPENED ON PAUL SWT ROB ROY	P1	N-1	67	83	98	16	55	60	62	101	33	62	45	Continue to Monitor			
GREEN VALLEY-CAMP EVERS 115KV	P2-3-A19-8, GREENVALLEY 115KV - MIDDLE BREAKER BAY 3	P2-3	Non-Bus Tie-Breaker Fault	74	91	111	16	60	67	70	116	35	67	45	Continue to Monitor			
	GREEN VALLEY PAUL SWEET 115KV [1730] MOSS OPENED ON GREENVALLEY ROB ROY/CAMP EVERS, D1 21.60KV GEN UNIT RE	P3	G-1/N-1	<100	98	119	<100	<100	<100	<100	122	<100	<100	<100	Continue to Monitor			
	P5-SA-A19-6, ROB ROY 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	67	83	97	16	55	60	62	101	34	62	44	Continue to Monitor			
	P1-2-A19-9, GREEN VALLEY-CAMP EVERS 115KV [1730]	P1	N-1	67	84	98	15	56	61	62	102	33	63	44	Continue to Monitor			
	P2-3-A19-7, GREENVALLEY 115KV - MIDDLE BREAKER BAY 5	P2-3	Non-Bus Tie-Breaker Fault	79	95	113	17	65	71	71	117	38	72	48	Continue to Monitor			
	P2-3-A19-7, GREENVALLEY 115KV - MIDDLE BREAKER BAY 5	P2-3	Non-Bus Tie-Breaker Fault	72	87	101	16	59	64	64	104	36	66	46	Continue to Monitor			
	GREEN VALLEY-CAMP EVERS 115KV [1730]CAMP EVERS, D1 21.60KV GEN UNIT RE	P3	G-1/N-1	<100	99	116	<100	<100	<100	<100	120	<100	<100	<100	Continue to Monitor			
	GREEN VALLEY-CAMP EVERS 115KV [1730]CAMP EVERS, D1 21.60KV GEN UNIT RE	P3	G-1/N-1	<100	95	104	<100	<100	<100	<100	107	<100	<100	<100	Continue to Monitor			
	P1-2-A19-9, GREEN VALLEY-CAMP EVERS 115KV [1730]	P1	N-1	74	92	108	16	62	68	69	113	36	69	46	Continue to Monitor			
	P5-SA-A19-1, SALINAS 115KV BAHN BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	148	47	169	138	140	213	168	169	168	Redundant relay installation recommended previously			
GREEN VALLEY-WATSONVILLE 60KV	P5-SA-A19-1, SALINAS 115KV BAHN BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	145	46	173	136	138	120	169	173	170	Redundant relay installation recommended previously			
	P5-SA-A19-1, SALINAS 115KV BAHN BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	145	46	173	136	138	120	169	173	170	Redundant relay installation recommended previously			
	P5-SA-A19-1, SALINAS 115KV BAHN BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	NConv	NConv	148	47	169	138	140	213	168	169	168	Redundant relay installation recommended previously			
	P5-SC-A19-1, MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously			
	P5-SC-A19-1, MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously			

Overloaded Facility	Contingency (All and Worst Res)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off Peak	2037 Spring Off Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 SP Heavy Renewables & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
MOSS LANDING-GREEN VALLEY #1 115KV	P2-3-A19-9, GREENVALLEY 115KV - MIDDLE BREAKER BAY 4	P2-3	Non-Bus-Tie-Breaker Fault	64	86	96	40	47	66	88	124	37	51	64	Continue to Monitor		
	MOSS LANDING-GREEN VALLEY #2 115KV (280)MCLAISTER DT 21.00KV GEN UNIT 1	P3	G-1/N-1	<100	89	89	<100	<100	<100	<100	108	<100	<100	<100	Continue to Monitor		
	MOSS LANDING-GREEN VALLEY #2 115KV (280)MCCOUBURN 1-25 25.00KV GEN UNIT VM	P3	G-1/N-1	<100	<100	89	<100	<100	<100	<100	108	<100	<100	<100	Continue to Monitor		
	MOSS LANDING-GREEN VALLEY #2 115KV (280)MCLAISTER 14-5000V TB 1	P6	N-1-1	<100	89	89	<100	<100	<100	<100	108	<100	<100	<100	Continue to Monitor		
	MOSS LANDING-GREEN VALLEY #2 115KV (280)GREENVALLEY-MRON HL #1 115KV (2)	P6	N-1-1	<100	<100	99	<100	<100	<100	<100	122	<100	<100	<100	Continue to Monitor		
MOSS LANDING-GREEN VALLEY #2 115KV (280)	P1-2-A19-11, MOSS LANDING-GREEN VALLEY #1 115KV (280)	P1	N-1	81	102	112	46	60	75	95	133	49	65	75	Generation redispach in mid-term, continue to monitor for long term		
	P2-3-A19-21, MOSS LANDING 115KV - MIDDLE BREAKER BAY 5	P2-3	Non-Bus-Tie-Breaker Fault	82	102	113	46	61	75	95	133	49	65	75	Generation redispach in mid-term, continue to monitor for long term		
	P2-3-A19-7, GREENVALLEY 115KV - MIDDLE BREAKER BAY 5	P2-3	Non-Bus-Tie-Breaker Fault	82	102	113	46	60	75	95	134	49	65	75	Generation redispach in mid-term, continue to monitor for long term		
	MOSS LANDING-GREEN VALLEY #1 115KV (280)MCHOLLISTER DT 21.00KV GEN UNIT 1	P3	G-1/N-1	<100	99	100	<100	<100	<100	<100	111	<100	<100	<100	Continue to Monitor		
	MOSS LANDING-GREEN VALLEY #1 115KV (280)MCCOUBURN 1-25 25.00KV GEN UNIT VM	P3	G-1/N-1	<100	<100	100	<100	<100	<100	<100	111	<100	<100	<100	Continue to Monitor		
MOSSLANDNG 230/115KV TB 4	MOSS LANDING-GREEN VALLEY #1 115KV (280)MCHOLLISTER 14-5000V TB 1	P6	N-1-1	<100	99	99	<100	<100	<100	<100	97	<100	<100	<100	Continue to Monitor		
	MOSS LANDING-GREEN VALLEY #1 115KV (280)MCHOLLISTER 14-5000V TB 1	P6	N-1-1	<100	100	100	<100	<100	<100	<100	110	<100	<100	<100	Continue to Monitor		
	MOSS LANDING-GREEN VALLEY #1 115KV (280)GREENVALLEY-MRON HL #1 115KV (2)	P6	N-1-1	<100	99	107	<100	<100	<100	<100	129	<100	<100	<100	Continue to Monitor		
	MOSSLANDNG 230/115KV TB 4	P6	N-1-1	91	<100	106	<100	<100	<100	<100	102	<100	<100	<100	Continue to Monitor		
	MOSSLANDNG 230/115KV TB 4	P6	N-1-1	91	<100	106	<100	<100	<100	<100	102	<100	<100	<100	Continue to Monitor		
OCEANO-CALLENDER SW STA 115KV	P2-4-A20-4, MORROBAY 230KV - SECTION 1E & 2E	P2-4	Bus-Tie-Breaker Fault	96	81	81	82	109	92	45	149	136	147	112	Review existing RAS		
	P5-SA-A20-6, MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Relay	NConv	NConv	NConv	31	82	NConv	NConv	NConv	NConv	NConv	NConv	Redundant relay installation recommended previously		
	P5-SA-A20-3, MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	82	NConv	NConv	5	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously		
	MORROBAY 230/115KV TB 8(MESA, PGE-SANTA MARIA 115KV (2))	P6	N-1-1	95	96	125	<100	<100	<100	<100	112	<100	<100	<100	Review existing RAS		
	P7-1-A20-15, MORRO BAY MESA AND MORRO BAY DABLO 230 KV LINES	P7	DTCL	91	73	75	82	101	84	43	140	148	137	107	Review existing RAS		
SALINAS - FRESTONE #1 60KV	P7-1-A20-16, MORRO BAY MESA AND DABLO MESA 230 KV LINES	P7	DTCL	82	68	68	92	101	81	39	140	143	133	102	Review existing RAS		
	P1-2-A19-38, SALINAS-SPENCE 60KV (79)0	P1	N-1	103	103	NA	NA	76	50	49	NA	93	76	94	Project: Salinas Area Reinforcement		
	SALINAS-SPENCE 60KV (79)0(CAMPPEVER, DT 21.00KV GEN UNIT RE)	P3	G-1/N-1	103	104	<100	<100	<100	<100	<100	93	<100	94	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	117	120	<100	<100	<100	<100	<100	106	<100	106	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(CAMPPEVER, DT 21.00KV GEN UNIT RE)	P3	G-1/N-1	117	120	<100	<100	<100	<100	<100	106	<100	106	<100	Project: Salinas Area Reinforcement		
SALINAS - SPENCE 60KV	SALINAS-FRESTONE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	117	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	<100	120	<100	<100	<100	<100	<100	<100	<100	<100	109	Project: Salinas Area Reinforcement		
	P1-2-A19-38, SALINAS-SPENCE 60KV (79)0	P1	N-1	152	150	NA	NA	109	73	70	NA	144	109	145	Project: Salinas Area Reinforcement		
	SALINAS-SPENCE 60KV (79)0(CAMPPEVER, DT 21.00KV GEN UNIT RE)	P3	G-1/N-1	152	151	<100	<100	<100	<100	<100	144	<100	144	<100	Project: Salinas Area Reinforcement		
	SALINAS-SPENCE 60KV (79)0(MPBC1CT2 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	151	<100	<100	<100	<100	<100	<100	145	<100	<100	<100	Project: Salinas Area Reinforcement		
SALINAS-FRESTONE #1 115KV	SALINAS-SPENCE 60KV (79)0(MPBC1CT1 18.00KV & MLPB1CT2 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	151	<100	<100	<100	<100	<100	<100	144	<100	<100	<100	Project: Salinas Area Reinforcement		
	SALINAS-SPENCE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	<100	151	<100	<100	<100	<100	<100	<100	<100	<100	145	Project: Salinas Area Reinforcement		
	P1-2-A19-37, SALINAS-FRESTONE 60KV (79)0	P1	N-1	155	154	NA	NA	110	74	70	NA	148	111	149	Project: Salinas Area Reinforcement		
	P1-2-A19-37, SALINAS-FRESTONE 60KV (79)0	P1	N-1	155	154	NA	NA	110	74	70	NA	148	111	149	Project: Salinas Area Reinforcement		
	P1-2-A19-45, SALINAS-SPENCE 60KV (79)0 (2)	P1	N-1	149	149	NA	NA	105	71	67	NA	142	106	143	Project: Salinas Area Reinforcement		
SALINAS-SPENCE 115KV	P1-2-A19-45, SALINAS-SPENCE 60KV (79)0 (2)	P1	N-1	149	149	NA	NA	105	71	67	NA	142	106	143	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(CAMPPEVER, 18.00KV GEN UNIT 1	P3	G-1/N-1	155	155	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(CAMPPEVER, DT 21.00KV GEN UNIT RE)	P3	G-1/N-1	155	155	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(CAMPPEVER, 18.00KV GEN UNIT 1	P3	G-1/N-1	155	155	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(CAMPPEVER, DT 21.00KV GEN UNIT RE)	P3	G-1/N-1	155	155	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
SAN LUIS OBISPO-OCEANO 115KV	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
SAN LUIS OBISPO-SANTA MARIA 115KV	SALINAS-FRESTONE 60KV (79)0(MPBC1CT1 18.00KV & MLPB1CT2 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT2 18.00KV & MLPB1STG1 18.00KV & MLPB1STG1 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
SAN LUIS OBISPO-SANTA MARIA 115KV	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
	SALINAS-FRESTONE 60KV (79)0(MPBC1CT3 18.00KV & MLPB2CT4 18.00KV & MLPB2STG2 18.00KV GEN UNITS	P3	G-1/N-1	155	<100	<100	<100	<100	<100	<100	148	<100	148	<100	Project: Salinas Area Reinforcement		
SANTA MARIA-SISQUOC 115KV	P5-SA-A20-7, MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	44	NConv	NConv	207	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously		
	P5-SA-A20-7, MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	44	NConv	NConv	207	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously		
	P7-1-A20-15, MORRO BAY MESA AND MORRO BAY DABLO 230 KV LINES	P7	DTCL	125	109	105	73	134	116	78	193	170	169	127	Review existing RAS		
	P7-1-A20-16, MORRO BAY MESA AND DABLO MESA 230 KV LINES	P7	DTCL	118	105	146	105	112	112	75	196	165	166	123	Review existing RAS		
	P1-2-A19-38, SALINAS-SPENCE 60KV (79)0	P1	N-1	103	103	NA	NA	76	50	49	NA	93	76	94	Project: Salinas Area Reinforcement		
SISQUOC-PALMER 115KV	P5-SA-A20-7, MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	5	NConv	NConv	16	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously		
	P5-SA-A20-7, MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	5	NConv	NConv	16	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously		
	P7-1-A20-15, MORRO BAY MESA AND MORRO BAY DABLO 230 KV LINES	P7	DTCL	31	22	33	6	44	75	10	52	65	118	40	Sensitivity only		
	P7-1-A20-16, MORRO BAY MESA AND DABLO MESA 230 KV LINES	P7	DTCL	125	109	105	73	134	116	78	193	170	169	127	Review existing RAS		
	P1-2-A19-38, SALINAS-SPENCE 60KV (79)0	P1	N-1	103	103	NA	NA	76	50	49	NA	93	76	94	Project: Salinas Area Reinforcement		
SISQUOC-SANTA YNEZ SW STA 115KV	P5-SA-A20-7, MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1	NConv	NConv	12	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously		
	P5-SA-A20-7, MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1	NConv	NConv	12	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously		
	P7-1-A20-15, MORRO BAY MESA AND MORRO BAY DABLO 230 KV LINES	P7	DTCL	125	109	105	73	134	116	78	193	170	169	127	Review existing RAS		
	P7-1-A20-16, MORRO BAY MESA AND DABLO MESA 230 KV LINES	P7	DTCL	118	105												

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off-Peak	2027 Spring Off-Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
ATASCDRO 70kV	P5-SC-A20-3; MORRO BAY SW 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1.00	NConv	NConv	0.76	NConv	NConv	NConv	Redundant battery supply installation recommended previously	
CAYUCOS 70kV	P5-SC-A20-3; MORRO BAY SW 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1.00	NConv	NConv	0.65	NConv	NConv	NConv	Redundant battery supply installation recommended previously	
CMP EVRS 115kV	P7-1A19-1; MOSS LANDING - GREEN VALLEY #1 AND #2 115 KV LINES	P7	DCTL	NConv	0.97	0.77	1.04	NConv	NConv	1.03	0.93	NConv	NConv	1.04	Review Morgan Hill-Watsonville Area Reinforcement project
	P1-2A19-11; MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2A19-12; MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	>0.9	>0.9	0.79	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
DEL MNTTE 115kV	P1-3A19-1; MOSSLAND 500/230KV TB 9 & P1-2A19-1; METCALF-MOSS LANDING #1 230KV [5100]	P6	N-1-1	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
DIVIDE 70kV	P1-3A20-4; MESA PGE 230/115KV TB 2 & P1-3A20-5; MESA PGE 230/115KV TB 3	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.87	>0.9	>0.9	>0.9	>0.9	Existing UVLS
DIVVIDE 115kV	P1-3A20-4; MESA PGE 230/115KV TB 2 & P1-3A20-5; MESA PGE 230/115KV TB 3	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.86	>0.9	>0.9	>0.9	>0.9	Existing UVLS
GREENVALLEY 115kV	P7-1A19-1; MOSS LANDING - GREEN VALLEY #1 AND #2 115 KV LINES	P7	DCTL	NConv	0.96	0.80	1.03	NConv	NConv	1.02	0.92	NConv	NConv	1.01	Review Morgan Hill-Watsonville Area Reinforcement project
	P1-2A19-11; MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2A19-12; MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	>0.9	>0.9	0.81	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
GREENVALLEY 60kV	P7-1A19-1; MOSS LANDING - GREEN VALLEY #1 AND #2 115 KV LINES	P7	DCTL	NConv	0.95	0.80	1.05	NConv	NConv	1.01	0.91	NConv	NConv	1.02	Review Morgan Hill-Watsonville Area Reinforcement project
LAURELES 60kV	P5-SA19-1; SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	0.36	0.99	0.28	0.28	0.28	0.39	0.27	0.28	0.25	Redundant relay installation recommended previously
	P1-3A19-1; MOSSLAND 500/230KV TB 9 & P1-2A19-1; METCALF-MOSS LANDING #1 230KV [5100]	P6	N-1-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
MESA PGE 230kV	P7-1A20-16; MORRO BAY-MESA AND DIABLO-MESA 230 KV LINES	P7	DCTL	0.89	1.03	0.89	1.03	1.01	1.03	1.03	0.86	1.02	1.03	1.02	Existing UVLS
MORRO BY 115kV	P1-2A20-16; DIABLO-MESA 230KV [4620] & P1-2A20-8; MORRO BAY-MESA 230KV [5290]	P6	N-1-1	0.89	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Existing UVLS
	P1-2A20-26; CALLENDER SW STA-MESA 115KV [1210] & P1-3A20-3; MORROBAY 230/115KV TB 6	P6	N-1-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
OCEANO 115kV	P5-SC-A20-3; MORRO BAY SW 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1.02	NConv	NConv	0.53	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously
	P1-2A20-26; CALLENDER SW STA-MESA 115KV [1210] & P1-3A20-3; MORROBAY 230/115KV TB 6	P6	N-1-1	>0.9	>0.9	0.84	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
PAUL SWT 115kV	P7-1A19-1; MOSS LANDING - GREEN VALLEY #1 AND #2 115 KV LINES	P7	DCTL	NConv	0.97	0.78	1.03	NConv	NConv	1.03	0.94	NConv	NConv	1.03	Review Morgan Hill-Watsonville Area Reinforcement project
	P1-2A19-11; MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2A19-12; MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	>0.9	>0.9	0.79	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
PERRY 70kV	P5-SC-A20-3; MORRO BAY SW 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1.00	NConv	NConv	0.64	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously
PSA RBL5 70kV	P1-2A20-3; TEMPLETON-GATES 230KV [5934] & P1-2A20-4; MORRO BAY-TEMPLETON 230KV [5933]	P6	N-1-1	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Estrella Substation Project
ROB ROY 115kV	P7-1A19-1; MOSS LANDING - GREEN VALLEY #1 AND #2 115 KV LINES	P7	DCTL	NConv	0.96	0.78	1.03	NConv	NConv	1.03	0.93	NConv	NConv	1.03	Review Morgan Hill-Watsonville Area Reinforcement project
SALINAS 115kV	P1-2A19-11; MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2A19-12; MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	>0.9	>0.9	0.80	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
SANBENITO 115kV	P1-3A19-1; MOSSLAND 500/230KV TB 9 & P1-2A19-1; METCALF-MOSS LANDING #1 230KV [5100]	P6	N-1-1	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
	P1-3A19-1; MOSSLAND 500/230KV TB 9 & P1-2A19-1; METCALF-MOSS LANDING #1 230KV [5100]	P6	N-1-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
SSQUOC 115kV	P1-2A20-22; MESA-SSQUOC 115KV [2460] & P1-2A20-23; MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	>0.9	>0.9	0.50	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
SN LS OB 115kV	P5-SC-A20-3; MORRO BAY SW 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1.01	NConv	NConv	0.55	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously
	P1-2A20-26; CALLENDER SW STA-MESA 115KV [1210] & P1-3A20-3; MORROBAY 230/115KV TB 6	P6	N-1-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
SN LS OB 70kV	P5-SC-A20-3; MORRO BAY SW 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1.01	NConv	NConv	0.61	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously
SNTA MRA 115kV	P7-1A20-7; MESA-SANTA MARIA AND SANTA MARIA-SSQUOC 115 KV LINES	P7	DCTL	0.95	0.95	0.90	1.03	0.96	0.96	0.99	0.96	0.98	0.96	0.98	Continue to Monitor
	P1-2A20-22; MESA-SSQUOC 115KV [2460] & P1-2A20-23; MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	>0.9	>0.9	0.48	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
SOLEDAD 115kV	P1-3A19-1; MOSSLAND 500/230KV TB 9 & P1-2A19-1; METCALF-MOSS LANDING #1 230KV [5100]	P6	N-1-1	>0.9	>0.9	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
SPENCE 60kV	P5-SA19-1; SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	NConv	NConv	0.27	0.29	0.29	NConv	0.25	0.27	0.24	Redundant relay installation recommended previously
	P1-3A19-18; SALINAS 115/60KV TB 2 & P1-3A19-19; SALINAS 115/60KV TB 3	P6	N-1-1	>0.9	>0.9	>0.9	>0.9	0.27	0.29	0.29	>0.9	0.25	0.28	0.24	Project: Salinas Area Reinforcement
TEMPLETN 230kV	P5-SC-A20-3; MORRO BAY SW 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery	NConv	NConv	NConv	1.02	NConv	NConv	0.90	NConv	NConv	NConv	NConv	Redundant battery supply installation recommended previously
	P1-2A20-3; TEMPLETON-GATES 230KV [5934] & P1-2A20-4; MORRO BAY-TEMPLETON 230KV [5933]	P6	N-1-1	>0.9	>0.9	0.83	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to Monitor
WTSNVILLE 60kV	P5-SA19-1; SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	0.84	1.05	0.83	0.82	0.83	0.86	0.84	0.83	0.83	Redundant relay installation recommended previously
	P7-1A19-1; MOSS LANDING - GREEN VALLEY #1 AND #2 115 KV LINES	P7	DCTL	NConv	0.93	0.80	1.03	NConv	NConv	0.99	0.89	NConv	NConv	0.99	Review Morgan Hill-Watsonville Area Reinforcement project

[illegible]

Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios		
			2027 Spring Off-Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off-Peak	2027 OP Sensitivity	2030 SP High CEC Forecast	

In accordance with TPL-001-5- Requirement R2.6, this area relies on the past studies from the 2024-25 Transmission Planning Process for transient stability studies:
<https://stakeholdercenter.caiso.com/initiativeDocuments/BoardApproved-AppendixC-2024-2025-TransmissionPlan.pdf>

Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area Hi-EV sensitivity	

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

Substation	Load Served (MW)														Potential Mitigation Solutions
	2026 Summer Peak	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area H-EV sensitivity	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
	GOLD HILL 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	122	145	210	62	62	8	80	62	85	Install redundant battery supply
	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	122	114	NConv	84	84	85	104	84	96	Install redundant battery supply
	GOLD HILL 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	122	145	210	62	62	8	80	62	85	Install redundant battery supply
	GOLD HILL 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	208	208	96	NConv	208	NConv	Install redundant battery supply
	GOLD HILL 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	119	149	242	46	46	54	71	46	76	Install redundant battery supply
	GOLD HILL 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	119	149	241	46	46	54	71	46	76	Install redundant battery supply
	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	124	113	NConv	79	79	79	109	79	99	Install redundant battery supply
	POE-RIO OSO 230KV and MIDDLE FORK-GOLD HILL 230KV	P6	N-1-1	< 100	< 100	NConv	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	GOLDHILL 230/115KV TB 1 and GOLDHILL 230/115KV TB 2	P6	N-1-1	NConv	< 100	< 100	208	208	< 100	NConv	208	< 100	Project:Goldhill Transformer addition project
	DRUMPH1 115/115KV TB 1	P6	N-1-1	< 100	< 100	< 100	133	133	145	< 100	133	< 100	Generation redispatch
DRUM-SUMMIT #2 115KV	GOLD HILL 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	38	38	30	NConv	38	NConv	Install redundant battery supply
E.MRYSVE-MRYSVILLE #1 60KV	E.NICOLS 115KV - RING R1 & R5	P2	Breaker	NA	NA	119	NA	NA	15	NA	NA	NA	Continue to monitor
	NARROWSHP2 13.80KV GEN UNIT 1 and COLGATE-SMARTVILLE #1 60KV MOAS OPENED ON COLGATE_NRRWS1TP	P3	G-1/N-1	< 100	< 100	108	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	PALERMO-NICOLAUS 115KV MOAS OPENED ON E.MRY J2_E.NICOLS and RIO OSO-NICOLAUS 115KV	P6	N-1-1	< 100	< 100	119	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	PEASE-RIO OSO 115KV MOAS OPENED ON PEASE_E.MRY J1	P1	N-1	NA	NA	101	NA	NA	54	NA	NA	NA	Continue to monitor
	PEASE-RIO OSO 115KV [3270] (PEASE-E.MRY J1)	P2	Breaker	NA	NA	101	NA	NA	54	NA	NA	NA	Continue to monitor
E.MRYSVE-PEASE 60KV	PEASE-RIO OSO 115KV [3270] (OLVH J1-E.MRY J1)	P2	Breaker	NA	NA	101	NA	NA	54	NA	NA	NA	Continue to monitor
	PEASE 115KV - MIDDLE BREAKER BAY 3	P2	Breaker	NA	NA	101	NA	NA	55	NA	NA	NA	Continue to monitor
	GRNLEAF2 13.80KV GEN UNIT 1 and NICOLAUS-MARYSVILLE 60KV MOAS OPENED ON MRYSVILLE_PLUMAS	P3	G-1/N-1	< 100	< 100	< 100	< 100	106	< 100	< 100	< 100	< 100	Generation redispatch
	NARROWSHP2 13.80KV GEN UNIT 1 and PALERMO-NICOLAUS 115KV MOAS OPENED ON PALERMO_E.MRY J2	P3	G-1/N-1	< 100	< 100	105	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	PALERMO-NICOLAUS 115KV MOAS OPENED ON PALERMO_E.MRY J2 and PEASE-RIO OSO 115KV MOAS OPENED ON PEASE_E.MRY J1	P6	N-1-1	< 100	< 100	138	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
EL DORADO-MISSOURI FLAT #2 115KV	MISSOURI FLAT-GOLD HILL #2 115KV [2670] (GOLDHILL-SHRING2)	P2	Breaker	159	178	NA	NA	30	4	NA	75	NA	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV SECTION 1G	P2	Breaker	NA	177	1	75	NA	4	86	NA	86	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV - SECTION 1F & 1G	P2	Breaker	NA	177	1	NA	NA	4	NA	NA	NA	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV - SECTION 2G & 1G	P2	Breaker	NA	178	NA	NA	NA	4	NA	NA	NA	Project:Goldhill-Eldorado reinforcement project
	MISSOURI FLAT-GOLD HILL #2 115KV [2670] (GOLDHILL-SHRING2)	P2	Breaker	159	178	NA	NA	30	6	NA	75	NA	Project:Goldhill-Eldorado reinforcement project
ELDORAD-MIZOU_T1 115KV	GOLDHILL 115KV SECTION 1G	P2	Breaker	NA	177	2	75	NA	6	86	NA	87	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV - SECTION 2G & 1G	P2	Breaker	NA	178	NA	NA	NA	6	NA	NA	NA	Project:Goldhill-Eldorado reinforcement project
	MISSOURI FLAT-GOLD HILL #2 115KV [2670] (GOLDHILL-SHRING2)	P2	Breaker	121	137	NA	NA	12	7	NA	53	NA	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV SECTION 1G	P2	Breaker	NA	136	10	53	NA	7	64	NA	64	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV - SECTION 1F & 1G	P2	Breaker	NA	137	11	NA	NA	7	NA	NA	NA	Project:Goldhill-Eldorado reinforcement project
GOLDHILL-LAKE 230KV	GOLDHILL 115KV - SECTION 2G & 1G	P2	Breaker	NA	137	NA	NA	NA	7	NA	NA	NA	Project:Goldhill-Eldorado reinforcement project
	MISSOURI FLAT-GOLD HILL #2 115KV [2670] (GOLDHILL-SHRING2)	P2	Breaker	143	162	NA	NA	16	8	NA	63	NA	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV SECTION 1G	P2	Breaker	NA	161	22	63	NA	8	77	NA	78	Project:Goldhill-Eldorado reinforcement project
	GOLDHILL 115KV - SECTION 2G & 1G	P2	Breaker	NA	162	NA	NA	NA	8	NA	NA	NA	Project:Goldhill-Eldorado reinforcement project
	BELLOTA 230KV - SECTION 1D & 2D	P2	Breaker	46	50	68	27	59	108	87	27	107	Generation redispatch
HAMMER-COUNTRY CLUB 60KV	BELLOTA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	45	47	65	27	27	111	86	27	104	Continue to monitor
	RANCHO SECO-BELLOTA #2 230KV and RANCHO SECO-BELLOTA #1 230KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	114	< 100	< 100	111	Continue to monitor
	Base Case	P0	Base Case	104	53	63	49	49	1	74	49	34	Project: Mosher transmission project.
	LOCKEFORD #1 60KV	P1	N-1	88	95	105	42	42	6	63	42	64	Continue to monitor
	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	0	114	105	0	45	7	0	0	80	Project: Mosher transmission project overload protection scheme.
	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	0	145	133	0	58	11	0	0	102	Project: Mosher transmission project overload protection scheme.
	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	0	191	175	0	76	15	0	0	134	Project: Mosher transmission project overload protection scheme.
	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	0	191	175	0	76	15	0	0	134	Project: Mosher transmission project overload protection scheme.
	LOCKEFORD 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	88	95	104	42	42	5	63	42	64	Continue to monitor
	STAGG 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0	114	105	0	0	7	0	0	80	Install redundant battery supply
KASSON-LOUISE 60KV	STAGG 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	117	111	0	0	0	0	0	52	Install redundant battery supply
	LOCKFORD 230/60KV TB 2 and LOCKFORD 230/60KV TB 3	P6	N-1-1	< 100	< 100	103	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	STAGG-TESLA 230KV and EIGHT MILE ROAD-STAGG 230KV	P6	N-1-1	< 100	NConv	109	< 100	< 100	< 100	< 100	< 100	< 112	Continue to monitor
	KASSON 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	117	129	149	36	36	11	71	36	85	Install redundant battery supply
	Base Case	P0	Base Case	1	76	85	36	36	147	88	28	1	Continue to monitor
KOLA-TESLA C #1 230KV	KOLABESS3 0.71KV GEN UNIT 3	P1	N-1	NA	60	67	NA	30	117	NA	NA	1	Continue to monitor
	KOLABESS2 0.71KV GEN UNIT 2	P1	N-1	NA	55	61	NA	30	109	NA	NA	1	Continue to monitor
	TESLA D 500/230KV TB 6	P1	N-1	NA	NA	72	NA	NA	122	NA	NA	NA	Continue to monitor
	KOLA 230/34.5KV TB 3	P1	N-1	1	60	67	30	30	117	69	25	1	Continue to monitor
	KOLAC32 34.5/0.715KV TB EQ	P1	N-1	1	60	67	30	30	117	69	25	1	Continue to monitor
	TESLA E 230KV SECTION 2E	P2	Breaker	1	69	76	24	29	127	79	13	1	Generation redispatch
	TESLA C 230KV - MIDDLE BREAKER BAY 1	P2	Breaker	1	67	68	31	38	127	77	22	1	Generation redispatch
	TESLA C 230KV - MIDDLE BREAKER BAY 2	P2	Breaker	1	67	64	20	29	123	79	6	1	Generation redispatch
	TESLA E - 2E 230KV & STAGG-TESLA LINE	P2	Breaker	1	69	76	24	29	127	79	13	1	Generation redispatch
	TESLA E SECTION 2E & TESLA D SECTION 2D 230KV	P2	Breaker	1	70	81	22	29	127	81	10	1	Generation redispatch
LINCOLN-PLEASANT GROVE 115KV	KOLABESS2 0.71KV GEN UNIT 2 and DELTA SWITCHING YARD-TESLA 230KV	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	110	< 100	< 100	< 100	Continue to monitor
	KELSO-RALPH-TESLA D 230KV and DELTA SWITCHING YARD-TESLA 230KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	131	< 100	< 100	< 100	Continue to monitor
	Contra Costa-Las Positas 230 KV and North Dublin-Vineyard 230 KV lines	P7	DCTL	1	67	75	30	54	128	77	23	1	Continue to monitor
	Contra Costa - Las Positas 230 KV and Lonetree - Cayetano 230 KV lines	P7	DCTL	1	67	75	28	54	128	77	22	1	Continue to monitor
	Tesla-Newark No.1 and Tesla-Ravenswood 230 KV lines	P7	DCTL	1	69	76	24	46	127	78	15	1	Continue to monitor
	RIO OSO-ATLANTIC 230KV and ATLANTIC-GOLD HILL 230KV	P6	N-1-1	< 100	100	128	< 100	< 100	< 100	< 100	< 100	< 100	Reconductor Rio Oso-SPI Jct-Lincoln 115KV line Project under review
	RIO OSO-ATLANTIC 230KV and ATLANTIC-GOLD HILL 230KV	P6	N-1-1	111	114	143	< 100	< 100	< 100	< 100	< 100	< 100	Reconductor Rio Oso-SPI Jct-Lincoln 115KV line Project under review
LOCKEFORD #1 60KV	HAMMER-COUNTRY CLUB 60KV MOAS OPENED ON MORADAJT_MSHR 60V	P1	N-1	0	100	108	0	0	6	0	0	67	Continue to monitor
	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	0	330	309	0	117	18	0	0	212	Project: Mosher transmission project overload protection scheme.
	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	NA	330	309	NA	117	18	NA	NA	212	Project: Mosher transmission project overload protection scheme.
	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	0	330	309	0	117	18	0	0	212	Project: Mosher transmission project overload protection scheme.
	STAGG 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0	330	309	0	0	18	0	0	212	Install redundant battery supply
LOCKEFORD-BELLOTA 230KV	STAGG 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	304	298	0	0	6	0	0	138	Install redundant battery supply
	STAGG-TESLA 230KV and EIGHT MILE ROAD-STAGG 230KV	P6	N-1-1	< 100	NConv	310	< 100	< 100	< 100	< 100	< 100	298	Continue to monitor
LOCKEFORD-VICTOR-LODI 60KV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	108	NConv	NA	NA	26	NA	NA	75	Install redundant battery supply
	LOCKEFORD-INDUSTRIAL 60KV	P1	N-1	104	NA	NA	88	NA	NA	98	91	NA	Project:Lockeford-Lodi Area 230 kV Development
MADISON-VACA 115KV (2)	1926-WD 115.00KV GEN UNIT FW and AMERIGAS-VACA-DIX-PUTH CRK 115KV	P3	G-1/N-1	< 100	< 100	< 100	< 100	104	< 100	< 100	< 100	< 100	Generation redispatch
	STANISLAUSPH-MELONESSWSTA-RIVERBANKISS 115KV	P1	N-1	88	17	28	75	75	82	149	53	35	Sensitivity only
	MELONESSWSTA-RIVERBANKISS-STANISLAUSPH 115KV	P1	N-1	88	17	28	75	75	82	149	53	35	Sensitivity only
	RIPON-RIVERBANKISS 115KV MOAS OPENED ON VALLEYHOMEJ1_VALLEYHOME	P1	N-1	70	15	17	69	69	82	139	60	30	Sensitivity only
	RIVERBANKISS-RIPON 115KV MOAS OPENED ON VALLEYHOMEJ1_VALLEYHOME	P1	N-1	70	15	17	69	69	82	139	60	30	Sensitivity only
	STANISLAUSPH 13.80KV GEN UNIT 1	P1	N-1	68	15	21	64	64	57	100	11	24	Sensitivity only

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions	
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
MANTECA-RIPON 115KV	RIVERBANK JCT SW STA-RIPON 115KV [3841] (MELONES CT2-RIVERBANK SS)	P2	Breaker	88	17	28	75	42	82	149	53	35	Sensitivity only	
	RIVERBANK JCT SW STA-RIPON 115KV [3841] (RIVERBANK SS-VALLEYHOME J1)	P2	Breaker	88	17	28	75	42	82	149	52	36	Sensitivity only	
	STANISLAUSPH - 1D 115KV & STANISLAUSPH-MELONESSWSTA-RIVERBANK SS LINE	P2	Breaker	88	17	27	80	42	82	149	68	35	Sensitivity only	
	MELONESSWSTA - 1D 115KV & MELONESSWSTA-RIVERBANK SS-STANISLAUSPH LINE	P2	Breaker	88	17	28	80	42	82	149	72	35	Sensitivity only	
	BELLOTA 230KV - SECTION 1E & 2E	P2	Breaker	98	20	16	15	15	66	146	62	16	Sensitivity only	
	RIPON 115KV - RING R4 & R5	P2	Breaker	10	54	36	33	25	101	68	35	6	Generation redispatch	
	GWFTRCY3 18.00KV & GWFTRCY1 13.80KV & GWFTRCY2 13.80KV GEN UNITS and STANISLAUSPH-MELONESSWSTA-RIVERBANK SS 115KV	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	154	< 100	< 100	Sensitivity only	
	MI-WUK 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	17	24	67	NA	61	100	NA	27	Sensitivity only	
	MELONES SW STA 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	17	27	81	NA	82	150	NA	34	Sensitivity only	
	RIVERBANK SW STA 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	17	28	75	NA	82	149	NA	35	Sensitivity only	
MELONESSWSTA-MANTECA 115KV	MELONES SW STA 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	88	17	27	81	81	82	150	70	34	Sensitivity only	
	MELONESSWSTA-RIVERBANK SS-STANISLAUSPH 115KV and VIERRA-TESLA 115KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	155	< 100	< 100	Sensitivity only	
	GWFTRCY3 18.00KV & GWFTRCY1 13.80KV & GWFTRCY2 13.80KV GEN UNITS and STANISLAUSPH-MELONESSWSTA-RIVERBANK SS 115KV	P3	G-1/N-1	< 100	< 100	< 100	101	< 100	< 100	< 100	< 100	< 100	Generation redispatch	
	Q1109BESS 34.50KV GEN UNIT 1 and STANISLAUSPH-MELONESSWSTA-RIVERBANK SS 115KV	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	103	< 100	< 100	< 100	Continue to monitor	
	TESLA 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	75	28	30	41	40	56	NConv	46	12	Install redundant battery supply	
	TESLA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	88	34	NConv	30	30	63	NConv	36	14	Continue to monitor	
	RIVERBANK SS-RIPON 115KV MOAS OPENED ON VALLEYHOME J1_VALLEYHOME and STANISLAUS-MANTECA #2 115KV	P6	N-1-1	< 100	< 100	< 100	122	122	< 100	113	108	< 100	Generation redispatch	
	BELLOTA-RIVERBANK-MELONESSWSTA-TULLOCH 115KV and STANISLAUSPH-MELONESSWSTA-RIVERBANK SS 115KV	P6	N-1-1	< 100	< 100	< 100	100	100	135	109	112	< 100	Generation redispatch	
	STANISLAUSPH-MELONESSWSTA-RIVERBANK SS 115KV and BELLOTA-RIVERBANK-MELONESSWSTA-TULLOCH 115KV	P6	N-1-1	< 100	< 100	< 100	123	123	< 100	< 100	118	< 100	Generation redispatch	
	MANTECA-RIPON 115KV	P1	N-1	92	23	22	73	73	66	158	50	65	Sensitivity only	
MELONESSWSTA-RIVERBANK SS-STANISLAUSPH 115KV	STANISLAUSPH 13.80KV GEN UNIT 1 and MANTECA-RIPON 115KV	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	137	< 100	< 100	Sensitivity only	
	TESLA 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	74	14	20	91	91	56	NConv	86	3	Sensitivity only	
	TESLA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	91	21	NConv	77	77	63	NConv	73	3	Continue to monitor	
	MANTECA-MELONESSWSTA 115KV MOAS OPENED ON STANISLAUSPH_FROGTOWN CN11 and BELLOTA-RIVERBANK-MELONESSWSTA-TULLOCH 115KV	P6	N-1-1	< 100	< 100	< 100	121	121	< 100	< 100	116	< 100	Generation redispatch	
	STANISLAUSPH 115/13.8KV TB 1 and MANTECA-RIPON 115KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	162	< 100	< 100	Sensitivity only	
	E.MRYSVE-MRYSVILLE #1 60KV	P1	N-1	NA	NA	117	NA	NA	35	NA	NA	NA	Continue to monitor	
	E.NICOLS 115KV - RING R1 & R5	P2	Breaker	79	85	145	44	18	3	47	44	62	Continue to monitor	
	NARROWSPH2 13.80KV GEN UNIT 1 and E.MRYSVE-MRYSVILLE #1 60KV	P3	G-1/N-1	< 100	< 100	132	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
	RAISTON 13.80KV GEN UNIT 1 and PALERMO-NICOLAUS 115KV MOAS OPENED ON E.MRYSVE J2_E_NICOLS	P3	G-1/N-1	< 100	< 100	102	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
	RIO OSO 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	76	91	NConv	44	43	20	82	43	83	Continue to monitor	
PEASE-MARYSVILLE-HARTER 60KV	PEASE 115/60KV TB 2 and PEASE 115/60KV TB 5	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	111	< 100	110	Sensitivity only	
	PALERMO-NICOLAUS 115KV MOAS OPENED ON E.MRYSVE J2_E_NICOLS and RIO OSO-NICOLAUS 115KV	P6	N-1-1	< 100	< 100	145	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
	PEASE 115/60KV TB 2 and PEASE 115/60KV TB 5	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	108	< 100	109	Sensitivity only	
	Base Case	P0	Base Case	79	87	105	38	38	12	49	38	53	Continue to monitor	
	HALEY PH 6.60KV GEN UNIT 1	P1	N-1	82	89	105	40	40	6	49	40	53	Continue to monitor	
	HALEY 60/6.6KV TB 1	P1	N-1	81	89	105	40	40	6	49	40	53	Continue to monitor	
	PLACER-GOLD HILL #2 115KV and DRUM-HIGGINS 115KV MOAS OPENED ON CHCGO PK_HIGGINS	P6	N-1-1	< 100	102	124	< 100	< 100	< 100	< 100	< 100	< 100	Operating solution	
	DRUM-HIGGINS 115KV MOAS OPENED ON CHCGO PK_HIGGINS and PLACER-GOLD HILL #1 115KV	P6	N-1-1	102	113	140	< 100	< 100	< 100	< 100	< 100	< 100	Operating solution	
	RANCHO SECO-BELLOTA #2 230KV and GOLDHILL-LAKE 230KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	113	Sensitivity only
	RANCHO SECO-BELLOTA #1 230KV and GOLDHILL-LAKE 230KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	113	Sensitivity only
RIO OSO-ATLANTIC 230KV	GOLDHILL-LAKE 230KV and RANCHO SECO-BELLOTA #1 230KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	113	Sensitivity only
	RAISTON 13.80KV GEN UNIT 1 and RIO OSO-GOLD HILL 230KV	P3	G-1/N-1	< 100	< 100	101	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
RIO OSO-BRIGHTON 230KV	RIO OSO-UNCLIN-SPILINCULN 115KV and RIO OSO-GOLD HILL 230KV	P6	N-1-1	< 100	< 100	117	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
RIO OSO-BRNSWALT-DRUMPH1 115KV	RIO OSO 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	80	98	105	33	33	31	59	33	69	Continue to monitor	
	GOLDHILL 230KV - SECTION 2D & 1D	P2	Breaker	NConv	NA	NA	NA	49	NA	NA	43	NA	Project:Goldhill Transformer addition project	
	GOLD HILL 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	43	43	98	NConv	43	NConv	Install redundant battery supply	
	GOLDHILL 230/115KV TB 1 and GOLDHILL 230/115KV TB 2	P6	N-1-1	NConv	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
RIO OSO-DRUMPH1-BRUNSWCK 115KV	GOLDHILL 230KV - SECTION 2D & 1D	P2	Breaker	NConv	NA	NA	NA	43	NA	NA	48	NA	Project:Goldhill Transformer addition project	
	GOLD HILL 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	48	48	95	NConv	48	NConv	Install redundant battery supply	
	GOLDHILL 230/115KV TB 1 and GOLDHILL 230/115KV TB 2	P6	N-1-1	NConv	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
	RIO OSO-BRNSWALT-DRUMPH1 115KV and BELL-PLACER 115KV MOAS OPENED ON PLACER_BELL PGE	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	216	< 100	< 100	< 100	Continue to monitor	
RIO OSO-GOLD HILL 230KV	RIO OSO-ATLANTIC 230KV and RIO OSO-UNCLIN-SPILINCULN 115KV	P6	N-1-1	< 100	< 100	109	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
	RIO OSO-ATLANTIC 230KV and RIO OSO-UNCLIN-SPILINCULN 115KV	P6	N-1-1	< 100	< 100	102	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
RIO OSO-UNCLIN-SPILINCULN 115KV	RIO OSO-ATLANTIC 230KV and ATLANTIC-GOLD HILL 230KV	P6	N-1-1	119	< 100	100	< 100	< 100	< 100	< 100	< 100	< 100	Reconductor Rio Osó-SPI Jct-Lincoln 115KV line Project under review	
RIO OSO-WEST SACRAMENTO 115KV	BRIGHTON 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	107	65	61	58	58	6	66	58	42	Project: Rio Osó - W. Sacramento Reconductoring	
	STATION DC BATTERY SUPPLY BRIGHTON 230KV BATT	P5	Non-Redundant Battery/Relay	107	65	61	58	58	6	66	58	42	Project: Rio Osó - W. Sacramento Reconductoring	
	WOODLAND-DAVIS 115KV and BRIGHTN-W SCRMINO 115KV	P6	N-1-1	117	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Project: Rio Osó - W. Sacramento Reconductoring	
	RIO OSO-BRIGHTON 230KV and RIO OSO-WOODLAND #1 115KV	P6	N-1-1	< 100	< 100	102	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor	
RIPON-RIVERBANK SS 115KV	MANTECA-RIPON 115KV	P1	N-1	88	10	22	68	68	66	151	48	28	Sensitivity only	
	RIPON 115KV - RING R3 & R2	P2	Breaker	3	50	37	17	25	102	68	12	6	Generation redispatch	
	RIPON-MANTECA 115KV [1062] (RIPON CT2-MANTECA)	P2	Breaker	88	10	22	68	35	66	151	48	28	Sensitivity only	
	RIPON CT2-RIPON 115KV [0] NO FAULT	P2	Breaker	88	10	22	68	35	66	151	48	28	Sensitivity only	
	MANTECA 115KV - RING R4 & R5	P2	Breaker	88	10	22	68	35	66	151	48	28	Sensitivity only	
	MANTECA 115KV - RING R6 & R5	P2	Breaker	88	10	22	68	35	66	151	48	28	Sensitivity only	
	RIPON 115KV - RING R3 & R2	P2	Breaker	21	27	17	33	21	70	113	21	9	Sensitivity only	
	RIPON-MANTECA 115KV [1062] (RIPON CT2-MANTECA)	P2	Breaker	71	8	28	60	68	145	141	41	51	Generation redispatch	
	RIPON CT2-RIPON 115KV [0] NO FAULT	P2	Breaker	71	8	28	60	68	145	141	41	51	Generation redispatch	
	MANTECA 115KV - RING R4 & R5	P2	Breaker	71	9	28	60	69	145	141	41	51	Generation redispatch	
	MANTECA 115KV - RING R6 & R5	P2	Breaker	71	9	28	60	69	145	141	41	51	Generation redispatch	
	RIPON 115KV - RING R3 & R2	P2	Breaker	4	76	55	26	38	154	103	18	9	Generation redispatch	
	STANISLAUSPH 13.80KV GEN UNIT 1 and MANTECA-RIPON 115KV	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	155	< 100	< 100	Sensitivity only	
	RIPON 115.00KV GEN UNIT 1 and MANTECA-RIPON 115N													

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
SPAULDING-SUMMIT 60KV	BRNSWALT 115KV - RING R7 & R6	P2	Breaker	84	97	73	89	134	101	70	89	65	Generation redispatch
	BRNSWALT 115KV - RING R5 & R6	P2	Breaker	86	99	76	91	136	103	72	91	67	Generation redispatch
	BRNSWALT 115KV - RING R7 & R6	P2	Breaker	86	99	76	91	136	103	72	91	67	Generation redispatch
	BRNSWALT 115KV - RING R5 & R6	P2	Breaker	72	71	45	73	101	86	58	73	55	Generation redispatch
SPAULDING-DRUMPH1-BOWMANPH 60KV	BRNSWALT 115KV - RING R7 & R6	P2	Breaker	72	71	45	73	101	86	58	73	55	Generation redispatch
	BRNSWALT 115KV - RING R7 & R6	P2	Breaker	72	71	45	73	101	86	58	73	55	Generation redispatch
STAGG-HAMMER 60KV	LOCKFORD 230/60KV TB 2 and LOCKFORD 230/60KV TB 3	P6	N-1-1	< 100	110	149	< 100	< 100	< 100	< 100	< 100	< 100	Project: Mosher transmission project overload protection scheme.
STANISLAUS-MANTECA #2 115KV	TESLA 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	55	47	48	11	11	84	NConv	19	23	Sensitivity only
	TESLA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	63	54	NConv	7	6	92	NConv	13	27	Continue to monitor
STANISLAUSPH-MELONESSWSTA-RIVERBANKISS 115KV	RIPON-MANTECA 115KV [1062] (RIPONUCT2-MANTECA)	P2	Breaker	92	23	22	73	80	66	158	50	65	Sensitivity only
	RIPONUCT2-RIPON 115KV [0] NO FAULT	P2	Breaker	92	23	22	73	80	66	158	50	65	Sensitivity only
	BELLOTA-RIVERBANK-MELONES SW STA 115KV [1070] (RIVERBANKIT3-TULLOCH	P2	Breaker	64	70	30	100	95	44	97	86	76	Generation redispatch
	MANTECA 115KV - RING R4 & R5	P2	Breaker	92	23	22	73	81	66	158	50	65	Sensitivity only
	MANTECA 115KV - RING R6 & R5	P2	Breaker	92	23	22	73	81	66	158	50	65	Sensitivity only
	RIPON 115KV - RING R3 & R2	P2	Breaker	22	62	17	35	48	70	118	22	21	Sensitivity only
STOCKTON A-LOCKFORD-BELLOTA #2 115KV	BELLOTA 115KV SECTION 1D	P2	Breaker	87	89	104	44	39	8	58	49	55	Continue to monitor
	BELLOTA - 1D 115KV & BELLOTA-LOCKFORD-CAMANCHEPH LINE	P2	Breaker	96	99	114	52	48	10	67	52	64	Continue to monitor
	BELLOTA - 1D 115KV & BELLOTA-RIVERBANK LINE	P2	Breaker	87	89	104	44	39	8	58	49	55	Continue to monitor
	BELLOTA 115KV SECTION 1D	P2	Breaker	85	85	103	42	33	10	52	48	48	Continue to monitor
	BELLOTA - 1D 115KV & BELLOTA-LOCKFORD-CAMANCHEPH LINE	P2	Breaker	97	98	116	53	45	7	65	53	60	Continue to monitor
	BELLOTA - 1D 115KV & BELLOTA-RIVERBANK LINE	P2	Breaker	85	85	103	42	33	10	52	48	48	Continue to monitor
Summit PST	BRNSWALT 115KV - RING R5 & R6	P2	Breaker	78	89	61	85	129	96	65	85	58	Generation redispatch
	BRNSWALT 115KV - RING R7 & R6	P2	Breaker	78	89	61	85	129	96	64	85	58	Generation redispatch
Summit-Tamarack 60 KV line	BRNSWALT 115KV - RING R5 & R6	P2	Breaker	81	92	67	86	131	98	67	86	61	Generation redispatch
	BRNSWALT 115KV - RING R7 & R6	P2	Breaker	81	92	66	86	131	98	67	86	61	Generation redispatch
TESLA-LAWRENCE LAB 115KV	TESLA D 230KV - SECTION 1D & 2D	P2	Breaker	24	41	13	123	148	21	44	121	90	Generation redispatch
	TESLA D 230KV - SECTION 1D & 2D	P2	Breaker	24	45	16	178	217	56	94	176	123	Generation redispatch
	TESLA D 230/115KV TB 1 and TESLA D 230/115KV TB 3	P6	N-1-1	< 100	< 100	< 100	124	124	< 100	< 100	< 100	< 100	Generation redispatch
	TESLA-RAVENSWOOD 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	< 100	< 100	104	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
TESLA-NEWARK #2 230KV	TESLA E 230KV SECTION 2E	P2	Breaker	69	91	109	61	86	43	59	64	76	Continue to monitor
	TESLA E - 2E 230KV & STAGG-TESLA LINE	P2	Breaker	69	91	109	61	86	43	59	64	76	Continue to monitor
	TESLA E SECTION 2E & TESLA D SECTION 2D 230KV	P2	Breaker	66	89	104	58	82	38	56	61	74	Continue to monitor
	TESLA E 230KV - SECTION 2E & 1E	P2	Breaker	69	91	109	61	86	43	59	63	76	Continue to monitor
	TESLA E 230KV SECTION 2E	P2	Breaker	82	108	94	72	102	37	70	75	90	Project: Tesla 115KV bus reconfiguration
	TESLA E - 2E 230KV & STAGG-TESLA LINE	P2	Breaker	82	108	94	72	102	37	70	75	90	Project: Tesla 115KV bus reconfiguration
	TESLA E SECTION 2E & TESLA D SECTION 2D 230KV	P2	Breaker	78	105	90	68	97	33	66	72	88	Project: Tesla 115KV bus reconfiguration
	TESLA E 230KV - SECTION 2E & 1E	P2	Breaker	82	108	94	72	102	37	70	75	91	Project: Tesla 115KV bus reconfiguration
	TESLA-NEWARK #1 230KV and TESLA-RAVENSWOOD 230KV	P6	N-1-1	< 100	< 100	109	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	Tesla-NEWARK No.1 and Tesla-Ravenswood 230 KV lines	P7	DTCL	69	91	108	61	64	43	59	64	76	Continue to monitor
TESLA-SCHULTE SW STA #1 115KV	VIERRA-TRACY-KASSON 115KV (2) and TESLA-SCHULTE SW STA #2 115KV	P6	N-1-1	< 100	< 100	< 100	< 100	104	< 100	< 100	103	< 100	Generation redispatch
TESLA-SCHULTE SW STA #2 115KV	VIERRA-TRACY-KASSON 115KV (2) and TESLA-SCHULTE SW STA #1 115KV	P6	N-1-1	< 100	< 100	< 100	< 100	104	< 100	< 100	104	< 100	Generation redispatch
VACA-BAHIA 230KV	TESLA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	89	101	NConv	91	91	43	NConv	97	103	Install redundant battery supply
	BIRDS LANDING SW STA-CONTRA COSTA SUB 230KV and BIRDS LANDING SW STA-CONTRA COSTA PP 230KV	P6	N-1-1	< 100	< 100	105	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	Birds-CC PP 230 KV and Birds-CC Sub 230 KV lines	P7	DTCL	78	95	105	72	53	53	85	66	96	Continue to monitor
	Contra Costa-Moraga Nos. 1 & 2 230 KV lines	P7	DTCL	78	92	111	67	48	52	78	65	88	Continue to monitor
VACA-LAMBIE SW STA 230KV	BIRDS LANDING SW STA-CONTRA COSTA SUB 230KV and BIRDS LANDING SW STA-CONTRA COSTA PP 230KV	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	118	< 100	< 100	< 100	Continue to monitor
	Birds-CC PP 230 KV and Birds-CC Sub 230 KV lines	P7	DTCL	82	80	83	89	8	118	47	40	48	Continue to monitor
VACA-PARKWAY 230KV	TESLA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	88	96	NConv	90	90	45	NConv	96	98	Continue to monitor
	BIRDS LANDING SW STA-CONTRA COSTA SUB 230KV and BIRDS LANDING SW STA-CONTRA COSTA PP 230KV	P6	N-1-1	< 100	< 100	106	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	Birds-CC PP 230 KV and Birds-CC Sub 230 KV lines	P7	DTCL	77	90	106	71	53	55	85	65	92	Continue to monitor
	Contra Costa-Moraga Nos. 1 & 2 230 KV lines	P7	DTCL	77	87	112	66	48	54	77	64	83	Continue to monitor
VACA-SUISUN-JAMESON 115KV	VACA-CAVILLE-JAMESON-NORTH TOWER 115KV MOAS OPENED ON HALE J1-HALE and VACA-SUSUN 115KV MOAS OPENED ON VACA-DIX_WEC (2)	P6	N-1-1	< 100	< 100	110	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
VACA-VACAVILLE-JAMESON-NORTH TOWER 115KV	Oleum-North Tower-Christie 115 KV and Martinez-Sobranie 115 KV lines	P7	DTCL	102	110	NA	NA	9	15	NA	77	NA	Project:North Tower 115 kV Looping Project
	Oleum-North Tower-Christie 115 KV and Oleum-Martinez 115 KV lines	P7	DTCL	102	158	NA	NA	50	85	NA	77	NA	Project:North Tower 115 kV Looping Project
W.SCRMNO-DAVIS 115KV	WOODLAND-DAVIS 115KV and BRIGHTON-DAVIS 115KV MOAS OPENED ON HOWARDICT3_BIRNCT	P6	N-1-1	< 100	113	108	< 100	< 100	< 100	< 100	< 100	< 100	Operating solution
WEBER E-STCKTN A-SUMDEN 60KV	STCKNBIO MASS 13.80KV GEN UNIT 1 and STOCKTON A-WEBER #2 60KV	P3	G-1/N-1	< 100	< 100	100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	Base Case	P0	Base Case	15	24	167	7	7	12	21	7	30	Continue to monitor
	OXBOW TAP 60KV MOAS OPENED ON ENVRO_HY_FORST HL	P1	N-1	49	52	159	23	23	16	40	22	44	Continue to monitor
	OXBOW F 9.11KV GEN UNIT 1	P1	N-1	49	52	160	23	23	16	40	23	44	Continue to monitor
	OXBOW 60/9.11KV TB 1	P1	N-1	49	52	160	23	23	16	40	23	44	Continue to monitor
	DRUMPH1 115/115KV TB 1	P1	N-1	18	16	157	6	6	11	18	6	23	Continue to monitor
	BRNSWALT 115KV - RING R5 & R6	P2	Breaker	24	21	154	6	18	11	25	6	26	Continue to monitor
	BRNSWALT 115KV - RING R7 & R6	P2	Breaker	24	21	154	6	18	11	25	6	26	Continue to monitor
	OXBOW F 9.11KV GEN UNIT 1 and DRUMPH1 115/115KV TB 1	P3	G-1/N-1	< 100	< 100	168	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	Non-Redundant Battery/Relay	P5	Non-Redundant Battery/Relay	9	13	139	6	6	11	18	6	24	Continue to monitor
WOODLAND-DAVIS 115KV	GOLD HILL 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	9	13	141	6	6	11	18	6	24	Continue to monitor
	PLACER-GOLD HILL #2 115KV and PLACER-GOLD HILL #1 115KV	P6	N-1-1	< 100	< 100	141	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor
	BRIGHTN 115KV SECTION ME	P2	Breaker	86	106	96	53	40	18	55	52	69	Project:Vacadion area reinforcement
	BRIGHTN - ME 115KV & BRIGHTN-GRAND ISLAND #1 LINE	P2	Breaker	86	106	96	53	40	18	55	52	69	Project:Vacadion area reinforcement
	BRIGHTN - ME 115KV & BRIGHTN-GRAND ISLAND #2 LINE	P2	Breaker	86	106	96	53	40	18	55	52	69	Project:Vacadion area reinforcement
	BRIGHTN - ME 115KV & BRIGHTN-DAVIS LINE	P2	Breaker	86	107	96	53	40	18	55	52	69	Project:Vacadion area reinforcement
	BRIGHTN 115KV - SECTION ME & MD	P2	Breaker	86	106	96	53	40	18	55	52	69	Project:Vacadion area reinforcement
	BRIGHTN 115KV SECTION ME	P2	Breaker	87	112	100	52	44	17	58	52	75	Project:Vacadion area reinforcement
	BRIGHTN - ME 115KV & BRIGHTN-W.SCRMNO LINE	P2	Breaker	88	99	100	52	44	17	58	52	65	Continue to monitor
	BRIGHTN - ME 115KV & BRIGHTN-GRAND ISLAND #1 LINE	P2	Breaker	87	112	100	52	44	17	58	52	75	Project:Vacadion area reinforcement
	BRIGHTN - ME 115KV & BRIGHTN-GRAND ISLAND #2 LINE	P2	Breaker	87	112	100	52	44	17	58	52	75	Project:Vacadion area reinforcement
	BRIGHTN - ME 115KV & BRIGHTN-DAVIS LINE	P2	Breaker	87	112	100	52	44	17	58	52	75	Project:Vacadion area reinforcement
	BRIGHTN 115KV - SECTION ME & MD	P2	Breaker	87	112	100	52	44	17	58	52	75	Project:Vacadion area reinforcement
	STATION DC BATTERY SUPPLY BRIGHTON 115KV BATT	P5	Non-Redundant Battery/Relay	88	99	101	52	52	17	58	52	65	Continue to monitor
	BRIGHTON 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	81	103	93	44	44	5	47	44	63	Project: Woodland-Davis Re-rate
	STATION DC BATTERY SUPPLY BRIGHTON 230KV BATT	P5	Non-Redundant Battery/Relay	81	103	93	44	44	5	47	44	63	Project: Woodland-Davis Re-rate
	LOCKFORD-BRIGHTON 230KV and RIO OSO-BRIGHTON 230KV	P6	N-1-1	< 100	104	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Project:Vacadion area reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
MERIDIAN 60 kV	Base Case	P0	Base Case	0.98	0.95	1.04	1.02	1.02	1.03	1.00	1.02	0.97	Continue to monitor
LOCKFORD 230 kV	BELLOTA 230KV - SECTION 1E & 2E	P2	Breaker	0.93	0.97	0.89	1.03	1.00	1.00	1.00	0.96	0.99	Continue to monitor
DEEPWATR 115 kV	BRIGHTN - ME 115KV & BRIGHTON-DAVIS LINE	P2	Breaker	0.94	0.88	0.91	1.02	1.04	1.05	0.99	1.02	0.95	Continue to monitor
W.SCRMNO 115 kV	BRIGHTN - ME 115KV & BRIGHTON-DAVIS LINE	P2	Breaker	0.95	0.89	0.92	1.02	1.04	1.05	1.00	1.02	0.96	Under review
DEEPWATR 115 kV	BRIGHTN - ME 115KV & BRIGHTON-GRAND ISLAND #1 LINE	P2	Breaker	0.94	0.88	0.91	1.02	1.04	1.05	0.99	1.02	0.95	Under review
W.SCRMNO 115 kV	BRIGHTN - ME 115KV & BRIGHTON-GRAND ISLAND #1 LINE	P2	Breaker	0.95	0.89	0.92	1.02	1.04	1.05	1.00	1.02	0.96	Under review
W.SCRMNO 115 kV	BRIGHTN - ME 115KV & BRIGHTON-GRAND ISLAND #2 LINE	P2	Breaker	0.95	0.89	0.92	1.02	1.04	1.05	1.00	1.02	0.96	Under review
DEEPWATR 115 kV	BRIGHTN - ME 115KV & BRIGHTON-GRAND ISLAND #2 LINE	P2	Breaker	0.94	0.88	0.91	1.02	1.04	1.05	0.99	1.02	0.95	Under review
DEEPWATR 115 kV	BRIGHTN 115KV - SECTION ME & MD	P2	Breaker	0.94	0.88	0.91	1.02	1.04	1.05	0.99	1.02	0.95	Under review
W.SCRMNO 115 kV	BRIGHTN 115KV - SECTION ME & MD	P2	Breaker	0.95	0.89	0.92	1.02	1.04	1.05	1.00	1.02	0.96	Under review
DEEPWATR 115 kV	BRIGHTN 115KV SECTION ME	P2	Bus	0.94	0.88	0.91	1.02	1.04	1.05	0.99	1.02	0.95	Under review
W.SCRMNO 115 kV	BRIGHTN 115KV SECTION ME	P2	Bus	0.95	0.89	0.92	1.02	1.04	1.05	1.00	1.02	0.96	Under review
E.NICOLS 115 kV	E.NICOLS 115KV - RING R1 & R5	P2	Breaker	1.00	0.99	0.79	1.06	0.79	1.05	1.02	1.06	1.02	Continue to monitor
HORSESHE 115 kV	GOLDHILL 115KV - SECTION 1F & 2F	P2	Breaker	0.56	0.96	0.93	1.02	1.06	1.06	1.00	0.99	0.98	Project:Goldhill Transformer addition project
PLACER 115 kV	GOLDHILL 115KV - SECTION 1F & 2F	P2	Breaker	0.58	0.97	0.94	1.03	1.06	1.06	1.00	0.99	0.99	Project:Goldhill Transformer addition project
HIGGINS 115 kV	GOLDHILL 115KV - SECTION 1F & 2F	P2	Breaker	0.64	0.98	0.96	1.03	1.06	1.06	1.01	1.01	1.00	Project:Goldhill Transformer addition project
BELL PGE 115 kV	GOLDHILL 115KV - SECTION 1F & 2F	P2	Breaker	0.59	0.97	0.95	1.03	1.06	1.06	1.00	0.99	0.99	Project:Goldhill Transformer addition project
HALSEY 60 kV	GOLDHILL 115KV - SECTION 1F & 2F	P2	Breaker	0.60	1.01	0.99	1.02	1.03	1.03	1.01	1.02	1.01	Project:Goldhill Transformer addition project
PLACER 60 kV	GOLDHILL 115KV - SECTION 1F & 2F	P2	Breaker	0.60	1.02	0.99	1.02	1.03	1.03	1.02	1.02	1.02	Project:Goldhill Transformer addition project
GOLDHILL 230 kV	GOLDHILL 230KV - SECTION 2D & 2E	P2	Breaker	NA	0.96	0.88	1.03	NA	1.05	1.01	NA	1.00	Continue to monitor
E.MRYSVE 115 kV	PALERMO-NICOLAUS 115KV (E.MRYSVE-E.MRY J2)	P2	Line Section w/o Fault	NA	NA	0.88	NA	NA	1.13	NA	NA	NA	Continue to monitor
SHWSS 60 kV	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	NA	0.42	0.33	NA	0.94	1.00	NA	NA	0.71	Project: Mosher transmission project overload protection scheme.
HAMMER 60 kV	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	NA	0.46	0.38	NA	0.98	1.03	NA	NA	0.76	Project: Mosher transmission project overload protection scheme.
CNTRY CB 60 kV	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	NA	0.46	0.37	NA	0.97	1.03	NA	NA	0.76	Project: Mosher transmission project overload protection scheme.
MSHR 60V 60 kV	STAGG-D SECTION 1D & STAGG-E SECTION 1E 230KV	P2	Breaker	NA	0.54	0.50	NA	0.99	1.03	NA	NA	0.79	Project: Mosher transmission project overload protection scheme.
LOCKFORD 230 kV	BELLOTA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.96	0.87	1.00	0.96	1.00	0.99	0.96	0.98	Continue to monitor
DEEPWATR 115 kV	BRIGHTON 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.87	0.88	1.02	1.02	1.05	0.99	1.02	0.94	Install redundant relay/battery supply
W.SCRMNO 115 kV	BRIGHTON 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.88	0.89	1.02	1.02	1.05	1.00	1.02	0.95	Install redundant relay/battery supply
DAVIS 115 kV	BRIGHTON 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.94	0.89	0.89	1.02	1.02	1.05	1.00	1.02	0.96	Install redundant relay/battery supply
BRIGHTN 115 kV	BRIGHTON 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.87	0.89	1.03	1.03	1.06	1.00	1.03	0.95	Install redundant relay/battery supply
GRAND IS 115 kV	BRIGHTON 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.87	0.88	1.03	1.03	1.06	0.99	1.03	0.94	Install redundant relay/battery supply
BELL PGE 115 kV	GOLD HILL 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.89	0.82	0.57	1.00	1.00	1.08	0.95	1.00	0.93	Install redundant relay/battery supply
PLACER 115 kV	GOLD HILL 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.89	0.81	0.56	1.00	1.00	1.08	0.94	1.00	0.93	Install redundant relay/battery supply
HIGGINS 115 kV	GOLD HILL 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.85	0.63	1.01	1.01	1.08	0.96	1.01	0.95	Install redundant relay/battery supply
PLACER 60 kV	GOLD HILL 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.95	0.86	0.56	1.02	1.02	1.03	1.01	1.02	0.99	Install redundant relay/battery supply
HALSEY 60 kV	GOLD HILL 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.95	0.87	0.55	1.02	1.02	1.03	1.00	1.02	0.99	Install redundant relay/battery supply
HALSEY 60 kV	GOLD HILL 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.86	0.55	1.02	1.02	1.03	1.00	1.02	0.99	Install redundant relay/battery supply
PLACER 60 kV	GOLD HILL 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.86	0.56	1.02	1.02	1.03	1.01	1.02	0.99	Install redundant relay/battery supply
HIGGINS 115 kV	GOLD HILL 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.92	0.85	0.63	1.01	1.01	1.08	0.96	1.01	0.95	Install redundant relay/battery supply
PLACER 115 kV	GOLD HILL 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.89	0.81	0.55	1.00	1.00	1.08	0.94	1.00	0.93	Install redundant relay/battery supply
BELL PGE 115 kV	GOLD HILL 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.89	0.82	0.57	1.00	1.00	1.08	0.95	1.00	0.93	Install redundant relay/battery supply
W.SCRMNO 115 kV	RIO OSO 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.96	0.90	0.90	1.03	1.03	1.07	0.99	1.03	0.96	Continue to monitor
WOODLD 115 kV	RIO OSO 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.87	0.84	1.02	1.02	1.07	0.98	1.02	0.94	Install redundant relay/battery supply
DAVIS 115 kV	RIO OSO 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.88	0.86	1.02	1.02	1.07	0.98	1.02	0.95	Install redundant relay/battery supply
DEEPWATR 115 kV	RIO OSO 115 kV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.95	0.89	0.89	1.03	1.03	1.07	0.99	1.03	0.96	Install redundant relay/battery supply
WOODLD 115 kV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.58	0.51	Diverge	1.01	1.01	1.07	0.92	1.01	0.79	Install redundant relay/battery supply
BRIGHTON 230 kV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.76	0.68	Diverge	1.03	1.03	1.01	0.95	1.03	0.86	Install redundant relay/battery supply
BRIGHTN 115 kV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.73	0.65	Diverge	1.03	1.03	1.07	0.95	1.03	0.85	Install redundant relay/battery supply
GRAND IS 115 kV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.72	0.64	Diverge	1.03	1.03	1.07	0.94	1.03	0.84	Install redundant relay/battery supply
DEEPWATR 115 kV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.63	0.54	Diverge	1.03	1.03	1.07	0.93	1.03	0.80	Install redundant relay/battery supply
W.SCRMNO 115 kV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.64	0.55	Diverge	1.03	1.03	1.06	0.93	1.03	0.81	Install redundant relay/battery supply
DAVIS 115 kV	RIO OSO 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.60	0.52	Diverge	1.02	1.02	1.06	0.92	1.02	0.79	Install redundant relay/battery supply
HAMMER 60 kV	STAGG 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	0.55	0.46	NA	NA	1.05	NA	NA	0.87	Install redundant relay/battery supply
CNTRY CB 60 kV	STAGG 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	0.56	0.46	NA	NA	1.05	NA	NA	0.87	Install redundant relay/battery supply
MSHR 60V 60 kV	STAGG 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	0.62	0.56	NA	NA	1.05	NA	NA	0.89	Install redundant relay/battery supply
HAMMER 60 kV	STAGG 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	0.46	0.38	NA	NA	1.03	NA	NA	0.76	Install redundant relay/battery supply
CNTRY CB 60 kV	STAGG 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	0.46	0.37	NA	NA	1.03	NA	NA	0.76	Install redundant relay/battery supply
SHWSS 60 kV	STAGG 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	0.42	0.33	NA	NA	1.00	NA	NA	0.71	Install redundant relay/battery supply
MSHR 60V 60 kV	STAGG 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	0.54	0.50	NA	NA	1.03	NA	NA	0.79	Install redundant relay/battery supply
BRIGHTN 115 kV	STATION DC BATTERY SUPPLY BRIGHTON 230KV BATT	P5	Non-Redundant Battery/Relay	0.93	0.87	0.89	1.03	1.03	1.06	1.00	1.03	0.95	Install redundant relay/battery supply
W.SCRMNO 115 kV	STATION DC BATTERY SUPPLY BRIGHTON 230KV BATT	P5	Non-Redundant Battery/Relay	0.93	0.88	0.89	1.02	1.02	1.05	1.00	1.02	0.95	Install redundant relay/battery supply
DEEPWATR 115 kV	STATION DC BATTERY SUPPLY BRIGHTON 230KV BATT	P5	Non-Redundant Battery/Relay	0.92	0.87	0.88	1.02	1.02	1.05	0.99	1.02	0.94	Install redundant relay/battery supply

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	
DAVIS 115 kV	STATION DC BATTERY SUPPLY BRIGHTON 230KV BATT	P5	Non-Redundant Battery/Relay	0.94	0.89	0.89	1.02	1.02	1.05	1.00	1.02	0.96	Install redundant relay/battery supply
GRAND IS 115 kV	STATION DC BATTERY SUPPLY BRIGHTON 230KV BATT	P5	Non-Redundant Battery/Relay	0.92	0.87	0.88	1.03	1.03	1.06	0.99	1.03	0.94	Install redundant relay/battery supply
DAVIS 115 kV	STATION DC BATTERY SUPPLY ZAMORA 115KV BATT	P5	Non-Redundant Battery/Relay	0.95	0.92	0.90	1.02	1.02	1.07	0.99	1.02	0.97	Continue to monitor
WOODLD 115 kV	STATION DC BATTERY SUPPLY ZAMORA 115KV BATT	P5	Non-Redundant Battery/Relay	0.94	0.91	0.88	1.02	1.02	1.07	0.98	1.02	0.96	Continue to monitor
LOCKFORD 230.0 kV	BELLOTA-LOCKFORD 230KV and LOCKEFORD-BELLOTA 230KV	P6	N-1-1	> 0.9	> 0.9	0.89	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
DEEPWATR 115.0 kV	BRIGHTN-W.SCRMNO 115KV and WOODLAND-DAVIS 115KV	P6	N-1-1	0.87	0.82	0.82	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
W.SCRMNO 115.0 kV	BRIGHTN-W.SCRMNO 115KV and WOODLAND-DAVIS 115KV	P6	N-1-1	0.88	0.83	0.82	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
LODI 60.0 kV	LOCKFORD 230/60KV TB 2 and LOCKFORD 230/60KV TB 3	P6	N-1-1	> 0.9	0.82	0.58	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	0.92	Project: Mosher transmission project overload protection scheme.
LOCKEFRD 60.0 kV	LOCKFORD 230/60KV TB 2 and LOCKFORD 230/60KV TB 3	P6	N-1-1	> 0.9	0.82	0.59	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	0.93	Project: Mosher transmission project overload protection scheme.
GRAND IS 115.0 kV	LOCKFORD-BRIGHTON 230KV and RIO OSO-BRIGHTON 230KV	P6	N-1-1	> 0.9	0.87	0.84	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
BRIGHTON 230.0 kV	LOCKFORD-BRIGHTON 230KV and RIO OSO-BRIGHTON 230KV	P6	N-1-1	> 0.9	0.87	0.81	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
BRIGHTN 115.0 kV	LOCKFORD-BRIGHTON 230KV and RIO OSO-BRIGHTON 230KV	P6	N-1-1	> 0.9	0.87	0.85	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
E.NICOLS 115.0 kV	PALERMO-NICOLAUS 115KV MOAS OPENED ON E.MRY J2_E.NICOLS and RIO OSO-NICOLAUS 115KV	P6	N-1-1	> 0.9	> 0.9	0.79	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
E.MRYSV 115.0 kV	PALERMO-NICOLAUS 115KV MOAS OPENED ON PALERMO_E.MRY J2 and RIO OSO-NICOLAUS 115KV	P6	N-1-1	> 0.9	0.82	0.83	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
PLACER 60.0 kV	PLACER-GOLD HILL #1 115KV and PLACER-GOLD HILL #2 115KV	P6	N-1-1	> 0.9	0.86	0.56	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
HALSEY 60.0 kV	PLACER-GOLD HILL #1 115KV and PLACER-GOLD HILL #2 115KV	P6	N-1-1	> 0.9	0.86	0.55	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
BELL PGE 115.0 kV	PLACER-GOLD HILL #1 115KV and PLACER-GOLD HILL #2 115KV	P6	N-1-1	> 0.9	0.89	0.82	0.57	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
HIGGINS 115.0 kV	PLACER-GOLD HILL #1 115KV and PLACER-GOLD HILL #2 115KV	P6	N-1-1	> 0.9	0.85	0.63	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
PLACER 115.0 kV	PLACER-GOLD HILL #1 115KV and PLACER-GOLD HILL #2 115KV	P6	N-1-1	> 0.9	0.89	0.81	0.55	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support
ATLANTC 230.0 kV	RIO OSO-ATLANTIC 230KV and ATLANTIC-GOLD HILL 230KV	P6	N-1-1	> 0.9	> 0.9	0.83	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
PLSNT GR 115.0 kV	RIO OSO-ATLANTIC 230KV and ATLANTIC-GOLD HILL 230KV	P6	N-1-1	> 0.9	> 0.9	0.87	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
ATLANTIC 115.0 kV	RIO OSO-ATLANTIC 230KV and ATLANTIC-GOLD HILL 230KV	P6	N-1-1	> 0.9	> 0.9	0.86	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
LINCLN 115.0 kV	RIO OSO-ATLANTIC 230KV and RIO OSO-LINCLN-SPLINCOLN 115KV	P6	N-1-1	> 0.9	> 0.9	0.89	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
WOODLD 115.0 kV	RIO OSO-WOODLAND #1 115KV and RIO OSO-WOODLAND #2 115KV	P6	N-1-1	> 0.9	> 0.9	0.88	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Continue to monitor
CNTRY CB 60.0 kV	STAGG-TESLA 230KV and EIGHT MILE ROAD-STAGG 230KV	P6	N-1-1	> 0.9	> 0.9	0.32	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	0.50	Continue to monitor
HAMMER 60.0 kV	STAGG-TESLA 230KV and EIGHT MILE ROAD-STAGG 230KV	P6	N-1-1	> 0.9	> 0.9	0.33	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	0.50	Continue to monitor
SHWSS 60.0 kV	STAGG-TESLA 230KV and EIGHT MILE ROAD-STAGG 230KV	P6	N-1-1	> 0.9	> 0.9	0.29	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	0.45	Continue to monitor
MSHR 60V 60.0 kV	STAGG-TESLA 230KV and EIGHT MILE ROAD-STAGG 230KV	P6	N-1-1	> 0.9	> 0.9	0.47	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	0.60	Continue to monitor
STAGG-D 230.0 kV	STAGG-TESLA 230KV and EIGHT MILE ROAD-STAGG 230KV	P6	N-1-1	> 0.9	> 0.9	0.28	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	0.45	Continue to monitor
DAVIS 115.0 kV	W.SCRMNO-DAVIS 115KV and WOODLAND-DAVIS 115KV	P6	N-1-1	0.87	0.83	0.79	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	Operating solution or voltage support

No single contingency resulted in voltage deviation of more than 8%

In accordance with TPL-001-5- Requirement R2.6, this area relies on the past studies from the 2024-25 Transmission Planning Process for transient stability studies:

<https://stakeholdercenter.caiso.com/InitiativeDocuments/BoardApproved-AppendixC-2024-2025-TransmissionPlan.pdf>

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)									Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	

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

Substation	Load Served (MW)										Potential Mitigation Solutions
	2026 Summer Peak	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
AMES 115KV BUS TIE	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and MTN VIEW-MONTA VISTA 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	108	<100	<100	<100	<100	<100	Continue to monitor		
	MTN VIEW-MONTA VISTA 115KV and NEWARK-RAVENSWOOD 230KV	P6	N-1-1	<100	<100	<100	108	<100	<100	136	<100	<100	<100	<100	<100	Continue to monitor		
	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	5	6	101	Diverge	4	4	122	4	86	4	5	5	Install redundant battery supply		
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	5	6	89	108	4	4	109	4	76	4	5	5	Install redundant relay		
AMES B51-WHISMAN #1 115KV	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and LOS ESTEROS-METCALF 230KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	TESLA-RAVENSWOOD 230KV and TESLA-NEWARK #1 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	NEWARK D 230KV - SECTION 1D & 2D	P2	Breaker	60	57	Diverge	Diverge	41	36	94	59	94	68	61	82	Continue to monitor		
	Tesla-Newark No.1 and Tesla-Ravenwood 230 KV lines	P7	DCTL	59	51	80	Diverge	45	34	94	63	91	72	67	86	Continue to monitor		
	MTN VIEW-MONTA VISTA 115KV	P1	N-1	63	52	85	114	47	35	104	64	101	74	67	87	Continue to monitor		
	MT VIEW 115KV SECTION 1C	P2	Bus	63	52	85	114	47	35	104	64	101	74	67	87	Continue to monitor		
	MINTA VSA 115KV - MIDDLE BREAKER BAY 2	P2	Breaker	72	63	104	134	55	43	114	71	110	84	74	101	Continue to monitor		
	Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines	P7	DCTL	61	56	78	103	46	39	87	68	104	75	70	89	Continue to monitor		
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	64	55	78	111	46	33	96	59	90	74	63	88	Continue to monitor		
	Britton-Monta Vista & Lawrence-Monta Vista 115 KV Lines	P7	DCTL	64	63	98	119	48	45	111	60	102	75	63	97	Continue to monitor		
	Monta Vista-Jefferson 230 KV Lines No. 1 & 2	P7	DCTL	60	53	64	101	46	35	93	65	98	70	68	84	Continue to monitor		
	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	27	20	102	Diverge	10	4	82	5	72	31	7	42	Install redundant battery supply		
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	79	62	101	Diverge	50	39	109	70	100	83	72	93	Install redundant battery supply		
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	116	71	Diverge	148	149	Diverge	157	Diverge	Install redundant battery supply		
	RAVENSWOOD 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	73	66	92	110	47	42	88	64	101	79	67	93	Install redundant relay		
	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	81	74	100	Diverge	51	46	109	71	102	84	74	107	Install redundant relay		
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	104	Diverge	Diverge	115	69	Diverge	148	150	Diverge	156	Diverge	Install redundant relay		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	82	80	88	Diverge	48	51	Diverge	68	103	88	70	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	AMES B52-MT VIEW #1 115KV	TESLA-METCALF 500KV and MANNING - METCALF 500 KV	P6	N-1-1	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
		Metcalf - San Jose B HVDC Gen and WHISMAN-MONTA VISTA 115KV	P3	G-1/N-1	<100	<100	<100	112	<100	<100	113	<100	121	<100	<100	<100	Continue to monitor	
METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	111	70	Diverge	146	131	Diverge	154	Diverge	Install redundant battery supply		
MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)		P5	Non-Redundant Battery/Relay	Diverge	104	Diverge	Diverge	110	68	Diverge	145	132	Diverge	153	Diverge	Install redundant relay		
AMES DISTRIBUTION-AMES 115KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	68	65	63	Diverge	43	45	Diverge	57	91	78	58	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	TESLA-NEWARK #1 230KV and TESLA-RAVENSWOOD 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and NEWARK-RAVENSWOOD 230KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	123	<100	123	<100	<100	<100	Continue to monitor		
	NEWARK-RAVENSWOOD 230KV	P1	N-1	15	19	38	91	12	20	102	34	100	12	32	12	Continue to monitor		
	RVNSWD E 115KV - SECTION 2E & 1E	P2	Breaker	1	4	74	126	6	12	120	13	115	6	6	7	Continue to monitor		
	Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines	P7	DCTL	35	43	100	142	28	38	124	59	146	36	57	40	Continue to monitor		
	MTCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	30	19	Diverge	48	78	Diverge	50	Diverge	Install redundant battery supply		
	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	6	10	237	Diverge	7	13	224	16	205	3	14	3	Install redundant battery supply		
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery	Diverge	25	Diverge	Diverge	29	18	Diverge	48	94	Diverge	50	Diverge	Install redundant relay		
	RAVENSWOOD 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	41	51	120	Diverge	32	44	124	60	143	38	59	43	Install redundant relay		
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	2	7	210	258	7	11	202	11	182	6	11	7	Install redundant relay		
AMES DISTRIBUTION-PALO ALTO 115KV	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and NEWARK-RAVENSWOOD 230KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	111	<100	<100	<100	<100	<100	Continue to monitor		
	NEWARK-RAVENSWOOD 230KV and JEFFERSON-EGBERTSWSTA 230KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	122	<100	<100	<100	<100	<100	Continue to monitor		
	Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines	P7	DCTL	NA	NA	72	Diverge	NA	NA	114	NA	107	NA	NA	NA	Continue to monitor		
	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	146	Diverge	NA	NA	181	NA	133	NA	NA	NA	Install redundant battery supply		
	RAVENSWOOD 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	NA	86	Diverge	NA	NA	114	NA	106	NA	NA	NA	Install redundant relay		
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery	NA	NA	129	157	NA	NA	161	NA	116	NA	NA	NA	Install redundant relay		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	100	Diverge	NA	NA	Diverge	NA	29	NA	NA	NA	Project: Newark 230 KV DC Supply and Control Circuit		
A-X #1 115KV	A-Y #1 (UNDERGROUND IDLE) 115KV and A-P #1 115KV	P6	N-1-1	<100	<100	<100	111	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	POTRERO 115KV SECTION 1D	P2	Bus	76	78	88	103	71	76	92	74	64	72	74	70	Continue to monitor		
	POTRERO 115KV SECTION 2E	P2	Bus	73	76	88	115	51	47	76	55	42	70	54	69	Continue to monitor		
	POTRERO - 1D 115KV & A-Y #1 (UNDERGROUND IDLE) LINE	P2	Breaker	76	78	88	103	71	76	92	74	64	72	74	70	Continue to monitor		
	POTRERO - 2E 115KV & POTRERO-TBC POT1 #1 LINE	P2	Breaker	73	76	88	115	51	47	76	55	42	70	54	69	Continue to monitor		
	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	69	Diverge	88	0	71	Diverge	0	41	0	0	56	Install redundant battery supply		
	HUNTERS POINT (SF P) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	75	78	89	102	71	77	101	74	54	67	73	65	Install redundant battery supply		
A-Y #1 (UNDERGROUND IDLE) 115KV	K-Y #1 115KV and H-Y #1 115KV	P6	N-1-1	<100	<100	112	127	<100	<100	135	<100	<100	<100	<100	<100	Continue to monitor		
	COLLINSVILLE-TESLA 500KV and TABLE MT-TESLA 500KV	P6	N-1-1	<100	<100	<100	104	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	C.COSTAPPE 230KV - SECTION 1E & 2E	P2	Breaker	80	86	90	Diverge	35	40	77	63	65	78	57	85	Continue to monitor		
	Birds-CC PP 230 KV and Birds-CC Sub 230 KV lines	P7	DCTL	<100	80	88	102	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
BAHIA-MORAGA 230KV	PITTSBURG PP 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	58	77	Diverge	Diverge	31	29	75	48	37	59	51	77	Install redundant battery supply		
	CONTRA COSTA PP 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	85	90	102	Diverge	41	47	86	69	69	84	64	93	Install redundant battery supply		
	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery	87	92	105	Diverge	42	48	88	71	69	85	65	94	Install redundant relay		
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery	226	243	56	44	210	243	39	220	23	214	219	230	Project: Ravenswood 115 KV Redundant Bus Differential Relay		
BAIR 115/60KV TB 1	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	210	230	38	Diverge	213	241	17	216	20	208	217	197	Project: Ravenswood 230-115 KV DC Supply and Control Circuit		
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	139	146	42	40	121	128	36	133	23	129	133	135	Project: Ravenswood 115 KV Redundant Bus Differential Relay		
BAIR-BELMONT 115KV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	132	140	31	Diverge	118	124	23	128	9	124	129	124	Project: Ravenswood 230-115 KV DC Supply and Control Circuit		
	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and BAIR-REDWOOD-CLY LNDG 60KV	P3	G-1/N-1	<100	<100	<100	101	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
BAIR-CLY LNDG 60KV	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	244	250	31	1											

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
GASTRO VALLEY-NEWARK 230KV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	83	96	112	Diverge	74	87	127	66	71	78	68	103	Install redundant relay		
	NEWARK-APPLIED MATERIALS 115KV (NEWARK F-LCKHD J2)	P2	Line Section w/o Fault	76	105	112	122	84	111	145	74	83	70	74	96	Potential capacity increase. Contribution from large load under review.		
	NEWARK F 115KV SECTION 2F	P2	Bus	76	104	111	120	84	111	144	74	83	69	74	96	Potential capacity increase. Contribution from large load under review.		
	NEWARK F - 2F 115KV & NEWARK-NUMMI LINE	P2	Breaker	76	104	111	120	84	111	144	74	83	69	74	96	Potential capacity increase. Contribution from large load under review.		
	NEWARK F - 2F 115KV & NEWARK F-COMPONENT_SW LINE	P2	Breaker	NA	104	111	121	NA	111	144	NA	83	NA	NA	96	Potential capacity increase. Contribution from large load under review.		
	NEWARK F 115KV - SECTION 2F & 1F	P2	Breaker	76	106	112	123	84	111	147	74	84	70	74	97	Potential capacity increase. Contribution from large load under review.		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	92	110	170	Diverge	77	100	Diverge	66	76	87	67	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	Metcalf - San Jose B HVDC Gen and TESLA-NEWARK #2 230KV	P3	G-1/N-1	<100	<100	Diverge	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	NEWARK D SECTION 2D & NEWARK D SECTION 2E 230KV	P2	Breaker	72	83	99	Diverge	19	54	59	28	72	61	21	66	Continue to monitor		
	TESLA-NEWARK #2 230KV & PITTSBURG-TASSAJARA 230KV	P6	N-1-1	<100	<100	107	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
CASTRO VALLEY-NEWARK 230KV	TESLA-NEWARK #2 230KV	P1	N-1	66	71	89	100	16	42	48	26	61	58	21	58	Continue to monitor		
	NEWARK E 230KV SECTION 2E	P2	Bus	69	77	101	Diverge	17	46	52	26	63	61	21	60	Continue to monitor		
	NEWARK E - 2E 230KV & NEWARK E-TASSAJARA-RESEARCH LINE	P2	Breaker	70	77	102	Diverge	17	46	52	27	63	61	21	61	Continue to monitor		
	MORAGA E 115KV - SECTION 1E & 2E	P2	Breaker	63	68	91	105	16	45	55	28	69	54	21	54	Continue to monitor		
	C-COSTAPPO 230KV - SECTION 1D & 2D	P2	Breaker	80	82	81	110	16	44	50	34	77	68	25	62	Continue to monitor		
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	74	80	103	Diverge	22	47	59	33	68	66	28	67	Continue to monitor		
	Contra Costa-Las Positas 230 KV and North Dublin-Vineyard 230 KV lines	P7	DCTL	77	80	75	105	19	55	49	32	78	61	22	64	Continue to monitor		
	Contra Costa - Las Positas 230 KV and Contra Costa-Lonectree 230 KV lines	P7	DCTL	81	81	65	110	18	52	49	34	78	67	25	61	Continue to monitor		
	Contra Costa - Las Positas 230 KV and Lonectree - Cayetano 230 KV lines	P7	DCTL	79	80	77	110	18	53	49	34	79	66	24	62	Continue to monitor		
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery	Diverge	101	Diverge	Diverge	42	58	Diverge	66	101	Diverge	62	Diverge	Install redundant relay		
CHARCOTSWSTA-MONTAGUE #1 115KV	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and SWIFT-METCALF 115KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	LS (ESTRS-RINGWOODSWST #1 115KV and SWIFT-METCALF 115KV Los Esteros - Montague 115 KV and Montague - Trimble 115 KV	P6	N-1-1	<100	<100	130	152	<100	<100	145	<100	<100	<100	<100	<100	Continue to monitor		
	Swift - Metcalf & Piercy - Metcalf 115 KV Lines	P7	DCTL	NA	0	105	114	NA	0	105	NA	71	NA	NA	0	Continue to monitor		
	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	<100	<100	<100	111	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	CHARCOT-SANJOSEB 230KV and OLEUM-CHRISTIE 115KV	P6	N-1-1	<100	<100	<100	109	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	Base Case	P0	Base Case	75	86	107	119	42	48	85	74	41	49	74	56	Continue to monitor		
	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS	P1	N-1	66	76	95	107	42	48	85	66	36	43	66	49	Continue to monitor		
	CHRISTIE 115KV - RING R2 & R1	P2	Breaker	66	76	95	109	42	48	85	66	36	43	66	49	Continue to monitor		
	CHRISTIE 115KV - RING R2 & R3	P2	Breaker	66	76	95	109	42	48	85	66	36	43	66	49	Continue to monitor		
	CHRISTIE 115KV - RING R4 & R3	P2	Breaker	66	80	101	108	42	48	85	66	36	43	66	51	Continue to monitor		
CHRISTIE-FRANKLIN #2 60KV	CHRISTIE 115KV - RING R1 & R4	P2	Breaker	66	79	100	107	42	48	85	66	36	43	66	51	Continue to monitor		
	OLEUM 115KV - SECTION 1E & 1F	P2	Breaker	66	76	95	107	42	48	85	66	36	43	66	49	Continue to monitor		
	SOBRANTE 115KV - SECTION 1D & 2D	P2	Breaker	66	79	101	105	42	48	85	66	36	43	66	49	Continue to monitor		
	SOBRANTE 115KV - SECTION 2E & 2D	P2	Breaker	66	79	101	105	42	48	85	66	36	43	66	51	Continue to monitor		
	SOBRANTE 230KV - SECTION 1E & 2E	P2	Breaker	NA	76	98	108	NA	48	85	NA	36	NA	NA	49	Continue to monitor		
	Sobrante-G Nos. 1 & 2 115 KV lines	P7	DCTL	66	78	99	108	42	48	85	66	36	43	66	49	Continue to monitor		
	Pittsburg-Tidewater 230 KV and Pittsburg-Tesoro SW STA 230 KV lines	P7	DCTL	66	76	97	107	42	48	85	66	36	43	66	49	Continue to monitor		
	Pittsburg-Tidewater 230 KV and Tesoro SW STA-Sobrante 230 KV lines	P7	DCTL	66	76	97	107	42	48	85	66	36	43	66	49	Continue to monitor		
	Tidewater-Sobrante 230 KV and Tesoro SW STA-Sobrante 230 KV lines	P7	DCTL	66	76	97	107	42	48	85	66	36	43	66	49	Continue to monitor		
	Base Case	P0	Base Case	<100	86	108	120	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
CL #1 115KV	METCALF 115KV - SECTION 2E & 1E	P2	Breaker	<100	76	103	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	66	76	98	109	42	48	85	66	36	43	66	49	Install redundant battery supply		
	C-COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery	66	76	97	109	42	48	85	66	36	43	66	49	Install redundant relay		
	MORAGA 230KV BUS #1.8&2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	66	76	98	110	42	48	85	66	36	43	66	49	Project: Moraga 230 KV Redundant Bus Differential Relay		
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	66	78	100	109	42	48	85	66	36	43	66	51	Project: Moraga 230-115 KV DC Supply and Control Circuit		
	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	66	76	103	Diverge	42	48	85	66	36	43	66	49	Project: Pittsburg PP 230 KV Redundant Bus Differential Relay		
	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	71	124	134	160	42	53	106	66	36	43	66	66	Project: Sobrante 230-115 KV DC Supply and Control Circuit		
	SOBRANTE-G #1 115KV and SOBRANTE-G #2 115KV	P6	N-1-1	127	<100	<100	<100	<100	<100	<100	128	<100	<100	127	<100	Project: Christie - Sobrante 115 KV Line Reconnector		
	Sobrante-G Nos. 1 & 2 115 KV lines	P7	DCTL	127	<100	<100	94	97	63	78	128	40	85	127	88	Project: Christie - Sobrante 115 KV Line Reconnector		
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	144	235	272	Diverge	146	204	240	173	128	151	171	181	Project: Moraga 230-115 KV DC Supply and Control Circuit		
CL #1 115KV	OAKLAND-X 115KV - SECTION 2D & 1D	P2	Breaker	30	114	40	0	55	64	13	69	8	75	65	106	Project: North Oakland Reinforcement		
	CLAREMONT 115KV - SECTION 2D & 1D	P2	Breaker	96	107	1	13	95	103	42	93	12	79	92	89	Project: North Oakland Reinforcement		
	MORAGAD 115KV - SECTION 1D & 2D	P2	Breaker	35	102	58	47	53	84	12	65	18	60	68	56	Project: North Oakland Reinforcement		
	OAKLAND X 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	30	114	40	0	55	64	13	69	8	75	65	106	Project: North Oakland Reinforcement		
	CLAREMONT (OAKLAND K) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	96	107	1	13	95	103	42	93	12	79	92	89	Project: North Oakland Reinforcement		
	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and LAKEWOOD-CLAYTON 115KV	P3	G-1/N-1	<100	<100	115	123	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	PITTSBURG-SAN RAMON 230KV and LAKEWOOD-CLAYTON 115KV	P6	N-1-1	<100	<100	121	127	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	LAKEWOOD-CLAYTON 115KV	P1	N-1	60	81	111	117	49	48	74	56	15	31	58	44	Continue to monitor		
	BAIR 115/60KV TB 1 and CLY LND2 115/60KV TB 2	P6	N-1-1	<100	<100	<100	111	<100	<100	114	<100	<100	<100	<100	<100	Continue to monitor		
	BAIR 115/60KV TB 1 and CLY LND2 115/60KV TB 1	P6	N-1-1	<100	<100	<100	113	<100	<100	114	<100	<100	<100	<100	<100	Continue to monitor		
CONTRA COSTA 230KV BUS TIE	C-COSTAPPE SECTION 2E & C-COSTAPPE SECTION 2F 230KV	P2	Breaker	90	98	111	109	26	30	53	61	82	74	52	68	Continue to monitor		
	C-COSTAPPE 230KV SECTION 2E	P2	Bus	<100	91	15	101	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	C-COSTAPPE - 2E 230KV & BVSTAWANDN1-DELTAAMP-C-COSTAPPE LINE	P2	Breaker	<100	91	16	101	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	C-COSTAPPE 230KV SECTION 1E	P2	Bus	91	101	8	116	29	26	53	66	76	78	58	74	Continue to monitor		
	C-COSTAPPE - 1E 230KV & ROSSMOOR-MORAGA-C-COSTAPPE LINE	P2	Breaker	91	101	8	116	29	26	53	66	76	78	58	74	Continue to monitor		
	C-COSTAPPE SECTION 1E & C-COSTAPPE SECTION 1F 230KV	P2	Breaker	0	100	8	113											

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)											Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	65	73	121	Diverge	43	51	Diverge	62	35	41	62	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	77	81	94	113	65	73	99	89	35	53	89	55	Project: Ravenswood 115 KV Redundant Bus Differential Relay		
	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	84	89	103	Diverge	58	66	83	92	37	61	93	60	Project: Ravenswood 230-115 KV DC Supply and Control Circuit		
	SAN MATEO 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	73	90	107	43	51	97	62	Diverge	41	62	45	Project: San Mateo 230-115-60 KV DC Supply and Control Circuit		
CP LCECF-LS ESTRS #1 115KV	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and CP LCECF-LS ESTRS #2 115KV	P3	G-1/N-1	<100	<100	<100	102	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	CHARCOT-SANJOSE 230KV and CP LCECF-LS ESTRS #2 115KV	P6	N-1-1	<100	<100	<100	104	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
CP LCECF-LS ESTRS #2 115KV	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and CP LCECF-LS ESTRS #1 115KV	P3	G-1/N-1	<100	<100	<100	102	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	CHARCOT-SANJOSE 230KV and CP LCECF-LS ESTRS #1 115KV	P6	N-1-1	<100	<100	<100	104	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
C X #2 115KV	CLAREMONT (OAKLAND K) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	74	125	42	9	91	99	27	95	17	91	92	110	Install redundant battery supply		
	CLARIMONT 115KV - SECTION 2D & 1D	P2	Breaker	74	125	42	9	91	99	27	95	17	91	92	110	Project: North Oakland Reinforcement		
	MORAGA-CLAREMONT #2 115KV and C X #3 115KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Sensitivity only		
	MORAGA.C 115KV - SECTION 1C & 2C	P2	Breaker	49	76	40	5	51	61	33	63	22	55	53	106	Sensitivity only		
DIXON LD-MOKEE-MABURY 115KV	H-2 #2 230KV and PIERCY-METCALF 115KV	P6	N-1-1	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	49	37	Diverge	81	74	Diverge	79	Diverge	Install redundant battery supply		
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	73	123	166	Diverge	35	78	116	57	61	46	57	92	Install redundant battery supply		
	MTCAIF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	87	Diverge	Diverge	49	39	Diverge	80	33	Diverge	79	Diverge	Install redundant relay		
	MTCAIF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	74	125	165	Diverge	35	78	116	57	61	46	57	93	Install redundant relay		
	Metcalf - San Jose B HVDC Gen and PIERCY-METCALF 115KV	P3	G-1/N-1	<100	124	Diverge	Diverge	<100	<100	117	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.		
	PIERCY-METCALF 115KV	P1	N-1	71	122	154	176	34	78	112	57	61	45	56	90	Potential capacity increase. Contribution from large load under review.		
	METCALFE 115KV SECTION 2E	P2	Bus	71	122	155	181	35	78	112	57	61	45	57	90	Potential capacity increase. Contribution from large load under review.		
	METCALFE - 2E 115KV & METCALFE-METCALFE LINE	P2	Breaker	71	122	156	Diverge	35	78	112	57	61	45	57	91	Potential capacity increase. Contribution from large load under review.		
	METCALFE - 2E 115KV & METCALFE-METCALFE LINE (2)	P2	Breaker	71	122	156	170	35	78	112	57	61	45	57	91	Potential capacity increase. Contribution from large load under review.		
	METCALFD SECTION 2D & METCALFE SECTION 2E 115KV	P2	Breaker	71	122	156	Diverge	35	78	113	57	61	45	57	91	Potential capacity increase. Contribution from large load under review.		
	METCALFE 115KV - SECTION 2E & 1E	P2	Breaker	NA	123	Diverge	Diverge	NA	78	114	NA	61	NA	NA	NA	92	Potential capacity increase. Contribution from large load under review.	
DUMBARTON-NEWARK 115KV	Swift - Metcalf & Piercy - Metcalf 115 KV Lines	P7	DTCL	71	123	157	Diverge	35	78	113	57	61	45	57	91	Potential capacity increase. Contribution from large load under review.		
	E. SHORE 230/115KV TB 1 and E. SHORE 230/115KV TB 2	P6	N-1-1	100	<100	110	127	<100	<100	119	<100	<100	<100	<100	<100	Continue to monitor		
	MORAGA.E 115KV - SECTION 1E & 2E	P2	Breaker	18	43	50	110	28	49	87	65	32	10	64	60	Install redundant battery supply		
	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	99	179	108	Diverge	68	150	116	65	52	48	67	182	Install redundant battery supply		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	63	57	129	Diverge	27	31	Diverge	9	37	68	9	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	<100	108	<100	155	<100	104	<100	<100	<100	<100	<100	<100	Project: San Jose area HVDC line		
	Q1552BESS .048KV GEN UNIT 1 and E. SHORE 230/115KV TB 2	P3	G-1/N-1	<100	107	132	116	<100	<100	<100	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.		
	E. SHORE 230/115KV TB 2 and EASTSHORE-SAN MATEO 230KV	P6	N-1-1	116	<100	148	<100	102	<100	143	<100	<100	104	<100	<100	Potential capacity increase. Contribution from large load under review.		
	E. SHORE 230/115KV TB 2	P1	N-1	77	108	134	118	72	92	106	35	56	64	36	100	Potential capacity increase. Contribution from large load under review.		
	EASTSHRE 115KV SECTION ME	P2	Bus	55	92	100	103	62	89	100	37	53	45	39	92	Potential capacity increase. Contribution from large load under review.		
	MORAGA.E 115KV - SECTION 1E & 2E	P2	Breaker	67	88	108	Diverge	62	83	111	41	56	55	42	75	Potential capacity increase. Contribution from large load under review.		
	E. SHORE 230/115KV TB 1	E. SHORE 230KV - MIDDLE BREAKER BAY 3	P2	Breaker	77	108	133	118	72	92	105	35	56	65	36	100	Potential capacity increase. Contribution from large load under review.	
MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	57	80	104	Diverge	54	70	94	32	48	48	32	74	Project: Moraga 230-115 KV DC Supply and Control Circuit		
Q1552BESS .048KV GEN UNIT 1 and E. SHORE 230/115KV TB 1		P3	G-1/N-1	<100	106	131	115	<100	<100	<100	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.		
EASTSHORE-SAN MATEO 230KV and E. SHORE 230/115KV TB 1		P6	N-1-1	116	<100	147	117	102	<100	143	<100	<100	104	<100	<100	Potential capacity increase. Contribution from large load under review.		
E. SHORE 230/115KV TB 1		P1	N-1	77	107	132	117	71	91	106	35	56	64	36	100	Potential capacity increase. Contribution from large load under review.		
EASTSHRE 115KV SECTION MD		P2	Bus	76	105	132	117	69	88	103	34	55	63	34	96	Potential capacity increase. Contribution from large load under review.		
MORAGA.E 115KV - SECTION 1E & 2E		P2	Breaker	66	85	106	Diverge	61	80	112	41	56	55	41	72	Potential capacity increase. Contribution from large load under review.		
E. SHORE 230KV - MIDDLE BREAKER BAY 2		P2	Breaker	76	107	132	117	71	91	105	35	56	64	36	100	Potential capacity increase. Contribution from large load under review.		
MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	56	77	102	Diverge	53	67	95	32	48	48	32	69	Project: Moraga 230-115 KV DC Supply and Control Circuit		
Metcalf - San Jose B HVDC Gen and MARTIN-EAST GRAND 115KV		P3	G-1/N-1	<100	<100	107	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
SAN MATEO-MARTIN 230KV and POTRERO-TBC_POT1 #1 115KV		P6	N-1-1	<100	<100	<100	<100	<100	<100	107	<100	<100	<100	<100	<100	Continue to monitor		
EAST GRAND-SAN MATEO 115KV		Base Case	P0	Base Case	46	45	54	68	40	53	102	47	76	41	44	37	Continue to monitor	
	MARTIN-EAST GRAND 115KV	P1	N-1	50	63	101	95	48	58	107	47	69	43	47	54	Continue to monitor		
	C 115KV - MIDDLE BREAKER BAY 5	P2	Breaker	50	63	100	94	48	58	107	47	69	43	47	54	Continue to monitor		
	Martin-East Grand No. 2 115 KV and San Mateo-Martin No. 3 115 KV lines	P7	DTCL	50	63	101	95	49	58	107	47	69	43	47	54	Continue to monitor		
	Martin-East Grand 115 KV and San Mateo-Martin No. 6 115 KV lines	P7	DTCL	50	63	101	95	49	58	107	47	69	43	47	54	Continue to monitor		
	TESLA-NEWARK #2 230KV and MARTIN-EAST GRAND 115KV	P6	N-1-1	<100	<100	128	121	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	SAN MATEO-MARTIN 230KV	P1	N-1	55	61	66	79	47	62	102	54	85	50	52	52	Continue to monitor		
	JEFFERSON-EGBERTSWSTA 230KV	P1	N-1	NA	58	63	77	NA	59	101	NA	83	NA	NA	54	Continue to monitor		
	POTRERO-TBC_POT1 #1 115KV	P1	N-1	62	67	75	85	56	68	104	62	90	59	61	62	Continue to monitor		
	SAN MATEO-MARTIN 230KV (2)	P1	N-1	NA	61	66	79	NA	62	102	NA	85	NA	NA	52	Continue to monitor		
	POTRERO 115KV SECTION 2E	P2	Bus	62	67	75	85	56	69	104	62	91	59	60	62	Continue to monitor		
	EST GRND 115KV - MIDDLE BREAKER BAY 3	P2	Breaker	56	74	112	105	54	69	117	53	86	52	53	68	Continue to monitor		
EGBERTSWSTA-EMBOBCORD 230KV	POTRERO - 2E 115KV & POTRERO-TBC_POT1 #1 LINE	P2	Breaker	62	67	75	85	56	69	104	62	91	59	60	62	Continue to monitor		
	MONTAVIS 230KV - SECTION 1E & 2E	P2	Breaker	56	63	70	85	50	63	108	58	86	53	56	58	Continue to monitor		
	San Mateo-Martin No. 3 115 KV and SF Airport-San Mateo No. 5 115 KV lines	P7	DTCL	54	59	64	78	46	62	103	54	88	50	52	51	Continue to monitor		
	San Mateo-Martin No. 3 115 KV and San Mateo-Burlingame No. 4 115 KV lines	P7	DTCL	53	58	63	76	45	60	101	53	86	49	51	50	Continue to monitor		
	San Mateo-Martin No. 6 115 KV and SF Airport-San Mateo 115 KV lines	P7	DTCL	53	59	64	77	46	62	102	54	88	50	51	51	Continue to monitor		
	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery	51	64	107	105	49	59	130	47	70	44	47	55	Continue to monitor		
	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	55	61	70	Diverge	48	62	107	56	84	51	54	56	Continue to monitor		
	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	51	63	Diverge	102	49	58	Diverge	47	69	44	47	55	Project: Martin (SF H) 230-115-60 KV DC Supply and Control Circuit		
	MTCAIF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	63	Diverge	80	51	58	Diverge	57	84	Diverge	56	Diverge	Project: Metcalf 230 KV Redundant Bus Differential Relay		
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery	Diverge														

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)												Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast				
Overloaded Facility	SN JSE A 115KV SECTION 1F	P2	Bus	10	61	56	57	6	97	77	8	71	8	8	105	Sensitivity only			
	SANJOSEB 115KV - MIDDLE BREAKER BAY 4	P2	Breaker	NA	61	56	57	NA	97	77	NA	71	NA	NA	105	Sensitivity only			
	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	13	61	57	59	7	97	77	10	71	10	10	107	Sensitivity only			
EVERGREEN-ALMADEN 60KV	SILVERCRKSS-METCALFE #2 115KV and SAN JOSE B-STONE-EVERGREEN 115KV	P6	N-1-1	<100	<100	111	130	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
	Base Case	P0	Base Case	76	82	104	113	25	29	56	60	26	51	60	54	Continue to monitor			
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS	P1	N-1	67	73	84	104	25	29	56	53	23	45	53	48	Continue to monitor			
	Metcalf - San Jose B HVDC Gen	P1	N-1	NA	73	93	100	N/A	29	58	NA	23	NA	NA	45	Continue to monitor			
	SAN JOSE B-STONE-EVERGREEN 115KV	P1	N-1	67	73	96	108	25	29	56	53	23	45	53	48	Continue to monitor			
	CHARCOT-SANJOSE 230KV	P1	N-1	NA	73	92	105	NA	29	56	NA	23	NA	NA	48	Continue to monitor			
	SAN JOSE B-STONE-EVERGREEN 115KV (MARKHIM J-EVRGRN 1)	P2	Line Section w/o Fault	67	73	96	108	25	29	56	53	23	45	53	48	Continue to monitor			
	SAN JOSE B-STONE-EVERGREEN 115KV (SANJOSE-MARKHIM J)	P2	Line Section w/o Fault	67	73	96	108	NA	29	56	NA	23	NA	NA	48	Continue to monitor			
	NEWARK D 230KV SECTION 1D	P2	Bus	67	73	102	Diverge	25	29	56	53	23	45	53	48	Continue to monitor			
	EVGRIN 1 115KV SECTION 1D	P2	Bus	67	73	98	112	25	29	56	53	23	45	53	48	Continue to monitor			
	EVGRIN 1 - 1D 115KV & SAN JOSE B-STONE-EVERGREEN LINE	P2	Breaker	67	73	98	111	25	29	56	53	23	45	53	48	Continue to monitor			
	SANJOSEB 115KV - MIDDLE BREAKER BAY 2	P2	Breaker	NA	73	96	108	NA	29	56	NA	23	NA	NA	48	Continue to monitor			
	NEWARK E 230KV - SECTION 1E & 2E	P2	Breaker	67	73	93	100	Diverge	25	29	56	53	23	45	53	48	Continue to monitor		
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	67	73	96	104	25	29	56	53	23	45	53	48	Continue to monitor			
	Metcalf - Evergreen #1 and #2 115 KV Lines Evergreen Direction	P7	DCTL	NA	75	102	115	NA	29	59	NA	23	NA	NA	48	Continue to monitor			
	Metcalf - Evergreen #1 and #2 115 KV Lines Metcalf Direction	P7	DCTL	NA	75	102	115	NA	29	59	NA	23	NA	NA	48	Continue to monitor			
	South - Metcalf & Piercy - Metcalf 115 KV Lines	P7	DCTL	73	73	92	103	25	29	56	53	23	45	53	48	Continue to monitor			
	SAN JOSE B-STONE-EVERGREEN 115KV and SILVERCRKSS-METCALFE #1 115KV	P5	N-1-1	<100	<100	111	130	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	67	73	96	103	25	29	56	53	23	45	53	48	Install redundant battery supply			
	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	67	75	98	114	25	29	56	53	23	45	53	48	Install redundant battery supply			
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	78	76	115	Diverge	25	29	61	53	23	51	53	51	Install redundant battery supply			
	POTREBO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	67	73	94	105	25	29	56	53	23	45	53	48	Install redundant battery supply			
	METCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	82	80	114	Diverge	25	29	61	55	23	53	55	54	Install redundant relay			
	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	67	73	95	104	25	29	56	53	23	45	53	48	Install redundant relay			
	POTREBO 115KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	67	73	94	103	25	29	56	53	23	45	53	48	Install redundant relay			
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	71	76	115	Diverge	25	29	Diverge	53	23	48	53	Diverge	Project: Newark 230 KV DC Supply and Control Circuit			
	Metcalf - San Jose B HVDC Gen and MONTA VISTA-LOS GATOS 60KV	P3	G-1/N-1	<100	<100	120	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
	MONTA VISTA-LOS GATOS 60KV	P1	N-1	78	87	111	127	41	46	85	61	28	51	61	55	Continue to monitor			
	EVGRIN 1-SILVERCRKSS #2 115KV and SAN JOSE B-STONE-EVERGREEN 115KV	P6	N-1-1	<100	<100	102	117	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
	EVGRIN 1-SILVERCRKSS #1 115KV and SAN JOSE B-STONE-EVERGREEN 115KV	P6	N-1-1	<100	<100	102	117	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
EVGRIN 1 115KV SECTION 1D	P2	Bus	NA	29	89	104	NA	4	61	NA	20	NA	NA	8	Continue to monitor				
EVGRIN 1 - 1D 115KV & SAN JOSE B-STONE-EVERGREEN LINE	P2	Breaker	NA	29	89	104	NA	4	61	NA	20	NA	NA	8	Continue to monitor				
RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and NRS T1	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor				
CHARCOT-SANJOSE 230KV and PIERCY-METCALF 115KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	109	<100	<100	<100	<100	<100	Continue to monitor				
CHARCOT-SANJOSE 230KV	P1	N-1	NA	42	73	103	NA	54	100	NA	54	NA	NA	43	Continue to monitor				
CHARCOTCS 230KV SECTION B2	P2	Bus	NA	42	73	103	NA	54	100	NA	54	NA	NA	43	Continue to monitor				
CHARCOTCS 230KV SECTION 1E	P1	N-1	NA	42	73	103	NA	54	100	NA	54	NA	NA	43	Continue to monitor				
GREENVALLEY-MRGN HL #1 115KV and METCALF-MORGAN HILL 115KV	P6	N-1-1	<100	<100	151	167	<100	<100	108	<100	<100	<100	<100	<100	Continue to monitor				
GRANT-EASTSHORE #1 115KV	MORAGAE 115KV - SECTION 1E & 2E	P2	Breaker	83	99	113	Diverge	77	90	137	72	56	66	72	79	Continue to monitor			
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and GRANT-EASTSHORE #2 115KV (2)	P3	G-1/N-1	<100	134	<100	105	<100	156	<100	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.			
	MORAGA-OAKLAND 115KV and GRANT-EASTSHORE #2 115KV (2)	P6	N-1-1	<100	134	<100	<100	<100	156	<100	<100	<100	<100	<100	<100	142	Potential capacity increase. Contribution from large load under review.		
GRANT-EASTSHORE #2 115KV	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	60	78	106	Diverge	62	59	100	52	35	51	51	71	Project: Moraga 230-115 KV DC Supply and Control Circuit			
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and GRANT-EASTSHORE #1 115KV	P3	G-1/N-1	<100	135	<100	104	<100	126	<100	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.			
	MORAGA-OAKLAND 115KV and GRANT-EASTSHORE #1 115KV	P6	N-1-1	<100	134	<100	<100	<100	126	<100	<100	<100	<100	<100	<100	107	Potential capacity increase. Contribution from large load under review.		
GRANT-EASTSHORE #2 115KV (2)	MORAGAE 115KV - SECTION 1E & 2E	P2	Breaker	80	95	109	Diverge	74	84	129	69	51	63	69	73	Continue to monitor			
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	58	76	102	Diverge	59	54	94	49	30	49	48	65	Project: Moraga 230-115 KV DC Supply and Control Circuit			
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and GRANT-EASTSHORE #1 115KV	P3	G-1/N-1	<100	135	<100	104	<100	155	<100	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.			
GRANT-EASTSHORE #2 115KV (2)	MORAGA-OAKLAND 115KV and GRANT-EASTSHORE #1 115KV	P6	N-1-1	<100	134	<100	<100	<100	155	<100	<100	<100	<100	<100	<100	139	Potential capacity increase. Contribution from large load under review.		
	MORAGAE 115KV - SECTION 1E & 2E	P2	Breaker	80	95	109	Diverge	85	113	159	81	81	63	81	105	Continue to monitor			
	Moraga-Oakland 115 KV and San Leandro-Oakland J #1 115 KV lines	P7	DCTL	53	65	73	82	63	89	120	62	70	44	62	82	Continue to monitor			
GRANT-OAKLAND-J-EDES 115KV	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	58	76	102	Diverge	71	83	124	62	62	49	61	98	Project: Moraga 230-115 KV DC Supply and Control Circuit			
	Keller BESS Gen Unit and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
	NORTH DUBLIN-CAYTANO 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
GREEN VALLEY - MOSSLANDING 115 KV LINE	NEWARK D 230KV - SECTION 1D & 2D	P2	Breaker	39	54	Diverge	Diverge	9	12	78	40	65	30	36	61	Continue to monitor			
	MEC CTG1 18.00KV & MEC CTG2 18.00KV & MEC STG1 18.00KV GEN UNITS and RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
	MANNING - METCALF 500 KV and TESLA-RAVENSWOOD 230KV	P0	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor			
	Base Case	P6	Base Case	27	39	74	108	5	21	49	27	49	20	24	42	Continue to monitor			
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS	P1	N-1	24	39	84	125	16	11	68	23	69	27	29	60	Continue to monitor			
	TESLA-NEWARK #2 230KV	P1	N-1	27	39	72	108	1	23	53	27	46	21	24	42	Continue to monitor			
	MORAGA-CASTRO VALLEY 230KV	P1	N-1	NA	39	73	105	NA	25	53	NA	50	NA	NA	41	Continue to monitor			
	PITTSBURG-SAN MATED 230KV	P1	N-1	27	38	71	109	1	24	53	27	47	17	24	39	Continue to monitor			
	RUSCTYECS1 18/230KV TB 1	P1	N-1	30	39	72	104	6	27	54	23	54	24	20	46	Continue to monitor			
	NEWARK E 230KV SECTION 2E	P2	Bus	29	41	77	116	1	25	56	28	48	23	25	44	Continue to monitor			
	NEWARK E - 2E 230KV & NEWARK E-TASSAJARA-RESEARCH LINE	P2	Breaker	29	41	77	117	1	25	56	28	48	23	25	44	Continue to monitor			
	MORAGAE 115KV - SECTION 1E & 2E	P2	Breaker	83	97	112	Diverge	62	71	108	67	71	68	72	72	Continue to monitor			
	PITTSBURG-D SECTION 1D & PITTSBURG-E SECTION 1E 230KV	P2	Breaker	41	28	109	122	6	15	81	44	61	24	41	52	Continue to monitor			
	Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines	P7	DCTL	38	48	80	115	11	35	57	45	61	35	41	56	Continue to monitor			
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	29	40	76	113	1	24	56	28	48	23	25	45	Continue to monitor			
	Contra Costa-Las Positas 230 KV and North Dublin-Vineyard 230 KV lines	P7	DCTL	32	43	68	111	1	29	54	30	54	23	25	46	Continue to monitor			
	Contra Costa - Las Positas 230 KV and Contra Costa-Lonetree 230 KV lines	P7	DCTL	33	43	64	111	1	28	54	30	54	25	26	44	Continue to monitor			
	Contra Costa - Las Positas 230 KV and Lonetree - Cayetano 230 KV lines	P7	DCTL	33	43	69	111	1	28	54	30	54	25	26	45	Continue to monitor			
	Base Case	P0	Base Case	39	75	111	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	Pittsburg-San Mated 230 KV and Pittsburg-East Shore 230 KV lines	P7	DCTL	<100	26	100	113	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	PITTSBURG-D SECTION 1D & PITTSBURG-E SECTION 1E 230KV	P2	Breaker	<100	32	95	103	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	23	35	Diverge	58	62	Diverge	56	Diverge	Install redundant battery supply			
	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	36	53	144	Diverge	41	42	117	43	89	55	41	50	Install redundant battery supply			
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	38	Diverge	Diverge	23	35	Diverge	58	76	Diverge	56	Diverge	Install redundant relay			
	RAVENSWOOD 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5																	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
LAWRENCE-MONTA VISTA 115KV	Whisman-Mountain View & Mountain View-Ames 115 KV Lines	P7	DCTL	NA	80	102	114	NA	35	76	NA	57	NA	NA	103	Continue to monitor	
	Swift - Metcalf & Piercy - Metcalf 115 KV Lines	P7	DCTL	67	90	108	115	45	44	73	52	48	66	54	102	Continue to monitor	
	Metcalf - San Jose B HVDC Gen and BRITTON-MONTA VISTA 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	118	<100	<100	<100	<100	<100	Continue to monitor	
	WHISMAN-MONTA VISTA 115KV and MTN VIEW-MONTA VISTA 115KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	122	<100	<100	<100	<100	<100	Continue to monitor	
	P1 NEWARK F-LAWRENCE-LOCHOD 115KV	P1	N-1	36	56	63	67	34	97	113	31	88	32	32	51	Continue to monitor	
	LOS ESTEROS-METCALF 230KV	P1	N-1	47	57	69	74	39	74	108	36	74	47	37	68	Continue to monitor	
	Newark - Lawrence 115 KV and Newark - Applied Materials 115 KV	P7	DCTL	36	56	63	67	34	97	113	31	88	32	32	51	Continue to monitor	
	APPLIED MATERIALS 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	70	88	106	112	48	44	75	51	50	71	53	103	Install redundant battery supply	
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	89	101	134	Diverge	56	52	93	67	61	85	69	116	Install redundant battery supply	
	LOS ESTEROS 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	78	87	109	Diverge	53	43	76	58	50	75	60	103	Install redundant battery supply	
LAWRENCE-MONTA VISTA 115KV	NEWARK 115 KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	82	135	153	172	61	120	165	70	137	76	70	141	Install redundant relay	
	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	91	109	134	Diverge	57	56	92	68	62	87	70	126	Install redundant relay	
	NEWARK-LAWRENCE 115KV (NEWARK F-LOCHD 11)	P2	Line Section w/o Fault	81	133	153	170	61	120	163	70	137	75	70	140	Potential capacity increase. Contribution from large load under review.	
	NEWARK F 115KV SECTION 1F	P2	Bus	81	133	153	168	60	120	162	70	137	75	70	140	Potential capacity increase. Contribution from large load under review.	
	NEWARK F 115KV SECTION 2Z	P2	Bus	112	113	137	136	64	60	86	69	60	106	70	125	Potential capacity increase. Contribution from large load under review.	
	NEWARK F - 1F 115KV & NEWARK F-ZANKER-KRS LINE	P2	Breaker	81	133	153	170	60	120	162	70	137	75	70	140	Potential capacity increase. Contribution from large load under review.	
	NEWARK F - 1F 115KV & NEWARK-MILPITAS #1 LINE	P2	Breaker	81	133	153	168	60	120	162	70	137	75	70	140	Potential capacity increase. Contribution from large load under review.	
	NEWARK F 115KV - SECTION 2F & 1F	P2	Breaker	81	134	153	171	61	121	164	70	137	75	70	141	Potential capacity increase. Contribution from large load under review.	
	NEWARK E SECTION 1E & NEWARK F SECTION 1F 115KV	P2	Breaker	81	133	153	170	61	120	163	70	137	75	70	140	Potential capacity increase. Contribution from large load under review.	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	102	128	204	Diverge	60	70	Diverge	67	68	99	68	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
LIVERMORE-LAS POSITAS 60KV	NEWARK E&F 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	36	56	61	67	34	97	112	31	88	32	32	51	Project: Newark Bus E&F 115 KV DC Supply and Control Circuit	
	NEWARK D 230KV - SECTION 1D & 2D	P2	Breaker	91	95	Diverge	Diverge	48	74	96	68	79	64	54	89	Continue to monitor	
LAGAS - MORGAN HILL 115 KV LINE	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	103	109	114	Diverge	53	85	Diverge	73	86	74	59	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT3 15.00KV GEN UNITS and GARUCXWSTA-LAGAS #1 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Continue to monitor	
LAGAS-GILROY F-GILROYENG-GILROYKV 115KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	78	78	100	Diverge	62	62	Diverge	75	74	78	75	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
LONE TREE-CAYETANO 230KV	MCC CTG1 18.00KV & MCC CTG2 18.00KV & MCC STG1 18.00KV GEN UNITS and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	TESLA-METCALF 500KV and MANNING - METCALF 500 KV	P6	N-1-1	<100	<100	Diverge	Diverge	<100	<100	101	<100	<100	<100	<100	<100	Continue to monitor	
	LAGAS 2-25 25.00KV GEN UNIT V8 and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	Diverge	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	TESLA-NEWARK #2 230KV	P1	N-1	87	93	104	35	61	94	54	70	80	49	57	78	Continue to monitor	
	CONTRA COSTA-LAS POSITAS 230KV	P1	N-1	NA	91	81	105	NA	67	100	NA	79	NA	NA	58	Continue to monitor	
	NEWARK E 230KV SECTION 2E	P2	Bus	93	90	96	110	35	62	96	53	71	80	49	59	Continue to monitor	
	NEWARK E - 2E 230KV & NEWARK E-TASSAJAR-RESEARCH LINE	P2	Breaker	94	90	96	110	35	62	96	53	71	80	49	58	Continue to monitor	
	C.COSTAPPO - 1D 230KV & MARSHOLD-1-COSTAPPO #1 LINE	P2	Breaker	95	91	75	103	32	58	91	57	79	82	50	58	Continue to monitor	
	NEWARK E 230KV - SECTION 1E & 2E	P2	Breaker	94	95	102	Diverge	34	65	101	53	75	81	49	61	Continue to monitor	
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	98	93	100	Diverge	39	64	102	58	75	85	53	64	Continue to monitor	
LONE TREE-CAYETANO 230KV	Tesla - Newark No.2 and Newark - Los Esteros 230 KV Lines	P7	DCTL	90	87	92	104	34	60	94	53	69	77	49	57	Continue to monitor	
	Base Case	P0	Base Case	<100	85	93	101	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	TESLA-NEWARK #2 230KV and CONTRA COSTA-LAS POSITAS 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	124	<100	<100	<100	<100	<100	Continue to monitor	
	Base Case	P0	Base Case	94	87	94	118	39	72	97	71	92	79	55	69	Continue to monitor	
	Q1349BESS - 0.55KV GEN UNIT 2	P1	N-1	NA	85	88	112	NA	72	94	NA	67	NA	NA	61	Continue to monitor	
	LAS POSITAS-NEWARK 230KV	P1	N-1	91	85	89	114	40	77	101	68	91	76	51	68	Continue to monitor	
	TESLA-NEWARK #1 230KV	P1	N-1	92	86	93	117	44	75	102	72	87	80	58	73	Continue to monitor	
	ROSSMOOR-MORAGA-C.COSTAPPE 230KV	P1	N-1	89	80	90	111	41	75	108	68	87	73	52	66	Continue to monitor	
	NEWARK D 230KV SECTION 1D	P2	Bus	98	92	97	Diverge	46	81	108	74	94	85	58	78	Continue to monitor	
	LS PSTAS 230KV SECTION 1D	P2	Bus	96	90	83	121	43	80	107	71	93	80	55	72	Continue to monitor	
LONE TREE-CAYETANO 230KV	NEWARK D SECTION 1D & NEWARK E SECTION 1E 230KV	P2	Breaker	95	91	Diverge	Diverge	43	81	107	72	95	82	56	76	Continue to monitor	
	MORAGA 230KV - SECTION 2D & 2E	P2	Breaker	NA	89	96	119	NA	79	106	NA	92	NA	NA	71	Continue to monitor	
	Castro Valley-Newark 230 KV and Tassajar-Newark 230 KV lines	P7	DCTL	87	82	90	112	37	72	95	63	86	74	48	64	Continue to monitor	
	Vaca-Prebody 230 KV and Vaca-Lambie SW STA 230 KV lines	P7	DCTL	86	75	82	95	40	81	101	68	96	63	46	56	Continue to monitor	
	Base Case	P0	Base Case	<100	87	90	114	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	C.COSTAPPO SECTION 1D & C.COSTAPPE SECTION 1E 230KV	P2	Breaker	<100	99	81	133	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	<100	94	102	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	Contra Costa-Moraga Nos. 1 & 2 230 KV lines	P7	DCTL	<100	95	104	126	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	60	73	Diverge	87	81	Diverge	83	Diverge	Install redundant battery supply	
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	110	Diverge	Diverge	60	73	Diverge	87	98	Diverge	83	Diverge	Install redundant relay	
LOS ESTEROS - MONTAGUE 115 KV LINE	C.COSTAPPO SECTION 1D & C.COSTAPPE SECTION 1E 230KV	P2	Breaker	101	97	78	115	36	65	95	61	84	84	54	64	Potential new project or rescue of the Lone Tree - Cayetano - Newark Corridor Series Compensation project	
	MORAGA 230KV - SECTION 2D & 1D	P2	Breaker	108	83	89	94	43	61	80	67	73	89	58	55	Potential new project or rescue of the Lone Tree - Cayetano - Newark Corridor Series Compensation project	
	Tesla-Newark No.1 and Tesla-Ravenwood 230 KV lines	P7	DCTL	100	94	99	Diverge	43	68	104	66	78	90	61	67	Potential new project or rescue of the Lone Tree - Cayetano - Newark Corridor Series Compensation project	
	Contra Costa-Moraga Nos. 1 & 2 230 KV lines	P7	DCTL	101	93	101	108	40	73	109	62	84	82	54	61	Potential new project or rescue of the Lone Tree - Cayetano - Newark Corridor Series Compensation project	
	LAS POSITAS 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	96	89	92	102	35	66	98	55	78	80	48	57	Project: Las Positas 230-60 kV DC Supply and Control Circuit	
	MORAGA 230KV BUS #1 & 2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	108	99	107	117	43	76	114	67	89	89	58	69	Project: Moraga 230 KV Redundant Bus Differential Relay	
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	109	101	110	Diverge	44	77	118	68	90	90	60	70	Project: Moraga 230-115 kV DC Supply and Control Circuit	
	NEWARK-TRIMBLE 115KV and LOS ESTEROS-TRIMBLE 115KV	P6	N-1-1	103	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	CHARCOT-SANJOSEB 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	MANNING - METCALF 500 KV and TESLA-NEWARK #1 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
LOS ESTEROS - MONTAGUE 115 KV LINE	MCC CTG1 18.00KV & MCC CTG2 18.00KV & MCC STG1 18.00KV GEN																

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
METCALF 230/115KV TB 4	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	81	85	101	Diverge	57	66	111	64	67	70	65	87	Install redundant battery supply	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	83	94	111	Diverge	56	75	Diverge	64	70	72	63	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS3 15.00KV GEN UNITS and METCALFD 115KV (2)	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 230/115KV TB 2 and METCALF 230/115KV TB 1	P6	N-1-1	<100	<100	106	114	<100	<100	115	<100	<100	<100	<100	<100	Continue to monitor	
METCALF 500/230KV TB 11	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	0	0	Diverge	0	68	Diverge	0	Diverge	Install redundant battery supply	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	75	84	99	Diverge	50	67	Diverge	57	62	64	57	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS3 15.00KV GEN UNITS and METCALF 500/230KV TB 14	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 500/230KV TB 13 and METCALF 500/230KV TB 14	P6	N-1-1	<100	<100	106	120	<100	<100	120	<100	<100	<100	<100	<100	Continue to monitor	
METCALF 500/230KV TB 12	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS3 15.00KV GEN UNITS and METCALF 500/230KV TB 14	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 500/230KV TB 14 and METCALF 500/230KV TB 13	P6	N-1-1	<100	<100	112	128	<100	<100	127	<100	<100	<100	<100	<100	Project: Metcalf 500/230 kV TB. Long-term overload under review	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	75	85	95	Diverge	61	64	Diverge	67	60	69	68	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	TESLA-NEWARK #1 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
METCALF 500/230KV TB 13	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS3 15.00KV GEN UNITS and METCALF 500/230KV TB 14	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	100	<100	<100	<100	<100	<100	Continue to monitor	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	79	90	100	Diverge	64	67	Diverge	70	63	73	71	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS3 15.00KV GEN UNITS and METCALF 500/230KV TB 13	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	TESLA-NEWARK #1 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
METCALF 500/230KV TB 14	METCALF 230KV SECTION 2E	P2	Bus	<100	NA	88	102	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	Diverge	Diverge	NA	NA	Diverge	NA	113	NA	NA	NA	Install redundant battery supply	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	93	Diverge	NA	NA	Diverge	NA	61	NA	NA	NA	Project: Newark 230 kV DC Supply and Control Circuit	
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS3 15.00KV GEN UNITS and ST TRESA-METCALFD 115KV	P3	G-1/N-1	<100	<100	<100	114	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
METCALF-EDENVALE #2 115KV	CHARCOT-SANJOSEB 230KV and ST TRESA-METCALFD 115KV	P6	N-1-1	<100	<100	<100	115	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	ST TRESA-METCALFD 115KV	P2	N-1	79	86	105	112	49	34	62	62	25	62	62	67	Continue to monitor	
	METCALF-SANTA TERESA 115KV (EDNVJ1-METCALFD)	P2	Line Section w/o Fault	82	89	108	115	52	37	65	65	27	64	65	70	Continue to monitor	
	ST TRESA 115KV - RING R2 & R1	P2	Breaker	71	79	97	103	43	28	54	56	21	55	56	60	Continue to monitor	
METCALF-EL PATIO #1 115KV	METCALFD 115KV SECTION 1D	P2	Bus	83	67	80	105	61	60	105	59	69	81	60	85	Continue to monitor	
	METCALFD - 1D 115KV & METCALF-EL PATIO #2 LINE	P2	Breaker	83	67	80	105	61	60	105	59	69	81	60	85	Continue to monitor	
	METCALFD SECTION 2D & METCALFE SECTION 2E 115KV	P2	Breaker	92	70	90	Diverge	66	62	112	64	73	89	66	89	Continue to monitor	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	5	9	Diverge	18	61	Diverge	18	Diverge	Install redundant battery supply	
METCALF-EL PATIO #2 115KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	75	73	114	Diverge	48	57	Diverge	47	53	70	47	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	Metcalf - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	<100	<100	108	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
	SAN JOSE A-SAN JOSE B 115KV and METCALF-EL PATIO #2 115KV	P6	N-1-1	<100	<100	163	178	<100	<100	176	<100	<100	<100	<100	<100	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
	METCALFE 115KV - SECTION 2E & 1E	P2	Breaker	NA	58	Diverge	Diverge	NA	51	101	NA	64	NA	NA	73	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
METCALF-EDENVALE #2 115KV	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	5	9	Diverge	18	61	Diverge	18	Diverge	Install redundant battery supply	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	75	73	114	Diverge	49	58	Diverge	47	53	70	47	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	Metcalf - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	<100	<100	108	Diverge	<100	<100	102	<100	<100	<100	<100	<100	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
	SAN JOSE A-SAN JOSE B 115KV and METCALF-EL PATIO #1 115KV	P6	N-1-1	<100	<100	163	178	<100	<100	180	<100	<100	<100	<100	<100	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
METCALFE-METCALFE 115KV	METCALFD 115KV SECTION 1D	P2	Bus	98	83	105	126	72	69	119	71	76	93	72	99	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
	METCALFD - 1D 115KV & METCALF-EL PATIO #1 LINE	P2	Breaker	98	83	105	126	72	69	119	71	76	93	72	99	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
	METCALFD - 1D 115KV & ST TRESA-METCALD LINE	P2	Breaker	99	84	105	127	73	70	120	72	77	93	73	100	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
	METCALFD - 1D 115KV & METCALF-EDENVALE #2 LINE	P2	Breaker	98	83	105	126	72	69	119	71	76	93	72	99	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
METCALFE-METCALFE 115KV	METCALFD SECTION 1D & METCALFE SECTION 1E 115KV	P2	Breaker	108	87	107	138	78	72	127	77	79	101	79	103	Project: South Bay Reinforcement. Long-term overload under review for contribution from large load.	
	METCALFE - 2E 115KV & METCALFE-METCALFE LINE (2)	P2	Breaker	78	90	87	93	56	77	105	65	89	73	65	101	Continue to monitor	
	METCALFBK2JF-METCALFE 115KV NO FAULT (2)	P2	Line Section w/o Fault	80	81	94	107	53	62	101	63	64	68	63	82	Continue to monitor	
	LLAGAS 115KV SECTION 1F	P2	Bus	79	79	66	93	49	90	100	46	101	87	46	91	Continue to monitor	
METCALF-MORGAN HILL 115KV	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	8	132	Diverge	17	71	Diverge	16	Diverge	Install redundant battery supply	
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	130	Diverge	Diverge	8	110	Diverge	17	137	Diverge	16	Diverge	Install redundant relay	
	LLAGAS 115KV SECTION 1D	P2	Bus	104	13	41	33	66	17	22	99	15	81	98	26	Project: Morgan Hill Area Reinforcement (formerly Spring 230/115 kV substation)	
	LLAGAS - 1D 115KV & METCALFD-LLAGAS LINE	P2	Breaker	104	NA	NA	NA	66	NA	NA	99	NA	81	98	NA	Project: Morgan Hill Area Reinforcement (formerly Spring 230/115 kV substation)	
MILBRAE-SAN MATEO #1 115KV	LLAGAS - 1D 115KV & LLAGAS-GILROY F-GILROYENG-GILROYPK LINE	P2	Breaker	104	13	41	33	66	17	22	99	15	81	98	26	Project: Morgan Hill Area Reinforcement (formerly Spring 230/115 kV substation)	
	GREENVALLEY-MRGN HIL #1 115KV and METCALF-MORGAN HILL 115KV	P6	N-1-1	<100	<100	253	234	<100	<100	132	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.	
	LLAGAS-GILROY F-GILROYENG-GILROYPK 115KV and GREENVALLEY-MRGN HIL #1 115KV	P6	N-1-1	<100	<100	117	106	<100	<100	<100	<100	<100	<100	<100	<100	Potential capacity increase. Contribution from large load under review.	
	Q1552BESS .048KV GEN UNIT 1 and POTRENO-TBC, POT1 #1 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	100	<100	<100	<100	<100	<100	Continue to monitor	
MILBRAE-SNEATH LINE 60KV	SAN MATEO-MARTIN 230KV and POTRENO-TBC, POT1 #1 115KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	120	<100	<100	<100	<100	<100	Continue to monitor	
	MONTA VISTA 230V - SECTION 1E & 2E	P2	Breaker	53	54	56	75	49	59	102	55	67	47	53	47	Continue to monitor	
	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	52	53	57	Diverge	47	57	101	53	65	45	52	47	Continue to monitor	
	MILBRAE-SAN MATEO #1 115KV and MARTIN-MILLBRAE #1 115KV	P6	N-1-1	107	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Martin - Millbrae 60 kV Area Reinforcement	
MILPITAS-SWIFT 115KV	MILBRAE-SAN MATEO #1 115KV and MARTIN-MILLBRAE #1 115KV	P6	N-1-1	118	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Martin - Millbrae 60 kV Area Reinforcement	
	Metcalf - San Jose B HVDC Gen and PIERCY-METCALF 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	105	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Red														

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
Overloaded Facility	COYOTE SW STA (MEC) 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	60	67	80	98	64	64	118	63	68	NA	65	73	Install redundant battery supply	
	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	64	70	72	Diverge	59	65	115	59	64	NA	60	75	Install redundant relay	
MONTA VISTA-JEFFERSON #2 230KV	MONTAVIS-JEFFERSON 230KV	P1	N-1	58	63	65	86	57	60	106	66	67	56	66	69	Continue to monitor	
	MONTA VISTA-JEFFERSON #1 230KV (MONTAVIS-SLACTAP1)	P2	Line Section w/o Fault	57	62	65	85	56	60	105	65	66	55	65	68	Continue to monitor	
	JEFFERSON 230KV - MIDDLE BREAKER BAY 1	P2	Breaker	56	61	64	84	56	59	104	65	66	55	65	67	Continue to monitor	
	MONTAVIS - 1E 230KV & MONTAVIS-JEFFERSON LINE	P2	Breaker	54	59	62	81	53	57	100	62	63	53	62	65	Continue to monitor	
	MONTAVIS 230KV - SECTION 1E & 1D	P2	Breaker	56	61	63	83	52	55	100	60	61	53	60	66	Continue to monitor	
	RUSCYECT1 18.00KV & RUSCYECT2 15.00KV & RUSCYECT1 15.00KV GEN UNITS and MONTAVIS-JEFFERSON 230KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	115	<100	<100	<100	<100	<100	Continue to monitor	
	MONTAVIS-JEFFERSON 230KV and POTRERO-TBC POT1 #1 115KV	P6	N-1-1	<100	<100	<100	102	<100	<100	121	<100	<100	<100	<100	<100	Continue to monitor	
	SAN MATEO 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	79	74	Diverge	65	84	Diverge	77	Diverge	72	74	72	Project: San Mateo 230-115-60 kV DC Supply and Control Circuit	
MONTA VISTA-LOS ALTOS 60KV	Base Case	P0	Base Case	89	103	124	142	65	70	122	79	44	57	79	67	Potential capacity increase.	
MONTA VISTA-LOS GATOS 60KV	Metcalf - San Jose B HVDC Gen and MONTA VISTA-LOS GATOS 60KV	P3	G-1/N-1	<100	<100	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
MONTA VISTA-SARATOGA 230KV	RUSCYECT1 18.00KV & RUSCYECT2 15.00KV & RUSCYECT1 15.00KV GEN UNITS and HICKS-METCALF 230KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	MONTA VISTA-COYOTE SW STA 230KV and HICKS-METCALF 230KV	P6	N-1-1	<100	<100	102	128	<100	<100	136	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 230KV SECTION 2D	P2	Bus	63	68	75	95	54	57	103	59	69	62	61	77	Continue to monitor	
	MONTAVIS 230KV - SECTION 1E & 2E	P2	Breaker	63	68	78	91	58	62	104	64	73	61	65	74	Continue to monitor	
	MONTAVIS 230KV - SECTION 2E & 2D	P2	Breaker	64	68	70	90	58	62	102	63	73	64	65	78	Continue to monitor	
	Metcalf-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 KV Line	P7	DTCL	68	73	85	Diverge	61	66	106	67	77	65	69	80	Continue to monitor	
	Metcalf - San Jose B HVDC Gen and STELLING-MONTA VISTA 115KV	P3	G-1/N-1	<100	<100	<100	102	<100	<100	112	<100	<100	<100	<100	<100	Continue to monitor	
	CHARCOT-SANJOSEB 230KV and STELLING-MONTA VISTA 115KV	P6	N-1-1	<100	<100	<100	106	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
MONTA VISTA-WOLFE 115KV	STELLING-MONTA VISTA 115KV	P1	N-1	69	78	90	101	60	66	110	64	42	50	64	57	Continue to monitor	
	MNTA VSA 115KV - MIDDLE BREAKER BAY 4	P2	Breaker	69	78	90	101	60	66	110	64	42	50	64	57	Continue to monitor	
	Metcalf - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	<100	<100	127	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	NEWARK D-NRS #1 230KV and NRS-NRISrser SVP 230 KV UG cable	P6	N-1-1	<100	<100	<100	108	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	DVR6GT1 13.80KV & DVR6GT2 13.80KV & DVR6TS1 13.80KV Gen Units and TESLA-NEWARK #2 230KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	CHARCOT-SANJOSEB 230KV and TESLA-NEWARK #1 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	Base Case	P0	Base Case	57	62	79	89	53	59	103	52	58	51	53	63	Continue to monitor	
	Metcalf - San Jose B HVDC Gen	P1	N-1	NA	59	78	Diverge	NA	61	103	NA	60	NA	NA	61	Continue to monitor	
MONTAVIS 230/115KV TB 2	JEFFERSON-EGBERTSWSTA 230KV	P1	N-1	NA	60	73	86	NA	59	104	NA	59	NA	NA	62	Continue to monitor	
	EGBERTSWSTA-JEFFERSON 230KV	P1	N-1	NA	60	73	86	NA	59	104	NA	59	NA	NA	62	Continue to monitor	
	MONTAVIS 230/115KV TB 3	P1	N-1	69	75	94	109	62	70	123	60	67	62	62	76	Continue to monitor	
	MONTAVIS 230/115KV TB 4	P1	N-1	73	79	100	114	67	75	130	65	72	65	67	80	Continue to monitor	
	MONTAVIS 230KV SECTION 2E	P2	Bus	65	70	87	99	59	66	115	57	63	58	58	72	Continue to monitor	
	MONTAVIS 230KV SECTION 2D	P2	Bus	69	75	93	105	63	71	121	61	67	62	63	76	Continue to monitor	
	MNTA VSA 115KV - MIDDLE BREAKER BAY 3	P2	Breaker	69	76	95	109	63	72	124	61	67	61	62	75	Continue to monitor	
	MONTAVIS 230KV - SECTION 1E & 2E	P2	Breaker	66	71	82	93	62	68	118	61	68	61	62	75	Continue to monitor	
MONTAVIS 230/115KV TB 3	Monta Vista-Jefferson Nos. 1 & 2 230 KV lines	P7	DTCL	61	66	79	93	57	63	109	57	63	55	58	68	Continue to monitor	
	Tesla-Newark No.1 and Tesla-Ravenwood 230 KV lines	P7	DTCL	60	65	83	90	56	62	107	56	60	55	57	68	Continue to monitor	
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DTCL	63	68	85	98	58	63	111	56	61	58	57	70	Continue to monitor	
	Monta Vista-Jefferson 230 KV Lines No. 1 & 2	P7	DTCL	61	66	79	93	57	63	109	57	63	55	58	68	Continue to monitor	
	Newark - Los Esteros & Los Esteros - Metcalf 230 KV lines	P7	DTCL	60	62	77	89	55	59	104	53	58	55	54	64	Continue to monitor	
	JEFFERSON 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	59	65	77	92	56	62	111	56	62	55	57	67	Install redundant battery supply	
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	70	73	103	Diverge	61	66	119	61	66	63	62	74	Install redundant battery supply	
	JEFFERSON 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	61	66	80	94	57	63	110	57	63	56	58	68	Install redundant relay	
MONTAVIS 230/115KV TB 4	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	71	78	103	Diverge	61	70	119	61	67	63	63	80	Install redundant relay	
	MONTAVIS 230KV - SECTION 2E & 2D	P2	Breaker	96	104	128	140	86	95	162	81	88	87	83	107	Potential transformer capacity increase.	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	76	84	90	Diverge	61	76	Diverge	61	68	68	61	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	RUSCYECT1 18.00KV & RUSCYECT2 15.00KV & RUSCYECT1 15.00KV GEN UNITS and MONTAVIS 230/115KV TB 4	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	119	<100	<100	<100	<100	<100	Continue to monitor	
	MONTAVIS 230/115KV TB 2	P1	N-1	65	71	87	101	57	63	114	54	60	59	55	71	Continue to monitor	
	MONTAVIS 230/115KV TB 4	P1	N-1	66	71	88	102	57	64	115	54	60	59	55	72	Continue to monitor	
	MONTAVIS 230KV SECTION 1D	P2	Bus	61	66	81	92	54	60	106	51	56	54	53	67	Continue to monitor	
	MONTAVIS 230KV SECTION 2D	P2	Bus	63	68	83	94	54	60	107	50	56	56	52	68	Continue to monitor	
MONTAVIS 230/115KV TB 3	MNTA VSA 115KV - MIDDLE BREAKER BAY 3	P2	Breaker	62	69	85	95	54	61	110	50	56	55	52	68	Continue to monitor	
	MNTA VSA 115KV - MIDDLE BREAKER BAY 1	P2	Breaker	62	67	83	94	54	55	105	51	53	55	52	66	Continue to monitor	
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	64	66	81	Diverge	52	57	106	51	55	57	52	67	Install redundant battery supply	
	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	65	70	80	Diverge	53	60	106	51	56	58	52	72	Install redundant relay	
	MONTAVIS 230/115KV TB 2 and MONTAVIS 230/115KV TB 4	P6	N-1-1	107	<100	140	158	<100	<100	183	<100	<100	<100	<100	<100	Potential transformer capacity increase.	
	MONTAVIS 230KV - SECTION 1D & 2D	P2	Breaker	95	103	122	Diverge	83	92	156	79	84	83	82	104	Potential transformer capacity increase.	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	68	75	80	Diverge	54	66	Diverge	52	57	62	52	Diverge	Project: Newark 230 kV DC Supply and Control Circuit	
	LECEFGT1 13.80KV & LECEFGT2 13.80KV & LECEFGT3 13.80KV & LECEFGT4 13.80KV GEN UNITS and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
MONTAVIS 230/115KV TB 4	PITTSBURG-TASSAIAH 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	104	<100	<100	<100	<100	<100	Continue to monitor	
	Base Case	P0	Base Case	59	64	78	90	53	60	106	51	57	53	52	65	Continue to monitor	
	JEFFERSON-EGBERTSWSTA 230KV	P1	N-1	NA	62	73	87	NA	59	107	NA	59	NA	NA	64	Continue to monitor	
	LOS ESTEROS-METCALF 230KV	P1	N-1	60	64	77	89	54	59	106	52	58	55	53	66	Continue to monitor	
	EGBERTSWSTA-JEFFERSON 230KV	P1	N-1	NA	62	73	87	NA	59	107	NA	59	NA	NA	64	Continue to monitor	
	MONTAVIS 230/115KV TB 2	P1	N-1	74	81	101	115	68	76	132	65	72	66	67	82	Continue to monitor	
	MONTAVIS 230/115KV TB 3	P1	N-1	71	77												

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
MORAGA-CASTRO VALLEY 230KV	NEWARK D SECTION 2D & NEWARK E SECTION 2E 230KV	P2	Breaker	80	90	112	Diverge	29	61	74	39	68	63	33	66	Continue to monitor	
	MORAGA-E 115KV - SECTION 1E & 2E	P2	Breaker	72	76	104	120	26	53	71	40	65	56	34	56	Continue to monitor	
	PITTSBURG-D SECTION 1D & PITTSBURG-E SECTION 1E 230KV	P2	Breaker	72	84	108	111	21	57	63	37	60	50	31	48	Continue to monitor	
	C COSTAPPO 230KV - SECTION 1D & 2D	P2	Breaker	85	88	95	123	26	52	66	44	72	68	37	61	Continue to monitor	
	Tesla-Newark No.1 and Tesla-Ravenwood 230 KV lines	P7	DTCL	78	83	109	Diverge	33	56	71	49	67	68	45	68	Continue to monitor	
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DTCL	81	86	112	Diverge	31	55	74	43	65	67	39	66	Continue to monitor	
	Tesla - Newark No.2 and Newark - Los Esteros 230 KV lines	P7	DTCL	69	78	101	113	25	50	64	37	57	55	32	57	Continue to monitor	
	Contra Costa-Las Positas 230 KV and North Dublin-Vineyard 230 KV lines	P7	DTCL	83	87	90	118	28	62	65	43	73	62	34	64	Continue to monitor	
	Contra Costa - Las Positas 230 KV and Contra Costa-Lonereet 230 KV lines	P7	DTCL	86	87	80	123	28	59	65	44	73	68	37	60	Continue to monitor	
	Contra Costa - Las Positas 230 KV and Lonetree - Cayetano 230 KV lines	P7	DTCL	85	87	91	124	28	60	65	44	74	67	36	61	Continue to monitor	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	50	64	Diverge	71	70	Diverge	68	Diverge	Install redundant battery supply	
	OAKLAND J 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	64	68	92	102	21	46	59	33	60	50	28	48	Install redundant battery supply	
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	108	Diverge	Diverge	50	64	Diverge	71	92	Diverge	68	Diverge	Install redundant relay	
MORAGA-CLAREMONT #1 115KV	OAKLAND J 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	65	68	92	103	21	47	60	33	61	51	28	49	Install redundant relay	
	MORAGA-C 115KV SECTION 2C	P2	Bus	52	69	53	20	49	61	106	59	41	38	49	100	Continue to monitor	
	PITTSBURG-F 230KV - SECTION 2F & 1F	P2	Breaker	NA	70	79	74	NA	53	103	NA	4	NA	NA	79	Continue to monitor	
	Pittsburg-Tidewater 230 KV and Pittsburg-Tesoro SW STA 230 KV lines	P7	DTCL	37	69	79	73	47	52	102	42	4	18	40	78	Continue to monitor	
	Pittsburg-Tidewater 230 KV and Tesoro SW STA-Sobrante 230 KV lines	P7	DTCL	37	68	77	72	46	51	101	42	6	17	38	76	Continue to monitor	
	MORAGA-CLAREMONT #2 115KV and SOBRANTE-MORAGA 115KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	OAKLAND X 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	62	101	46	30	65	77	68	77	26	63	70	114	Install redundant battery supply	
	PITTSBURG PP 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	33	70	Diverge	Diverge	46	51	106	45	8	23	40	86	Install redundant battery supply	
	OAKLAND-X 115KV - SECTION 2D & 1D	P2	Breaker	62	101	46	30	65	77	68	77	26	63	70	114	Project: North Oakland Reinforcement	
	PITTSBURG-F 230KV - SECTION 2F & 1F	P2	Breaker	NA	70	79	74	NA	53	103	NA	4	NA	NA	79	Continue to monitor	
	Pittsburg-Tidewater 230 KV and Pittsburg-Tesoro SW STA 230 KV lines	P7	DTCL	37	69	79	74	47	53	103	42	4	18	40	78	Continue to monitor	
	Pittsburg-Tidewater 230 KV and Tesoro SW STA-Sobrante 230 KV lines	P7	DTCL	37	68	78	72	46	51	101	42	6	17	38	77	Continue to monitor	
	MORAGA-CLAREMONT #1 115KV and SOBRANTE-MORAGA 115KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
MORAGA-CLAREMONT #2 115KV	OAKLAND X 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	62	102	46	30	66	77	68	77	26	63	70	115	Install redundant battery supply	
	PITTSBURG PP 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	33	70	Diverge	Diverge	46	51	106	45	8	23	40	86	Install redundant battery supply	
	OAKLAND-X 115KV - SECTION 2D & 1D	P2	Breaker	62	102	46	30	66	77	68	77	26	63	70	115	Project: North Oakland Reinforcement	
	PITTSBURG-CLAYTON #4 115KV and PITTSBURG-CLAYTON #1 115KV	P6	N-1-1	<100	<100	<100	109	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	CLAYTN 115KV SECTION 2D	P2	Bus	48	35	88	110	18	16	31	29	37	53	26	45	Continue to monitor	
	PITTSBURG-D 115KV - SECTION 2D & 1D	P2	Breaker	65	41	100	111	35	25	37	47	23	45	44	36	Continue to monitor	
	CLAYTN 115KV - SECTION 2D & 1D	P2	Breaker	84	93	98	109	76	72	97	82	65	80	82	86	Continue to monitor	
	Pittsburg-Clayton Nos. 3 & 4 115 KV lines	P7	DTCL	39	24	98	110	10	7	18	21	34	47	18	39	Continue to monitor	
	Lakewood-Clayton and Lakewood-Meadow Lane-Clayton 115 KV lines	P7	DTCL	85	93	98	110	76	72	97	82	51	80	82	86	Continue to monitor	
	PITTSBURG-CLAYTON #1 115KV and PITTSBURG-CLAYTON #3 115KV	P6	N-1-1	<100	<100	104	116	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	CLAYTN 115KV SECTION 2D	P2	Bus	<100	38	105	115	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	PITTSBURG-D 115KV - SECTION 2D & 1D	P2	Breaker	<100	44	106	117	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	Pittsburg-Clayton Nos. 3 & 4 115 KV lines	P7	DTCL	<100	25	105	116	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
Lakewood-Clayton and Lakewood-Meadow Lane-Clayton 115 KV lines	P7	DTCL	<100	99	105	116	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
MORAGA-LAKEWOOD 115KV	PITTSBURG PP 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	85	84	Diverge	Diverge	76	71	99	81	70	80	81	89	Install redundant battery supply	
	CLAYTON 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	84	93	98	109	76	72	97	82	51	80	82	86	Install redundant battery supply	
	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	52	12	98	Diverge	6	25	60	17	51	141	17	33	Project: Pittsburg PP 230 KV Redundant Bus Differential Relay	
	PITTSBURG-D 230KV - SECTION 2D & 1D	P2	Breaker	51	17	23	32	2	5	6	17	52	139	15	49	Sensitivity only	
	RUSCYTEC1 18.00KV & RUSCYTEC2 15.00KV & RUSCYTEC1 15.00KV GEN UNITS and SAN LEANDRO-OAKLAND J #1 115KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	80	88	39	Diverge	61	148	45	90	29	76	87	89	Install redundant battery supply	
	EASTSHORE 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	81	296	35	39	75	88	40	71	17	64	71	79	Install redundant battery supply	
	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	197	276	61	Diverge	88	247	62	83	35	89	81	248	Install redundant battery supply	
	EAST SHORE 115 KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	81	296	35	39	75	88	40	71	17	64	71	79	Install redundant relay	
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	162	Diverge	Diverge	68	89	Diverge	92	32	Diverge	90	Diverge	Install redundant relay	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	158	197	52	Diverge	64	181	Diverge	87	34	86	82	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	E. SHORE 230/115KV TB 2 and E. SHORE 230/115KV TB 1	P6	N-1-1	192	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: San Leandro and Oakland J RAS	
	RUSCYTEC1 18.00KV & RUSCYTEC2 15.00KV & RUSCYTEC1 15.00KV GEN UNITS	P1	N-1	81	146	41	56	62	143	45	62	30	69	60	81	Project: South Oakland Reinforcement	
MORAGA-OAKLAND J 115KV	MORAGA-SAN LEANDRO #1 115KV	P1	N-1	NA	111	36	49	NA	111	42	NA	25	NA	NA	74	Project: South Oakland Reinforcement	
	MORAGA-SAN LEANDRO #2 115KV	P1	N-1	NA	111	36	49	NA	111	42	NA	25	NA	NA	74	Project: South Oakland Reinforcement	
	MORAGA-SAN LEANDRO #3 115KV	P1	N-1	NA	111	36	49	NA	111	42	NA	25	NA	NA	75	Project: South Oakland Reinforcement	
	PITTSBURG-E 230KV SECTION 1E	P2	Bus	73	150	43	48	48	144	47	78	27	53	75	80	Project: South Oakland Reinforcement	
	PITTSBURG-E - 1E 230KV & PITTSBURG-TESLA #1 LINE	P2	Breaker	73	150	43	48	48	144	47	78	27	53	75	80	Project: South Oakland Reinforcement	
	EASTSHRE 115KV - SECTION MD & ME	P2	Breaker	81	296	35	39	83	415	46	79	23	64	79	362	Project: South Oakland Reinforcement	
	PITTSBURG-D SECTION 1D & PITTSBURG-E SECTION 1E 230KV	P2	Breaker	79	160	47	52	51	152	49	81	28	55	78	82	Project: South Oakland Reinforcement	
	PITTSBURG-E 230KV - SECTION 1D & 1E	P2	Breaker	NA	150	43	48	NA	144	47	NA	27	NA	NA	80	Project: South Oakland Reinforcement	
	Grant-Eastshore Nos. 1 & 2 115 KV lines	P7	DTCL	81	298	35	39	75	88	40	71	17	64	71	80	Project: South Oakland Reinforcement	
	Pittsburg-San Mateo 230 KV and Pittsburg-East Shore 230 KV lines	P7	DTCL	75	151	43	49	52	145	48	80	27	53	77	83	Project: South Oakland Reinforcement	
	Moraga-San Leandro Nos. 1 & 2 115 KV lines	P7	DTCL	91	111	44	58	57	111	50	95	30	62	91	105	Project: South Oakland Reinforcement	
	SN LNDRO 115KV SECTION ME	P2	Bus	0	0	43	58	62	0	50	96	29	74	91	106	Sensitivity only	
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	101	91	54	Diverge	79	70	65	88	41	96	91	107	Install redundant battery supply	
MORAGA-OAKLAND J 115KV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	102	101	53	Diverge	80	77	65	90	42	98	92	119	Install redundant relay	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	103	106</												

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
NEWARK F-ZANKER-NRS 115KV	Single DC Supply Failure at NRS400 115KV bus	P5	Non-Redundant Battery/Relay	121	NA	NA	NA	66	NA	NA	21	NA	120	20	NA	Install redundant relay	
	Single Control Circuitry Failure at SRS 115KV bus	P5	Non-Redundant Battery/Relay	102	NA	NA	NA	27	NA	NA	4	NA	99	8	NA	Install redundant relay	
	LOS ESTEROS 230 KV BAAH BUS #1&2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	125	32	69	75	67	17	47	36	19	131	35	44	Install redundant relay	
	Single DC Supply Failure at NRS300 115KV bus	P5	Non-Redundant Battery/Relay	104	NA	NA	NA	54	NA	NA	5	NA	103	6	NA	Install redundant relay	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	66	44	113	Diverge	18	23	Diverge	16	22	73	16	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
NEWARK-AMES #1 115KV	NRS 300 115 KV bus	P2	Bus	104	NA	NA	NA	54	NA	NA	5	NA	103	6	NA	Project: NRS rebuild	
	NRS 400 115 KV bus	P2	Bus	121	NA	NA	NA	66	NA	NA	21	NA	120	20	NA	Project: San Jose area HVDC line	
	SRS 115 KV bus	P2	Bus	102	NA	NA	NA	27	NA	NA	4	NA	99	8	NA	Project: San Jose area HVDC line	
	NRS 400 115 KV bus tie breaker to NRS 300 115 KV bus	P2	Breaker	374	NA	NA	NA	178	NA	NA	79	NA	366	78	NA	Project: San Jose area HVDC line	
	Northern - Scott #1 and #2 115 KV Lines	P7	DCTL	119	33	73	84	29	14	53	4	17	116	5	41	Project: San Jose area HVDC line	
	Newark - Los Esteros & Los Esteros - Metcalf 230 KV Lines	P7	DCTL	122	34	67	76	62	19	48	32	21	127	31	45	Project: San Jose area HVDC line	
	PG&E lines but internal to SVP - NRS-SRS#2 115 KV and NRS-SRS#1 115 KV	P7	DCTL	119	33	73	84	29	14	53	4	17	116	5	41	Project: San Jose area HVDC line	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	55	39	Diverge	69	89	Diverge	71	Diverge	Install redundant battery supply	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	61	69	159	Diverge	23	44	Diverge	5	26	59	6	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	61	44	Diverge	77	99	Diverge	79	Diverge	Install redundant battery supply	
NEWARK-AMES #2 115KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	68	76	177	Diverge	26	49	Diverge	6	28	65	7	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	60	43	Diverge	75	97	Diverge	78	Diverge	Install redundant battery supply	
NEWARK-AMES #3 115KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	67	75	172	Diverge	25	48	Diverge	6	29	64	7	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	60	43	Diverge	76	98	Diverge	78	Diverge	Install redundant battery supply	
NEWARK-AMES DISTRIBUTION 115KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	67	75	179	Diverge	25	49	Diverge	6	22	64	7	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	122	63	103	Diverge	61	43	64	96	32	84	96	48	Install redundant battery supply	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	76	26	Diverge	122	20	Diverge	121	Diverge	Install redundant battery supply	
	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	123	64	103	Diverge	61	43	64	96	32	84	96	49	Install redundant relay	
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	50	Diverge	Diverge	76	27	Diverge	122	21	Diverge	120	Diverge	Install redundant relay	
	PIERCY-METCALF 115KV	P1	N-1	118	62	79	86	61	42	62	96	31	82	96	48	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade	
	METCALFE 115KV SECTION 2E	P2	Bus	118	62	79	86	61	42	63	96	31	82	96	48	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade	
	METCALFE - 2E 115KV & METCALFE-METCALFE LINE	P2	Breaker	118	62	80	87	61	42	63	96	31	82	96	48	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade	
	METCALFE - 2E 115KV & METCALFE-METCALFE LINE (2)	P2	Breaker	118	62	80	87	61	42	63	96	31	82	96	48	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade	
	METCALFE 115KV - SECTION 1E & 2E	P2	Breaker	120	NA	NA	NA	61	NA	NA	96	NA	83	96	NA	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade	
NEWARK-JARVIS #1 115KV	METCALFD SECTION 2D & METCALFE SECTION 2E 115KV	P2	Breaker	118	62	80	87	61	42	63	96	31	82	96	48	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade	
	Swift - Metcalf & Piercy - Metcalf 115 KV Lines	P7	DCTL	118	63	80	88	61	43	63	96	31	82	96	48	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade	
	RUSCYECT1 18.00KV & RUSCYECT2 15.00KV & RUSCYECT3 15.00KV GEN UNITS AND NEWARK-JARVIS#2 115KV	P3	G-1/N-1	<100	<100	119	133	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	CHARCOT-SANJOSEB 230KV and NEWARK-JARVIS #2 115KV	P6	N-1-1	<100	<100	<100	137	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	NEWARK-JARVIS #2 115KV	P1	N-1	72	91	114	125	48	59	92	55	50	56	55	72	Continue to monitor	
	NEWARK-JARVIS #2 115KV (NUMI ICT-JARVIS)	P2	Line Section w/o Fault	72	91	114	125	48	59	92	55	50	56	55	72	Continue to monitor	
	NEWARK-JARVIS #2 115KV (NEWARK D-NUMI ICT)	P2	Line Section w/o Fault	72	91	114	125	48	59	92	55	50	56	54	72	Continue to monitor	
	SANRAMON 230/60KV TB 1 and LS PSTAS 230/60KV TB 4	P6	N-1-1	<100	<100	177	184	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	103	120	124	Diverge	41	86	Diverge	56	89	82	44	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	NEWARK D-NRS #1 230KV and MANNING - METCALF 500 KV Metcalf - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
NEWARK-LOS ESTEROS 230KV	Metcalf - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	<100	<100	124	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	NEWARK D 230KV - SECTION 1D & 2D	P2	Breaker	<100	74	Diverge	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	NEWARK D-NRS #1 230KV and LOS ESTEROS-METCALF 230KV	P6	N-1-1	<100	<100	108	125	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	106	80	Diverge	104	70	Diverge	104	Diverge	Install redundant battery supply	
	NEWARK 115 KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	112	42	54	51	56	50	35	39	45	109	35	39	Install redundant relay	
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	81	Diverge	Diverge	106	79	Diverge	104	89	Diverge	104	Diverge	Install redundant relay	
	RINGWOODSWT-MILPITAS #1 115KV and SWIFT-METCALF 115KV	P6	N-1-1	<100	<100	144	160	<100	<100	122	<100	<100	<100	<100	<100	Continue to monitor	
	RINGWOODSWT-MILPITAS #1 115KV and SWIFT-METCALF 115KV	P6	N-1-1	<100	<100	145	161	<100	<100	123	<100	<100	<100	<100	<100	Continue to monitor	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	70	19	Diverge	52	14	Diverge	51	Diverge	Install redundant battery supply	
	LOS ESTEROS 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	176	50	98	Diverge	114	28	56	72	33	165	69	56	Install redundant battery supply	
NEWARK-MILPITAS #1 115KV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	44	Diverge	Diverge	70	20	Diverge	52	35	Diverge	51	Diverge	Install redundant relay	
	LOS ESTEROS 230 KV BAAH BUS #1&2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	167	37	80	71	88	21	45	56	30	173	53	45	Install redundant relay	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	83	50	140	Diverge	32	26	Diverge	9	34	92	11	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	NEWARK E&F 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	113	36	81	72	53	18	41	23	26	114	23	38	Project: Newark Bus E&F 115 KV DC Supply and Control Circuit	
	NEWARK E-F BUS TIE 230KV	P1	N-1	108	29	67	60	50	15	35	20	24	110	18	33	Project: San Jose area HVDC line	
	SSS-NRS/Srser SVP 230 KV path	P1	N-1	103	26	65	60	60	12	36	27	23	97	26	31	Project: San Jose area HVDC line	
	NRS-NRS/Srser SVP 230 KV UG cable	P1	N-1	104	26	65	60	61	12	36	28	23	98	27	31	Project: San Jose area HVDC line	
	Loss of PST 230 KV Path	P1	N-1	103	26	65	60	60	12	36	27	23	97	26	31	Project: San Jose area HVDC line	
	NRS T2	P1	N-1	103	33	79	72	61	15	45	28	26	98	27	37	Project: San Jose area HVDC line	
	NEWARK E 230KV SECTION 1E	P2	Bus	108	30	67	61	50	16	35	20	25	109	18	34	Project: San Jose area HVDC line	
NEWARK-NORTHERN RECEIVING STATION #1 115KV	NEWARK F 115KV SECTION 2Z	P2	Bus	117	46	95	80	59	26	50	31	33	114	30	51	Project: San Jose area HVDC line	
	NEWARK F 115KV - SECTION 2F & 1F	P2	Breaker	112	34	87	75	50	12	40	18	22	114	19	42	Project: San Jose area HVDC line	
	NEWARK D SECTION 1D & NEWARK E SECTION 1E 230KV	P2	Breaker	112	91	Diverge	Diverge	51	60	83	21	51	112	18	102	Project: San Jose area HVDC line	
	NEWARK E 230KV - SECTION 1E & 2E	P2	Breaker	111	30	80	Diverge	50	17	37	20	26	113	16	35	Project: San Jose area HVDC line	
	Newark - Los Esteros & Los Esteros - Metcalf 230 KV Lines	P7	DCTL	162	39	77	73	82	24	46	50	34	167	48	47	Project: San Jose area HVDC line	
	NEWARK D-NRS #1 230KV	P1	N-1	NA	52	119	127	NA	25	58	NA	29	NA	NA	63	Project: San Jose area HVDC line. Long-term overload under review	
	NEWARK D 230KV SECTION 1D	P2	Bus	65	51	129	Diverge	32	24	57	14	28	67	15	62	Project: San Jose area HVDC line. Long-term overload under review	
	RUSCYECT1 18.00KV & RUSCYECT2 15.00KV & RUSCYECT3 1																

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
NORTECH-NORTHERN RECEIVING STATION 115KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	91	110	128	Diverge	40	81	Diverge	46	75	75	38	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	NEWARK D 230KV - SECTION 1D & 2D	P2	Breaker	64	76	Diverge	Diverge	56	61	70	30	22	44	30	77	Continue to monitor	
	CHAMCOT-SANJOSEB 230KV and NEWARK D-NRS #1 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	DYRBACT1 13.80KV & DYRBACT2 13.80KV & DYRBACT3 13.80KV Gen Units and NEWARK D-NRS #1 230KV	P3	G-1/N-1	<100	<100	133	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
NORTH DUBLIN-CAYETANO 230KV	NEWARK - 1-25 25.00KV GEN UNIT V and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	RUSCYTECT1 18/230KV TB 1 and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	102	<100	<100	<100	<100	<100	Continue to monitor	
	TESLA-NEWARK #1 230KV	P1	N-1	72	78	78	99	45	80	100	51	65	49	42	73	Continue to monitor	
	TESLA-NEWARK #2 230KV	P1	N-1	73	80	80	103	44	80	101	49	64	49	40	73	Continue to monitor	
	CONTRA COSTA-LAS POSITAS 230KV	P1	N-1	NA	83	69	104	NA	86	106	NA	71	NA	NA	75	Continue to monitor	
	NEWARK D 230KV SECTION 1D	P2	Bus	77	83	84	Diverge	47	86	105	52	70	53	42	78	Continue to monitor	
	NEWARK E 230KV SECTION 2E	P2	Bus	74	82	83	108	44	81	103	49	64	49	40	74	Continue to monitor	
	LS PSTAS 230KV SECTION 1D	P2	Bus	76	82	69	102	44	85	105	51	70	50	39	74	Continue to monitor	
	NEWARK E - 2E 230KV & NEWARK E-TASSAJAR-RESEARCH LINE	P2	Breaker	74	82	83	108	44	81	103	49	64	49	40	74	Continue to monitor	
	C.COSTAPPO - 1D 230KV & MARSHLOD1-C.COSTAPPO #1 LINE	P2	Breaker	76	83	63	102	41	78	98	52	71	51	41	75	Continue to monitor	
	NEWARK D 230KV SECTION 1D & NEWARK E SECTION 1E 230KV	P2	Breaker	75	82	Diverge	Diverge	44	86	105	51	71	51	40	76	Continue to monitor	
	NEWARK E 230KV - SECTION 1E & 2E	P2	Breaker	73	86	90	Diverge	42	84	108	51	67	48	42	77	Continue to monitor	
	C.COSTAPPO SECTION 1D & C.COSTAPPE SECTION 1E 230KV	P2	Breaker	81	89	66	113	44	84	102	55	75	53	44	80	Continue to monitor	
	MORAGA 230KV - SECTION 2D & 2E	P2	Breaker	NA	81	81	101	NA	83	104	NA	69	NA	NA	73	Continue to monitor	
	Tesla-Newark No.1 and Tesla-Ravenswood 230 KV lines	P7	DTCL	78	85	86	Diverge	51	86	109	59	69	56	49	82	Continue to monitor	
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DTCL	77	84	85	111	48	83	108	53	67	52	43	78	Continue to monitor	
Tesla - Newark No.2 and Newark - Los Esteros 230 KV Lines	P7	DTCL	71	80	79	103	43	79	101	49	63	46	39	73	Continue to monitor		
Contra Costa-Moraga Nos. 1 & 2 230 KV lines	P7	DTCL	80	86	86	105	49	92	115	56	75	51	44	79	Continue to monitor		
NORTH DUBLIN-VINEYARD 230KV	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	67	92	Diverge	75	72	Diverge	67	Diverge	Install redundant battery supply	
	MTCLAF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	99	Diverge	Diverge	67	92	Diverge	75	85	Diverge	67	Diverge	Install redundant relay	
	LAS POSITAS 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	76	82	78	102	44	85	105	50	70	50	39	74	Project: Las Positas 230-60 KV DC Supply and Control Circuit	
	MORAGA 230KV BUS #1 & 2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	85	91	92	116	52	95	120	60	78	56	47	84	Project: Moraga 230 KV Redundant Bus Differential Relay	
NRS - KRS 115 KV LINE	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	87	92	95	Diverge	53	96	122	61	79	57	48	85	Project: Moraga 230-115 KV DC Supply and Control Circuit	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	73	104	Diverge	81	62	Diverge	71	Diverge	Install redundant battery supply	
	MTCLAF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	110	Diverge	Diverge	73	105	Diverge	81	73	Diverge	71	Diverge	Install redundant relay	
	MORAGA 230KV BUS #1 & 2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	92	99	73	89	58	108	98	65	68	60	50	95	Project: Moraga 230 KV Redundant Bus Differential Relay	
NRS 115/60 KV TR #1	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	93	101	76	Diverge	59	110	100	66	69	61	51	96	Project: Moraga 230-115 KV DC Supply and Control Circuit	
	RUSCYTECT1 18.00KV & RUSCYTECT2 15.00KV & RUSCYTECT3 15.00KV GEN UNITS and CONTRA COSTA-LAS POSITAS 230KV	P3	G-1/N-1	<100	<100	<100	<100	<100	106	<100	<100	<100	<100	<100	<100	Project: North Dublin - Vineyard 230 KV line Reconducting	
	CONTRA COSTA-LAS POSITAS 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	104	<100	Diverge	<100	109	<100	<100	<100	<100	<100	<100	Project: North Dublin - Vineyard 230 KV line Reconducting	
	Contra Costa-Moraga Nos. 1 & 2 230 KV lines	P7	DTCL	86	93	69	83	55	105	94	60	65	54	46	88	Project: North Dublin - Vineyard 230 KV line Reconducting	
NRS 115/60 KV TR #1	Northern - Scott #1 and #2 115 KV Lines	P7	DTCL	NA	76	107	126	45	59	102	26	45	NA	26	74	Continue to monitor	
	POGE lines but internal to SVP - NRS-SRS#2 115 KV and NRS-SRS#1 115 KV	P7	DTCL	NA	76	107	126	45	59	102	26	45	NA	26	74	Continue to monitor	
	POGE lines but internal to SVP - NRS-SRS#1 115 KV	P1	N-1	NA	47	88	119	NA	64	107	NA	63	NA	NA	46	Continue to monitor	
	POGE lines but internal to SVP - NRS-SRS#2 115 KV	P1	N-1	NA	47	88	119	NA	64	107	NA	63	NA	NA	46	Continue to monitor	
NRS 115/60 KV TR #1	new SVP 115KV line - NRS-KRS 115 KV	P1	N-1	NA	48	90	122	NA	66	109	NA	65	NA	NA	47	Continue to monitor	
	SRS 115/60KV transformer	P1	N-1	NA	54	97	134	NA	73	119	NA	70	NA	NA	53	Continue to monitor	
	FMC 115KV SECTION 1E	P2	Bus	NA	45	87	117	NA	64	106	NA	63	NA	NA	44	Continue to monitor	
	SANJOSEB 115KV - MIDDLE BREAKER BAY 5	P2	Breaker	NA	45	87	117	NA	64	106	NA	63	NA	NA	44	Continue to monitor	
NRS 115/60 KV TR #4	Trimble - San Jose B & FMC - San Jose B 115 KV Lines	P7	DTCL	NA	45	87	117	NA	64	106	NA	63	NA	NA	44	Continue to monitor	
	Newark - Kifer & FMC - Kifer 115 KV Lines	P7	DTCL	NA	45	87	118	NA	64	106	NA	63	NA	NA	44	Continue to monitor	
	KRS 115/60KV transformer	P1	N-1	NA	51	75	107	NA	50	88	NA	42	NA	NA	50	Continue to monitor	
	NRS T2	P1	N-1	NA	47	68	130	NA	57	101	NA	53	NA	NA	46	Continue to monitor	
NRS 230/115 KV TR #2	FMC-SAN JOSE B 115KV	P1	N-1	NA	60	85	100	NA	50	90	NA	46	NA	NA	58	Continue to monitor	
	NRS T3	P1	N-1	NA	69	117	131	NA	58	102	NA	53	NA	NA	67	Continue to monitor	
	NRS T1	P1	N-1	NA	69	116	141	NA	61	108	NA	57	NA	NA	67	Continue to monitor	
	NEWARK F 115KV SECTION 2Z	P2	Bus	NA	65	88	100	NA	55	90	NA	48	NA	NA	63	Continue to monitor	
OAKLAND D - OAKLAND I 115 KV CABLE	NEWARK 115 KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	62	113	123	NA	48	92	NA	46	NA	NA	62	Install redundant relay	
	LOS ESTEROS 115KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	66	91	101	NA	53	90	NA	46	NA	NA	62	Install redundant relay	
	NEWARK E&F 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	58	87	100	NA	47	87	NA	43	NA	NA	58	Project: Newark Bus E&F 115 KV DC Supply and Control Circuit	
	OAKLAND X 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	58	145	NA	NA	83	95	NA	96	NA	100	91	133	Install redundant battery supply	
OAKLAND D - OAKLAND I 115 KV CABLE	MORAGA 230KV BUS #1 & 2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	53	104	NA	NA	61	72	NA	70	NA	72	68	83	Project: Moraga 230 KV Redundant Bus Differential Relay	
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	173	268	NA	NA	174	235	NA	200	NA	176	198	209	Project: Moraga 230-115 KV DC Supply and Control Circuit	
	OAKLAND-X 115KV - SECTION 2D & 1D	P2	Breaker	58	145	NA	NA	83	95	NA	96	NA	100	91	133	Project: North Oakland Reinforcement	
	MORAGA D 115KV - SECTION 1D & 2D	P2	Breaker	64	133	NA	NA	81	115	NA	92	NA	85	94	81	Project: North Oakland Reinforcement	
OLEUM-CHRISTIE 115KV	C-X #2 115KV and C-X #3 115KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Sensitivity only	
	SOBRANTE-G #1 115KV and SOBRANTE-G #2 115KV	P6	N-1-1	<100	151	161	102	<100	<100	<100	<100	<100	<100	<100	<100	Operating solution	
	PITTSBURG-E 115KV - SECTION 2E & 1E	P2	Breaker	37	106	107	66	14	43	36	18	6	15	17	94	Operating solution	
	SOBRANTE-G Nos. 1 & 2 115 KV lines	P7	DTCL	61	151	161	102	52	93	103	65	47	47	63	126	Operating solution	
OLEUM-CHRISTIE 115KV	CHRISTIE-SOBRANTE 115KV	P1	N-1	112	NA	NA	NA	62	NA	101	NA	73	101	NA	48	Project: North Tower 115 KV Looping Project	
	SOBRANTE 115KV SECTION 2D	P2	Bus	112	66	81	84	61	35	54	101	35	73	101	48	Project: North Tower 115 KV Looping Project	
	CHRISTIE 115KV - RING #4 & #3	P2	Breaker	112	67	82	85	62	35	54	101	35	73	101	48	Project: North Tower 115 KV Looping Project	
	CHRISTIE 115KV - RING #1 & #4	P2	Breaker	112	67	82	86	62	35	54	101	35	73	101	48	Project: North Tower 115 KV Looping Project	
OLEUM-MARTINEZ 115KV	SOBRANTE - 2D 115KV & SOBRANTE-STANDARD OIL SW STA #1 LINE	P2	Breaker	112	66	81	84	61	35	54	101	35	73	101	48	Project: North Tower 115 KV Looping Project	
	SOBRANTE -																

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)											Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
PITTSBURG-D 230V/115KV TB 13	Newark - Dixon Landing & Newark - Milpitas #1 115 KV Lines	P7	DCTL	111	61	74	81	59	41	61	87	31	76	87	46	Project: Metcalf-Piercy & Swift and Newark-Dixon Landing 115 KV Upgrade		
	NEWARK E&F 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	113	61	74	81	59	42	60	88	31	77	88	47	Project: Newark Bus E&F 115 KV DC Supply and Control Circuit		
	LMCECT2 18.00KV & LMCECT1 18.00KV & LMCEST1 18.00KV GEN UNITS and PITSBG D 230V/115KV TB 12	P3	G-1/N-1	108	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Pittsburg 230V/115 KV Transformer Capacity Increase		
PITTSBURG-D-TBC_PTB1 #1 230KV	PITTSBURG-D 230V/115KV TB 12 and PITTSBURG-F 230V/115KV TB 14	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	112	Sensitivity only		
	Metcalf - San Jose B HVDC Gen and LMCECT2 18.00KV & LMCECT1 18.00KV GEN UNITS	P3	G-1/N-1	<100	<100	<100	102	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	METCALFE 115KV - SECTION 2E & 1E	P2	Breaker	<100	94	102	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
PITTSBURG-EASTSHORE 230KV	Metcalf - San Jose B HVDC Gen and RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS	P3	G-1/N-1	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	TESLA-METCALF 500KV and MANNING - METCALF 500 KV	P6	N-1-1	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	NA	NA	NA	41	NA	NA	75	NA	Diverge	76	NA	Install redundant relay		
PITTSBURG-F 230V/115KV TB 14	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	80	51	Diverge	NA	31	87	NA	59	NA	NA	115	Project: Pittsburg PP 230 KV Redundant Bus Differential Relay		
	CHARCOT-SANJOSEB 230KV and PITTSBURG-LOS MEDANOS #2 115KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and PITTSBURG-LOS MEDANOS #2 115KV	P3	G-1/N-1	<100	<100	101	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
PITTSBURG-LOS MEDANOS #1 115KV	PITTSBURG-LOS MEDANOS #2 115KV	P1	N-1	100	98	97	Diverge	100	100	113	100	100	25	100	26	Continue to monitor		
	PITTSBURG-D 115KV SECTION 2D	P2	Bus	100	98	99	Diverge	100	99	112	99	100	26	99	26	Continue to monitor		
	PITTSBURG-D - 2D 115KV & PITTSBURG-KIRKER-COLUMBIA STEEL LINE	P2	Breaker	100	98	99	Diverge	100	99	112	99	100	26	99	26	Continue to monitor		
PITTSBURG-LOS MEDANOS #2 115KV	CHARCOT-SANJOSEB 230KV and PITTSBURG-LOS MEDANOS #1 115KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	RUSCTYECS1 18.00KV & RUSCTYECS2 15.00KV & RUSCTYECS1 15.00KV GEN UNITS and PITTSBURG-LOS MEDANOS #1 115KV	P3	G-1/N-1	<100	<100	101	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	PITTSBURG-LOS MEDANOS #1 115KV	P1	N-1	100	98	97	Diverge	100	100	113	100	100	25	100	26	Continue to monitor		
PITTSBURG-MARTINEZ #1 115KV	PITTSBURG-D 115KV SECTION 1D	P2	Bus	100	98	97	Diverge	100	100	113	100	100	25	100	26	Continue to monitor		
	PITTSBURG-D - 1D 115KV & PITTSBURG-D-CLIMBIAHS LINE	P2	Breaker	100	98	97	Diverge	100	100	113	100	100	25	100	26	Continue to monitor		
	PITTSBURG-D - 1D 115KV & PITTSBURG-CLAYTON #3 LINE	P2	Breaker	100	98	97	Diverge	100	100	113	100	100	25	100	26	Continue to monitor		
PITTSBURG-MARTINEZ #2 115KV	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	64	124	144	114	55	61	101	65	25	36	65	91	Project: Sobrante 230-115 KV DC Supply and Control Circuit		
	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	50	110	129	98	46	52	91	50	15	25	50	79	Project: Sobrante 230-115 KV DC Supply and Control Circuit		
	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	61	127	148	115	53	60	102	62	22	33	62	93	Project: Sobrante 230-115 KV DC Supply and Control Circuit		
PITTSBURG-SAN MATEO 230KV	NEWARK 1-25 25.00KV GEN UNIT YS and Metcalf - San Jose B HVDC Gen	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	CHARCOT-SANJOSEB 230KV and TESLA-RAVENSWOOD 230KV	P0	Base Case	<100	66	86	108	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines	P7	DCTL	<100	88	102	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
PITTSBURG-TASSAJARA 230KV	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	NA	NA	NA	47	NA	NA	65	NA	NA	65	NA	Install redundant battery supply		
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	NA	NA	NA	48	NA	NA	65	NA	NA	65	NA	Install redundant relay		
	TESLA-NEWARK #1 230KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
RADUM-IUKA-VALLECTS 60KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	87	86	108	Diverge	87	87	Diverge	87	87	87	87	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	LS PSTAS 230/60KV TB 4 and SANRAMON 230/60KV TB 1	P6	N-1-1	<100	<100	149	151	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	95	114	132	Diverge	43	84	Diverge	49	78	78	41	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
RAVENSWD 230V/115KV TB 1	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	60	Diverge	Diverge	95	55	Diverge	98	71	Diverge	99	Diverge	Project: Metcalf 230 KV Redundant Bus Differential Relay		
	LMCECT2 18.00KV & LMCECT1 18.00KV & LMCEST1 18.00KV GEN UNITS and RAVENSWD 230V/115KV TB 2	P3	G-1/N-1	103	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Redwood City Area 115 KV System Reinforcement		
	RAVENSWD 230V/115KV TB 2 and TESLA-METCALF 500KV	P6	N-1-1	114	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Redwood City Area 115 KV System Reinforcement		
RAVENSWD 230V/115KV TB 2	RAVENSWD 230V/115KV TB 2	P1	N-1	104	60	74	76	87	56	79	86	57	92	85	53	Project: Redwood City Area 115 KV System Reinforcement		
	RAVENSWD 230KV - MIDDLE BREAKER BAY 2	P2	Breaker	108	62	76	81	92	59	86	95	61	96	93	56	Project: Redwood City Area 115 KV System Reinforcement		
	RVNSWD E 115KV - SECTION 2E & 1E	P2	Breaker	93	101	79	86	79	91	92	88	63	83	87	90	Invalid contingency		
RAVENSWOOD-AMES #1 115KV	RAVENSWOOD 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	81	94	41	52	73	89	52	105	55	83	103	103	Project: Ravenswood 230 KV Redundant Bus Differential Relay		
	Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines	P7	DCTL	71	81	33	47	67	79	54	108	57	83	105	99	Project: Redwood City Area 115 KV System Reinforcement		
	NEWARK-RAVENSWOOD 230KV and TESLA-RAVENSWOOD 230KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	106	<100	Project: Redwood City Area 115 KV System Reinforcement		
RAVENSWOOD-AMES #2 115KV	RAVENSWOOD 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	80	94	40	51	73	89	51	105	54	83	103	103	Project: Ravenswood 230 KV Redundant Bus Differential Relay		
	Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines	P7	DCTL	71	81	32	46	67	79	53	108	56	83	105	99	Project: Redwood City Area 115 KV System Reinforcement		
	NEWARK-RAVENSWOOD 230KV and TESLA-RAVENSWOOD 230KV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	108	<100	<100	106	<100	Project: Redwood City Area 115 KV System Reinforcement		
RAVENSWOOD-BAIR #1 115KV	SAN MATEO-BELMONT 115KV and BAIR-RVNSWD-D-LONESTAR 115KV	P6	N-1-1	102	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Redwood City Area 115 KV System Reinforcement		
	RVNSWD E 115KV SECTION 1Y	P2	Bus	106	51	64	43	76	35	29	70	25	90	70	36	Invalid contingency		
	RVNSWD E 115KV - SECTION 2E & 1E	P2	Breaker	144	162	119	123	112	127	83	127	64	127	127	142	Invalid contingency		
RAVENSWOOD-COOLEY LANDING #1 115KV	RAVENSWOOD-COOLEY LANDING #2 115KV and RAVENSWOOD-PALO ALTO #1 115KV	P6	N-1-1	<100	<100	<100	103	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	RVNSWD D 115KV SECTION 1Y	P2	Bus	82	102	92	115	63	82	116	83	80	71	82	87	Invalid contingency		
	RAVENSWOOD-PALO ALTO #1 115KV and RAVENSWOOD-COOLEY LANDING #1 115KV	P6	N-1-1	<100	<100	<100	102	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
RAVENSWOOD-PALO ALTO #1 115KV	RVNSWD E SECTION 1E and RVNSWD D SECTION 1D 115KV	P2	Breaker	82	96	95	108	62	74	91	75	66	71	74	82	Continue to monitor		
	RVNSWD E 115KV SECTION 2E	P2	Bus	95	124	118	126	78	102	105	97	84	88	97	114	Project: Ames Distribution - Palo Alto 115 KV Transmission Line. Anticipated overload under review		
	RVNSWD E SECTION 2E & RVNSWD F SECTION 2F 115KV	P2	Breaker	95	124	118	126	78	102	105	97	84	88	97	114	Invalid contingency		
RAVENSWOOD-PALO ALTO #2 115KV	RVNSWD E SECTION 2E & RVNSWD D SECTION 2D 115KV	P2	Breaker	93	122	117	125	77	100	103	96	83	86	95	113	Project: Ames Distribution - Palo Alto 115 KV Transmission Line. Anticipated overload under review		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	39	45	127	Diverge	33	38	Diverge	37	37	38	37	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	Ravenswood-Palo Alto No. 1 115 KV and Cooley Landing-Palo Alto 115 KV lines	P7	DCTL	94	109	101	83	84	97	58	89	58	94	89	109	Project: Ames Distribution - Palo Alto 115 KV Transmission Line. Anticipated overload under review		
RICHMOND-SOBRANTE 115 KV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	39	45	126	Diverge	33	38	Diverge	36	37	37	36	Diverge	Project: Newark 230 KV DC Supply and Control Circuit		
	SOBRANTE R #2 115KV [3780]	P1	N-1	<100	76	92	103	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	RICHMOND 115KV SECTION 1D	P2	Bus	<100	76	92	103	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
RINGWOODSWST-MILPITAS #1 115KV	SOBRANTE 115KV SECTION 2D	P2	Bus	<100	75	92	103	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	SOBRANTE - 2D 115KV & SOBRANTE-STANDARD OIL SW STA #1 LINE	P2	Breaker	<100	76	93	103	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	SOBRANTE 115KV - SECTION 2E & 2D	P2	Breaker	<100	76	93	104	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
SAN JOSE A-SAN JOSE B 115KV	NEWARK-MILPITAS #1 115KV MOAS OPENED ON NEWARK_F_BARTRIC_1 and SWIFT-METCALF 115KV	P6	N-1-1	101	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: San Jose area HVDC line		
	TESLA-METCALF 500KV and MANNING - METCALF 500 KV	P6	N-1-1	<100	<100	Diverge	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	Metcalf - San Jose B HVDC Gen and EL PATIO-SAN JOSE A 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	<100	115	Continue to monitor	
SAN JOSE A-SAN JOSE B 115KV	EL PATIO-SAN JOSE A 115KV	P1	N-1	NA	66	77	76	NA	92	100	NA	101	NA	NA	111	Continue to monitor		
	EL PATIO-SAN JOSE A 115KV (SN JSE A-ELPT_SJ1)	P2	Line Section w/o Fault	NA	66	77	76	NA	92	100	NA	101	NA</					

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
SAN JOSE HVDC TIE	POTRERO-TBC POT1 #1 115KV	P1	N-1	NA	37	68	127	NA	NA	98	NA	65	NA	NA	40	Continue to monitor	
	BAVENSWD 5VD-V	P1	N-1	NA	38	68	127	NA	NA	98	NA	65	NA	NA	40	Continue to monitor	
	NEWARK E SHUNT-7H & NEWARK E SHUNT-SH & NEWARK E SHUNT-CL & NEWARK E 5VD-V	P1	N-1	NA	39	68	127	NA	NA	98	NA	67	NA	NA	40	Continue to monitor	
	NEWARK D SHUNT-CL & NEWARK D SHUNT-C2 & NEWARK D SHUNT-C3	P1	N-1	NA	37	68	127	NA	NA	97	NA	67	NA	NA	40	Continue to monitor	
	POTRERO-TBC POT1 115KV NO FAULT	P2	Line Section w/o Fault	NA	37	68	127	NA	NA	98	NA	65	NA	NA	40	Continue to monitor	
	METCALFE 115KV SECTION 1E	P2	Bus	NA	37	68	127	NA	NA	98	NA	66	NA	NA	40	Continue to monitor	
	POTRERO 115KV SECTION 2E	P2	Bus	NA	37	68	127	NA	NA	98	NA	65	NA	NA	40	Continue to monitor	
	METCALFE -1E 115KV & METCALFE-COYTE PUMPING PLANT LINE	P2	Breaker	NA	37	68	127	NA	NA	98	NA	66	NA	NA	40	Continue to monitor	
	COSTAPPO SECTION 1D & COSTAPPO SECTION 1E 230KV	P2	Breaker	NA	36	68	127	NA	NA	98	NA	67	NA	NA	40	Continue to monitor	
	Metcalff-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 KV Line	P7	DTCL	NA	39	68	127	NA	NA	96	NA	67	NA	NA	40	Continue to monitor	
	Metcalff - Hicks & Metcalff - Vasona 230 KV Lines	P7	DTCL	NA	36	68	127	NA	NA	97	NA	67	NA	NA	40	Continue to monitor	
	Tesla - Newark No.2 and Newark - Los Esteros 230 KV Lines	P7	DTCL	NA	36	69	127	NA	NA	97	NA	67	NA	NA	40	Continue to monitor	
	Contra Costa - Las Positas 230 KV and Contra Costa-Lonetree 230 KV lines	P7	DTCL	NA	36	67	127	NA	NA	98	NA	67	NA	NA	40	Continue to monitor	
	Contra Costa - Las Positas 230 KV and Lonetree - Cayetano 230 KV lines	P7	DTCL	NA	36	67	127	NA	NA	98	NA	67	NA	NA	40	Continue to monitor	
	GROPPKRI 13.8/115KV TB 1 and RUSCTYECT1 18/230KV TB 1	P6	N-1-1	<100	<100	<100	127	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	PITTSBURG PP 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	40	Diverge	Diverge	NA	NA	102	NA	67	NA	NA	40	Install redundant battery supply	
SAN LEANDRO-OAKLAND J #1 115KV	Single DC Supply Failure at Duane 115KV bus	P5	Non-Redundant Battery/Relay	NA	35	68	127	NA	NA	97	NA	67	NA	NA	40	Install redundant relay	
	JEFFERSON 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	37	68	127	NA	NA	96	NA	67	NA	NA	40	Install redundant relay	
	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	35	68	126	NA	NA	96	NA	66	NA	NA	40	Install redundant relay	
	MORAGA 230KV BUS #1 & 2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	37	68	127	NA	NA	98	NA	67	NA	NA	40	Project: Moraga 230 KV Redundant Bus Differential Relay	
	RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and MORAGA-OAKLAND J 115KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	MORAGA-OAKLAND J 115KV and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	0	91	101	90	0	92	88	55	96	86	0	Install redundant battery supply	
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	Diverge	Diverge	Diverge	66	90	Diverge	101	44	Diverge	98	Diverge	Install redundant battery supply	
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0	Diverge	Diverge	67	90	Diverge	100	50	Diverge	98	Diverge	Install redundant relay	
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	0	76	Diverge	61	0	Diverge	95	54	97	88	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
	NEWARK D 230KV - SECTION 1D & 2D	P2	Breaker	80	0	Diverge	Diverge	49	0	70	81	45	67	76	102	Sensitivity only	
	Monta Vista-Jefferson Nos. 1 & 2 230 KV lines	P7	DTCL	79	94	111	137	73	85	145	81	74	58	80	71	Continue to monitor	
	Monta Vista-Jefferson 230 KV Lines No. 1 & 2	P7	DTCL	79	94	111	137	73	85	145	81	74	58	80	71	Continue to monitor	
	MONTAVIS 230KV - SECTION 1E & 2E	P2	Breaker	92	109	126	Diverge	85	96	168	94	86	71	93	85	Operating solution	
	Metcalff-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 KV Line	P7	DTCL	92	109	126	Diverge	85	97	155	94	86	71	93	83	Operating solution	
	SAN MATEO - HILLSDALE JCT 60 KV LINE (BERESFORD - HILLSDALE)	JEFFERSON 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	307	331	373	396	261	231	412	305	155	232	305	267	Project: Jefferson 230 KV Redundant Bus Differential Relay
JEFFERSON 230/60KV TB 1 and JEFFERSON 230/60KV TB 2		P6	N-1-1	<100	<100	108	110	<100	<100	126	<100	<100	<100	<100	<100	Continue to monitor	
SANMATEO 230KV - SECTION 1D & 1E		P2	Breaker	113	NA	NA	NA	95	NA	NA	94	98	91	NA	NA	Invalid contingency	
JEFFERSON 230/60KV TB 1 and JEFFERSON 230/60KV TB 2		P6	N-1-1	<100	<100	111	114	<100	<100	130	<100	<100	<100	<100	<100	Continue to monitor	
RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and SAN MATEO-BAIR 60KV MOAS OPENED ON SAN CRIS BAIR		P3	G-1/N-1	<100	<100	<100	107	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
SAN MATEO-BAIR 60KV MOAS OPENED ON SAN CRIS BAIR		P1	N-1	71	80	89	102	49	53	86	65	36	52	65	57	Continue to monitor	
Belmont-Bair 115 KV and San Carlos-Bair 60 KV lines		P7	DTCL	71	80	89	102	49	53	86	65	36	53	65	57	Continue to monitor	
SANMATEO 115/60KV TB 3 and SAN MATEO 60/115KV TB 8		P6	N-1-1	<100	<100	107	124	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
BAIR 115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	72	80	88	101	49	53	86	65	36	52	65	57	Continue to monitor	
RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)		P5	Non-Redundant Battery/Relay	426	432	129	133	350	363	109	396	63	385	396	388	Project: Ravenswood 115 KV Redundant Bus Differential Relay	
RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)		P5	Non-Redundant Battery/Relay	320	310	54	45	283	294	28	308	27	311	307	307	Project: Ravenswood 115 KV Redundant Bus Differential Relay	
RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	412	421	108	Diverge	348	360	60	392	28	379	392	366	Project: Ravenswood 230-115 KV DC Supply and Control Circuit	
RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	302	295	28	Diverge	281	290	28	301	10	303	302	277	Project: Ravenswood 230-115 KV DC Supply and Control Circuit	
SAN MATEO-BAY MEADOWS #1 115KV		RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and SAN MATEO-BAY MEADOWS #2 115KV	P3	G-1/N-1	<100	<100	<100	105	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
		CHARCOT-SANJOSEB 230KV and SAN MATEO-BAY MEADOWS #2 115KV	P6	N-1-1	<100	<100	<100	105	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
		RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT1 15.00KV GEN UNITS and SAN MATEO-BAY MEADOWS #1 115KV	P3	G-1/N-1	<100	<100	<100	105	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
	CHARCOT-SANJOSEB 230KV and SAN MATEO-BAY MEADOWS #1 115KV	P6	N-1-1	<100	<100	<100	105	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	SANMATEO 115KV - MIDDLE BREAKER BAY 8	P2	Breaker	79	88	86	101	66	72	98	75	49	62	75	66	Continue to monitor	
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	347	184	94	100	286	150	87	316	49	311	316	163	Project: Ravenswood 115 KV Redundant Bus Differential Relay	
	SAN MATEO-BELMONT 115KV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	335	179	85	Diverge	279	146	46	308	34	303	308	155	Project: Ravenswood 230-115 KV DC Supply and Control Circuit
		RAVENSWOOD 230/115KV TB 1 and RAVENSWOOD 230/115KV TB 2	P6	N-1-1	124	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Redwood City Area 115 KV System Reinforcement
		RVNSWD D 115KV - SECTION 1D & 2D	P2	Breaker	114	60	74	77	85	46	70	92	38	91	93	47	Project: Redwood City Area 115 KV System Reinforcement
		Ravenswood-Bair Nos. 1 & 2 115 KV lines	P7	DTCL	100	56	69	72	75	42	66	83	35	79	84	43	Project: Redwood City Area 115 KV System Reinforcement
		MANNING - METCALF 500 KV and TESLA-METCALF 500KV	P6	N-1-1	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
		Monta Vista-Jefferson Nos. 1 & 2 230 KV lines	P7	DTCL	76	91	107	131	71	80	138	90	67	54	90	67	Continue to monitor
		Monta Vista-Jefferson 230 KV Lines No. 1 & 2	P7	DTCL	76	91	107	131	71	80	138	90	67	54	90	67	Continue to monitor
		MONTAVIS 230KV - SECTION 1E & 2E	P2	Breaker	82	97	112	Diverge	77	88	151	82	82	66	81	79	Continue to monitor
		Monta Vista-Jefferson Nos. 1 & 2 230 KV lines	P7	DTCL	69	82	97	121	64	77	128	70	69	53	69	65	Continue to monitor
		Monta Vista-Jefferson 230 KV Lines No. 1 & 2	P7	DTCL	69	82	97	121	64	77	128	70	69	53	69	65	Continue to monitor
Metcalff-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 KV Line		P7	DTCL	82	97	111	Diverge	76	88	139	83	82	66	81	77	Continue to monitor	
MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	70	83	103	Diverge	64	77	137	69	69	52	68	65	Continue to monitor	
SAN MATEO-HILLSDALE JCT 60KV		MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	76	91	110	Diverge	71	80	146	90	67	54	88	66	Continue to monitor
		Metcalff-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 KV Line	P7	DTCL	87	103	121	Diverge	80	90	146	98	78	65	99	76	Operating solution
		MONTAVIS 230KV - SECTION 1E & 2E	P2	Breaker	87	103	119	Diverge</									

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
Overloaded Facility	Contra Costa - Las Positas 230 KV and Contra Costa-Lonnetree 230 KV lines	P7	DCTL	84	94	77	141	49	81	99	51	61	70	51	61	Continue to monitor		
	Contra Costa - Las Positas 230 KV and Lonnetree - Cayetano 230 KV lines	P7	DCTL	83	94	80	144	49	82	100	51	62	70	51	62	Continue to monitor		
	CONTRA COSTA PP 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	67	79	102	119	38	62	81	39	48	60	41	49	Install redundant battery supply		
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	83	Diverge	Diverge	50	58	Diverge	48	49	Diverge	54	Diverge	Install redundant relay		
	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	66	78	103	120	38	62	80	38	48	59	40	48	Install redundant relay		
	LAS POSITAS 230-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	88	96	116	136	57	75	100	60	57	70	59	71	Project: Las Positas 230-60 kV DC Supply and Control Circuit		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	55	73	114	Diverge	34	51	Diverge	28	21	55	36	Diverge	Project: Newark 230 kV DC Supply and Control Circuit		
SANJOSE230 230/115KV TB 1	TESLA-METCALF 500KV and 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	LECEFGT1 13.80KV & LECEFGT2 13.80KV & LECEFGT3 13.80KV & LECEFGT4 13.80KV GEN UNITS and 230KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	182	<100	<100	<100	<100	<100	Continue to monitor		
	Base Case	P0	Base Case	NA	67	92	100	NA	57	76	NA	67	NA	NA	NA	Continue to monitor		
	CHARCOT-SANJOSEB 230KV	P1	N-1	NA	62	122	142	NA	100	181	NA	121	NA	NA	NA	Continue to monitor		
	TRIMBLE 115KV SECTION 1D	P2	Bus	NA	69	96	104	NA	71	95	NA	68	NA	NA	NA	Continue to monitor		
	CHARCOTIS 230KV SECTION B2	P2	Bus	NA	62	122	142	NA	100	181	NA	121	NA	NA	NA	Continue to monitor		
	CHARCOTIS 230KV SECTION 1E	P2	Bus	NA	62	122	142	NA	100	181	NA	121	NA	NA	NA	Continue to monitor		
	METCALFD 115KV - SECTION 2D & 1D	P2	Breaker	NA	73	92	101	NA	73	99	NA	69	NA	NA	NA	Continue to monitor		
	Metcalf - Evergreen #1 and #2 115 KV Lines Evergreen Direction	P7	DCTL	NA	68	97	108	NA	66	98	NA	68	NA	NA	NA	Continue to monitor		
	Metcalf - Evergreen #1 and #2 115 KV Lines Metcalf Direction	P7	DCTL	NA	68	120	134	NA	66	98	NA	68	NA	NA	NA	Continue to monitor		
	Los Esteros - Trimble & Montague - Trimble 115 KV Line	P7	DCTL	NA	77	112	124	NA	79	111	NA	78	NA	NA	NA	Continue to monitor		
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	Diverge	Diverge	Diverge	NA	95	Diverge	NA	24	NA	NA	Diverge	Install redundant battery supply		
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	82	125	Diverge	NA	80	133	NA	87	NA	NA	NA	Install redundant battery supply		
	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	110	125	Diverge	NA	104	133	NA	87	NA	NA	114	Install redundant relay		
	MTCALF 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NA	115	Diverge	Diverge	NA	98	Diverge	NA	90	NA	NA	Diverge	Install redundant relay		
SANMATEO 115/60KV TB 3	JEFFERSON 230 KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	87	93	105	104	76	73	125	78	42	64	79	71	Project: Jefferson 230 kV Redundant Bus Differential Relay		
	RAVENSWOOD 115 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	105	107	54	51	91	98	45	91	13	90	90	90	Project: Ravenswood 115 kV Redundant Bus Differential Relay		
	CONTRA COSTA-LAS POSITAS 230KV and TESLA-NEWARK 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
SANRAMON 230/60KV TB 1	RUSCTVECT1 18.00KV & RUSCTVECT2 15.00KV & RUSCTVECT3 15.00KV GEN UNITS and HICKS-METCALF 230KV	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	113	<100	<100	<100	<100	<100	Continue to monitor		
	HICKS-METCALF 230KV and MONTA VISTA-COYOTE SW STA 230KV	P6	N-1-1	<100	<100	118	144	<100	<100	146	<100	<100	<100	<100	<100	Continue to monitor		
	MONTA VISTA-HICKS 230KV	P1	N-1	61	68	79	97	53	57	102	61	60	54	62	67	Continue to monitor		
	METCALF-MONTA VISTA #3 230KV	P1	N-1	65	72	84	103	56	59	107	64	63	57	66	71	Continue to monitor		
	MONTA VISTA-COYOTE SW STA 230KV	P1	N-1	66	73	84	103	55	60	107	64	62	58	66	71	Continue to monitor		
	HICKS-METCALF 230KV	P1	N-1	67	74	86	106	55	59	107	66	62	57	67	70	Continue to monitor		
	METCALF 230KV SECTION 2D	P2	Bus	74	80	95	116	60	64	117	70	68	64	72	78	Continue to monitor		
	MONTAVIS 230KV - SECTION 1E & 2E	P2	Breaker	74	82	101	Diverge	63	68	119	73	70	63	75	78	Continue to monitor		
	MONTAVIS 230KV - SECTION 2E & 2D	P2	Breaker	73	80	90	112	63	68	117	74	71	65	75	79	Continue to monitor		
	Metcalf-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 KV Line	P7	DCTL	78	86	105	Diverge	66	71	121	77	74	67	78	82	Continue to monitor		
	SAN MATEO 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	69	78	99	51	58	Diverge	59	Diverge	55	59	64	Install redundant battery supply		
	METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	65	68	78	Diverge	51	55	103	60	59	56	62	67	Install redundant battery supply		
	HICKS 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	62	69	80	98	53	57	103	61	60	55	63	68	Install redundant battery supply		
	COYOTE SW STA (MEC) 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	62	69	84	103	55	56	105	64	62	53	66	69	Install redundant battery supply		
	HICKS 230KV BUS(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	62	69	80	98	53	57	103	61	60	55	63	68	Install redundant relay		
SILVERCRKSS-METCALFE #1 115KV	FOSTER W. 12.47KV GEN UNIT 2 and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	MORAGA-OAKLAND 115KV and TESLA-NEWARK 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	SHELL 2 12.47KV GEN UNIT 1 and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	POTRERO-TBC, POT1 #1 115KV and NEWARK D-HRS #1 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	SAN JOSE B-STONE-EVERGREEN 115KV	P1	N-1	NA	53	97	105	NA	45	76	NA	54	NA	NA	54	Continue to monitor		
	SILVERCRKSS-METCALFE #2 115KV	P1	N-1	NA	73	119	139	NA	66	122	NA	79	NA	NA	NA	Continue to monitor		
	METCALFE 115KV SECTION 2E	P2	Bus	NA	78	139	165	NA	66	134	NA	74	NA	NA	NA	Continue to monitor		
	METCALFE - 2E 115KV & METCALFE-METCALFE LINE	P2	Breaker	NA	63	121	Diverge	NA	53	111	NA	54	NA	NA	70	Continue to monitor		
	METCALFE - 2E 115KV & METCALFE-METCALFE LINE (2)	P2	Breaker	NA	62	121	Diverge	NA	53	111	NA	54	NA	NA	70	Continue to monitor		
	SILVERCRKSS 115KV - MIDDLE BREAKER BAY 2	P2	Breaker	NA	72	116	133	NA	69	117	NA	80	NA	NA	NA	Continue to monitor		
	METCALFD SECTION 2D & METCALFE SECTION 2E 115KV	P2	Breaker	NA	81	145	Diverge	NA	69	140	NA	77	NA	NA	NA	Continue to monitor		
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	NA	59	94	107	NA	52	96	NA	59	NA	NA	NA	Continue to monitor		
	Metcalf - El Patio No. 1 & 2 115 KV Lines	P7	DCTL	NA	57	89	100	NA	51	94	NA	59	NA	NA	NA	Continue to monitor		
	Swift - Metcalf & Piercy - Metcalf 115 KV Lines	P7	DCTL	NA	59	96	108	NA	53	98	NA	60	NA	NA	NA	Continue to monitor		
	METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	Diverge	Diverge	Diverge	NA	23	Diverge	NA	72	NA	NA	Diverge	Install redundant battery supply		
SILVERCRKSS-METCALFE #2 115KV	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	54	99	108	NA	45	77	NA	54	NA	NA	55	Install redundant battery supply		
	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	73	146	Diverge	NA	62	Diverge	NA	66	NA	NA	Diverge	Project: Newark 230 kV DC Supply and Control Circuit		
	FOSTER W. 12.47KV GEN UNIT 2 and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	POTRERO-TBC, POT1 #1 115KV and NEWARK D-HRS #1 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	SHELL 2 12.47KV GEN UNIT 1 and Metcalf - San Jose B HVDC Gen	P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor		
	SAN JOSE B-STONE-EVERGREEN 115KV	P1	N-1	NA	53	97	105	NA	44	74	NA	54	NA	NA	54	Continue to monitor		
	SILVERCRKSS-METCALFE #1 115KV	P1	N-1	NA	73	119	139	NA	65	119	NA	79	NA	NA	NA	Continue to monitor		
	SAN JOSE B-STONE-EVERGREEN 115KV (SANJOSE-MARKHIM J)	P2	Line Section w/o Fault	NA	55	100	108	NA	44	75	NA	56	NA	NA	55	Continue to monitor		
	NEWARK D 230KV SECTION 1D	P2	Bus	NA	57	101	Diverge	NA	49	88	NA	56	NA	NA	69	Continue to monitor		
	METCALFE 115KV SECTION 1E	P2	Bus	NA	72	131	155	NA	61	125	NA	75	NA	NA	NA	Continue to monitor		
	METCALFE - 1E 115KV & METCALF-COYOTE PUMPING PLANT LINE	P2	Breaker	NA	72	131	155	NA	61	125	NA	75	NA	NA	NA	Continue to monitor		
	SILVERCRKSS 115KV - MIDDLE BREAKER BAY 1	P2	Breaker	NA	72	116	133	NA	67	114	NA	80	NA	NA	NA	Continue to monitor		
	METCALFD SECTION 1D & METCALFE SECTION 1E 115KV	P2	Breaker	NA	75	135	161	NA	64	131	NA	79	NA	NA	NA	Continue to monitor		
	Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines	P7	DCTL	NA	59	94	107	NA	51	99	NA	59	NA	NA	NA	Continue to monitor		
	Metcalf - El Patio No. 1 & 2 115 KV Lines	P7	DCTL	NA	57	89	100	NA	50	92	NA	59	NA	NA	NA	Continue to monitor		
Swift - Metcalf & Piercy - Metcalf 115 KV Lines	P7	DCTL	NA	59	96	108	NA	52	96	NA	60	NA	NA	NA	Continue to monitor			
METCALF 500-230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	Diverge	Diverge	Diverge	NA	23	Diverge	NA	72	NA	NA	Diverge	Install redundant battery supply			
SOBRANTE 230/115KV TB 1	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	54	99	108	NA	44	75	NA	54</						

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	109	156	16	Diverge	85	108	20	119	8	101	118	121	Project: Moraga 230-115 KV DC Supply and Control Circuit	
SOBRANTE-GRIZZLY-CLAREMONT #2 115KV	PITTSBURG-SAN RAMON 230KV and SOBRANTE-GRIZZLY-CLAREMONT #1 115KV	P6	N-1-1	<100	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	MORAGA 230KV BUS #1 &2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	82	113	28	30	61	74	30	86	16	81	85	89	Project: Moraga 230 KV Redundant Bus Differential Relay	
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	140	200	17	Diverge	109	138	20	154	9	131	152	156	Project: Moraga 230-115 KV DC Supply and Control Circuit	
	SOBRANTE 115KV - SECTION 1E & 1D	P2	Breaker	NA	115	57	50	NA	59	22	NA	24	NA	NA	15	Project: North Oakland Reinforcement	
SOBRANTE-MORAGA 115KV	MORAGA 230KV BUS #1 &2(FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	100	133	150	170	75	97	129	102	89	98	101	104	Project: Moraga 230 KV Redundant Bus Differential Relay	
	SOBRANTE 230KV - SECTION 2D & 1D	P2	Breaker	100	75	56	25	79	52	50	101	58	81	98	91	Project: North Oakland Reinforcement	
	MORAGA 230KV - SECTION 2D & 1D	P2	Breaker	100	74	76	101	75	45	49	102	47	98	101	36	Project: North Oakland Reinforcement	
	PITTSBURG PP 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	132	Diverge	Diverge	NA	44	59	NA	12	NA	NA	104	Install redundant battery supply	
SOBRANTE-NRTH TWR 115KV	PITTSBURG-MARTINEZ #2 115KV and PITTSBURG-MARTINEZ #1 115KV MOAS OPENED ON PITTSBURG-E W.P.BART	P6	N-1-1	<100	146	149	100	<100	<100	<100	<100	<100	<100	<100	114	Operating solution	
	MARTINEZ E 115KV SECTION 1E	P2	Bus	NA	130	131	83	NA	43	57	NA	13	NA	NA	101	Operating solution	
	MARTINEZ E - 1E 115KV & PITTSBURG-MARTINEZ #2 LINE	P2	Breaker	NA	130	131	83	NA	43	57	NA	13	NA	NA	101	Operating solution	
	MARTINEZ E - 1E 115KV & PITTSBURG-MARTINEZ #1 LINE	P2	Breaker	NA	130	131	83	NA	43	57	NA	13	NA	NA	101	Operating solution	
	MARTINEZ E - 1E 115KV & LINE	P2	Breaker	NA	130	131	83	NA	43	57	NA	13	NA	NA	101	Operating solution	
	PITTSBURG-E 115KV - SECTION 2E & 1E	P2	Breaker	NA	145	148	100	NA	51	65	NA	20	NA	NA	116	Operating solution	
	Pittsburg-Martinez Nos. 1 & 2 115 KV Lines	P7	DTCL	NA	129	130	85	NA	43	57	NA	12	NA	NA	100	Operating solution	
	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	177	Diverge	NA	NA	165	NA	85	NA	NA	NA	Project: Moraga 230-115 KV DC Supply and Control Circuit	
SOBRANTE-R #1 115KV	SOBRANTE-R #2 115KV	P1	N-1	NA	73	89	99	NA	66	102	NA	21	NA	NA	35	Continue to monitor	
	RICHMOND 115KV SECTION 1D	P2	Bus	64	73	89	99	61	66	102	65	21	27	65	35	Continue to monitor	
	SOBRANTE 115KV SECTION 2D	P2	Bus	64	72	89	100	60	65	103	65	21	27	65	35	Continue to monitor	
	SOBRANTE - 2D 115KV & SOBRANTE-STANDARD OIL SW STA #1 LINE	P2	Breaker	64	72	90	100	60	66	103	65	21	27	65	35	Continue to monitor	
	SOBRANTE 115KV - SECTION 2E & 2D	P2	Breaker	64	72	90	101	61	65	103	65	20	27	65	35	Continue to monitor	
	RICHMOND-25 25.00KV GEN UNIT V5 and SOBRANTE-R #2 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	<100	<100	Continue to monitor	
	SOBRANTE-R #2 115KV and RICHMOND-25 25/115KV TB 1	P6	N-1-1	<100	<100	<100	<100	<100	<100	104	<100	<100	<100	<100	<100	Continue to monitor	
	SOBRANTE-R #1 115KV	P1	N-1	NA	76	92	103	NA	84	131	NA	22	NA	NA	40	Continue to monitor	
	SOBRANTE-R #1 115KV (RICHMOND-ELCRT2)	P2	Line Section w/o Fault	67	76	92	103	79	84	131	66	22	32	66	40	Continue to monitor	
	SOBRANTE-R #1 115KV (ELCRT1-SOBRANTE)	P2	Line Section w/o Fault	64	74	90	101	78	87	133	68	29	27	68	35	Continue to monitor	
SOBRANTE-R #2 115KV	SOBRANTE 115KV SECTION 1D	P2	Bus	64	72	88	101	78	86	133	68	29	27	68	35	Continue to monitor	
	SOBRANTE - 1D 115KV & SOBRANTE-GRIZZLY-CLAREMONT #1 LINE	P2	Breaker	64	73	88	101	78	86	133	68	29	27	68	35	Continue to monitor	
	SOBRANTE - 1D 115KV & SOBRANTE-G #1 LINE	P2	Breaker	64	72	88	101	78	86	133	68	29	27	68	35	Continue to monitor	
	SOBRANTE - 1D 115KV & SOBRANTE-R #1 LINE	P2	Breaker	67	75	91	103	79	84	131	66	22	32	66	40	Continue to monitor	
	SOBRANTE - 1D 115KV & SOBRANTE-OKLAND-D LINE	P2	Breaker	NA	72	88	101	NA	86	133	NA	29	NA	NA	35	Continue to monitor	
	RICHMOND-25 25.00KV GEN UNIT V5 and SOBRANTE-R #1 115KV	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	134	<100	<100	<100	<100	<100	Continue to monitor	
	SOBRANTE-R #1 115KV and RICHMOND-25 25/115KV TB 1	P6	N-1-1	<100	<100	<100	<100	<100	<100	134	<100	<100	<100	<100	<100	Continue to monitor	
	RUSCTEECT1 18/230KV TB 1 and TESLA-NEWARK #2 230KV	P6	N-1-1	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	Base Case	P0	Base Case	86	84	84	117	85	103	114	76	100	86	76	83	Continue to monitor	
	LOS ESTEROS-TRIMBLE 115KV	P1	N-1	79	79	81	112	78	97	108	70	94	79	70	79	Continue to monitor	
	CHARCOT-SANJOSEB 230KV	P1	N-1	NA	77	79	98	NA	98	109	NA	97	NA	NA	77	Continue to monitor	
	LS ESTRS 230/115KV TB 4	P1	N-1	85	79	82	112	80	96	108	72	93	85	72	80	Continue to monitor	
	LS ESTRS 230/115KV TB 3	P1	N-1	85	79	82	112	80	96	108	72	93	85	72	80	Continue to monitor	
	NEWARK D 230KV SECTION 2Y	P2	Bus	NA	86	91	128	NA	95	114	NA	89	NA	NA	82	Continue to monitor	
	CHARCOTSS 230KV SECTION B2	P2	Bus	NA	77	79	98	NA	98	109	NA	97	NA	NA	77	Continue to monitor	
	SSS 230(230KV TB 1	CHARCOTSS 230KV SECTION 1E	P2	Bus	NA	77	79	98	NA	98	109	NA	97	NA	NA	77	Continue to monitor
NEWARK D SECTION 1D & NEWARK E SECTION 1E 230KV		P2	Breaker	61	78	Diverge	Diverge	69	88	107	64	83	61	64	79	Continue to monitor	
METCALFE 115KV - SECTION 2E & 1E		P2	Breaker	NA	79	Diverge	Diverge	NA	97	108	NA	94	NA	NA	78	Continue to monitor	
Tesla-Newark No.1 and Tesla-Ravenwood 230 KV Lines		P7	DTCL	77	79	75	Diverge	77	96	106	69	93	77	68	79	Continue to monitor	
Metcalf - El Patio No. 1 & 2 115 KV Lines		P7	DTCL	81	78	78	110	80	96	107	72	93	81	72	78	Continue to monitor	
Metcalf - Evergreen #1 and #2 115 KV Lines Evergreen Direction		P7	DTCL	NA	78	79	110	NA	96	107	NA	93	NA	NA	78	Continue to monitor	
Newark - Northern #1 & #2 115 KV Lines		P7	DTCL	87	77	79	110	81	95	104	69	92	87	68	77	Continue to monitor	
Metcalf - Evergreen #1 and #2 115 KV Lines Metcalf Direction		P7	DTCL	NA	78	79	110	NA	96	107	NA	93	NA	NA	78	Continue to monitor	
Los Esteros - Trimble & Los Esteros - Montague 115 KV		P7	DTCL	84	84	87	117	80	99	112	72	96	81	72	84	Continue to monitor	
Los Esteros - Trimble & Montague - Trimble 115 KV Line		P7	DTCL	80	79	81	112	79	96	108	71	94	80	71	78	Continue to monitor	
LS ESTRSL-25 25.00KV GEN UNIT V8 and Metcalf - San Jose B HVDC Gen		P3	G-1/N-1	<100	<100	<100	Diverge	<100	<100	<100	<100	105	<100	<100	<100	Continue to monitor	
Base Case		P0	Base Case	<100	84	84	112	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
Metcalf - San Jose B HVDC Gen		P1	N-1	NA	80	80	Diverge	NA	103	113	NA	103	NA	NA	78	HVDC, Los Esteros PST, and Los Esteros - Nortech series reactor set-points and/or SVP PST capacity upgrade.	
NEWARK D-NRS #1 230KV		P1	N-1	NA	103	115	157	NA	110	128	NA	100	NA	NA	105	HVDC, Los Esteros PST, and Los Esteros - Nortech series reactor set-points and/or SVP PST capacity upgrade.	
NEWARK D 230KV SECTION 1D		P2	Bus	81	102	109	Diverge	79	109	127	72	99	80	72	102	HVDC, Los Esteros PST, and Los Esteros - Nortech series reactor set-points and/or SVP PST capacity upgrade.	
NEWARK D 230KV - SECTION 1D & 2D		P2	Breaker	83	116	Diverge	Diverge	82	118	138	75	105	83	75	111	HVDC, Los Esteros PST, and Los Esteros - Nortech series reactor set-points and/or SVP PST capacity upgrade.	
MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	81	81	78	Diverge	80	98	108	72	95	81	72	80	Install redundant battery supply	
METCALF 115KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	89	83	81	Diverge	86	100	112	78	98	88	78	82	Install redundant battery supply	
NEWARK 115 KV (FAILURE OF NON-REDUNDANT RELAY)		P5	Non-Redundant Battery/Relay	111	77	80	110	87	93	104	70	92	106	70	77	Install redundant relay	
LOS ESTEROS 115KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY)		P5	Non-Redundant Battery/Relay	102	89	94	Diverge	93	104	120	82	98	99	81	90	Install redundant relay	
MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)		P5	Non-Redundant Battery/Relay	90	86	81	Diverge	87	103	112	80	98	88	80	86	Install redundant relay	
NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)		P5	Non-Redundant Battery/Relay	65	88	53	Diverge	73	98	Diverge	68	89	63	68	Diverge	Project: Newark 230 KV DC Supply and Control Circuit	
ST TRESA-METCALF 115KV		RUSCTEECT1 18.00KV & RUSCTEECT2 15.00KV & RUSCTEECT3 15.00KV GEN UNITS AND METCALF-EDENVALE #2 115KV	P3	G-1/N-1	<100	<100	<100	117	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
		CHARCOT-SANJOSEB 230KV and METCALF-EDENVALE #2 115KV	P6	N-1-1	<100	<100	<100	118	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
	METCALF-EDENVALE #2 115KV	P1	N-1	82	89	108	115	52	37	65	65	27	64	65	70	Continue to monitor	
	METCALF-EDENVALE #2 115KV (EDENVALE-BAILY J2)	P2	Line Section w/o Fault	82	89	108	115	52	37	65							

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)											Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
TRIMBLE - SAN JOSE B 115 KV LINE	MTCALF 115KV BUS (FAILURE OF NON-REDUNDANT RELAY) NRS 400 115 KV bus tie breaker to NRS 300 115 KV bus	P5 P2	Non-Redundant Battery/Relay Breaker	158 163	NA NA	NA NA	NA NA	85 72	NA NA	NA NA	92 45	NA NA	120 135	92 88	NA NA	Install redundant relay Project: San Jose area HVDC line		
TRIMBLE - ZANKER 115 KV LINE	LOS ESTEROS 115KV BAAH BUS (FAILURE OF NON-REDUNDANT RELAY) NEWARK E-F BUS TIE 230KV and LOS ESTEROS-METCALF 230KV	P5 P6	Non-Redundant Battery/Relay N-1-1	139 139	<100 <100	<100 <100	<100 <100	<100 <100	<100 <100	<100 <100	<100 144	<100 <100	<100 <100	<100 <100	<100 NA	Install redundant relay Project: San Jose area HVDC line		
	Los Esteros - Trimble & Los Esteros - Montague 115 KV MEC CTG1 18.00KV & MEC CTG2 18.00KV & MEC STG1 18.00KV GEN UNITS and RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT3 15.00KV GEN UNITS TESLA-METCALF 500KV and MANNING - METCALF 500 KV Base Case	P7 P3 P6	DCTL G-1/N-1 N-1-1	132 NA <100	NA <100 <100	NA <100 Diverge	NA <100 <100	77 NA <100	NA NA <100	87 NA <100	NA NA <100	118 <100 <100	86 <100 <100	<100 <100 <100	<100 <100 <100	Continue to monitor Continue to monitor Continue to monitor		
TRIMBLE - SAN JOSE A 115KV	NEWARK E-F BUS TIE 230KV BINGWOODSWT-MILPITAS #1 115KV TRIMBLE-SAN JOSE B 115KV EL PATIO-SAN JOSE A 115KV CHARCOTSWSTA-MONTAGUE #1 115KV NRS T1 SANJOSEB 115KV SECTION 1G MONTAGUE 115KV SECTION 1F CHARCOTSWSTA 115KV - MIDDLE BREAKER BAY 2 MONTAGUE 115KV - SECTION 1E & 1F Trimble - San Jose B & FMC - San Jose B 115 KV Lines Trimble - San Jose B & Infer - FMC 115 KV Lines Metcalf - El Patio No. 1 & 2 115 KV Lines Metcalf - Evergreen #1 and #2 115 KV Lines Evergreen Direction Metcalf - Evergreen #1 and #2 115 KV Lines Metcalf Direction Los Esteros - Trimble & Los Esteros - Montague 115 KV SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P1 P1 P1 P1 P1 P1 P2 P2 P2 P2 P7 P7 P7 P7 P7 P7 P5	N-1 N-1 N-1 N-1 N-1 N-1 Bus Bus Breaker Breaker DCTL DCTL DCTL DCTL DCTL DCTL Non-Redundant Battery/Relay	NA 81 72 68 72 81 78 NA 79 81 72 69 74 72 72 96 79	121 118 107 115 137 116 156 136 137 134 106 107 127 141 136 116	111 112 92 107 110 112 119 128 130 126 97 95 119 133 135 103	NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA	99 88 92 118 110 123 106 121 123 126 106 107 119 125 125 102	NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA	106 68 79 85 86 92 87 88 86 86 87 87 87 84 85 92	NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA	NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA NA	91 83 87 83 88 89 83 89 88 89 88 85 85 96	Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor Continue to monitor				
	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT) METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT) LOS ESTEROS 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT) NEWARK 115 KV (FAILURE OF NON-REDUNDENT RELAY) LOS ESTEROS 115KV BAAH BUS (FAILURE OF NON-REDUNDENT RELAY) MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY) MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY) LOS ESTEROS-TRIMBLE 115KV SANJOSEB230 230/115KV TB 1 NEWARK F 115KV SECTION 22 LS ESTRS 115KV - MIDDLE BREAKER BAY 4 Newark - Los Esteros & Los Esteros - Metcalf 230 KV Lines SANJOSEB 115KV - MIDDLE BREAKER BAY 5 CHARCOT-SANJOSEB 230KV and FMC-SAN JOSE B 115KV METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT) METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT) MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY) MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY) Los Esteros - Trimble & Montague - Trimble 115 KV Line RUSCTYECT1 18.00KV & RUSCTYECT2 15.00KV & RUSCTYECT3 15.00KV GEN UNITS and HICKS-METCALF 230KV HICKS-METCALF 230KV and MONTA VISTA-COYTE SW STA 230KV Metcalf-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 KV Line CONTRA COSTA-LAS POSITAS 230KV and TESLA-NEWARK #2 230KV MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY) MORAGA 230KV BUS #1 &2(FAILURE OF NON-REDUNDENT RELAY) MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT) METCALF 500-230KV BATT(FAILURE OF NON-REDUNDENT BATT) MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY) NEWARK 230KV BATT(FAILURE OF NON-REDUNDENT BATT) LOS ESTEROS-METCALF 230KV and MTN VIEW-MONTA VISTA 115KV Metcalf - San Jose B HVDC Gen and MTN VIEW-MONTA VISTA 115KV MNTA VSA 115KV - MIDDLE BREAKER BAY 2 Newark-Ravenwood 230 KV and Tesla-Ravenwood 230 KV lines Tesla - Newark No.2 and Metcalf - Los Esteros 230 KV lines Britton-Monta Vista & Lawrence-Monta Vista 115 KV Lines RAVENWOOD 230 KV BAAH BUS (FAILURE OF NON-REDUNDENT RELAY) MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY) METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT) MTCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT) A-X #1 115KV and A-P #1 115KV	P5 P5 P5 P5 P5 P5 P5 P1 P1 P2 P2 P7 P2 P6 P7 P6 P6 P5																

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
LIVERMIRE 60.0 kV	Base Case	P0	Base Case	1.01	1.01	0.96	0.95	1.04	1.04	1.02	1.04	1.04	1.02	1.04	1.00	Continue to monitor		
RADIUM 60.0 kV	Base Case	P0	Base Case	1.01	1.00	0.96	0.94	1.04	1.04	1.02	1.04	1.04	1.01	1.04	1.00	Continue to monitor		
EVGRGN 1115.0 kV	Base Case	P0	Base Case	0.98	1.00	0.94	0.95	1.02	1.02	1.00	1.03	1.02	0.99	1.02	0.99	Continue to monitor		
EVERGREEN 60.0 kV	Base Case	P0	Base Case	0.98	0.99	0.93	0.94	1.03	1.03	1.01	1.04	1.03	0.99	1.04	0.99	Continue to monitor		
ALMADEN 60.0 kV	Base Case	P0	Base Case	0.95	0.96	0.89	0.90	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor		
STONE 115.0 kV	Base Case	P0	Base Case	0.98	0.99	0.94	0.94	1.02	1.02	1.00	1.02	1.02	0.98	1.02	0.98	Continue to monitor		
VALLECTS 60.0 kV	Base Case	P0	Base Case	1.00	1.00	0.96	0.94	1.03	1.03	1.01	1.03	1.04	1.01	1.03	0.99	Continue to monitor		
SANRAMON 230.0 kV	Base Case	P0	Base Case	0.99	0.99	0.95	0.94	1.01	1.02	1.00	1.02	1.02	1.00	1.02	0.97	Continue to monitor		
JEFRSN 0.60.0 kV	Base Case	P0	Base Case	1.01	1.01	0.97	0.95	1.01	1.01	1.00	1.00	1.02	1.02	1.01	1.01	Continue to monitor		
MORAGA 230.0 kV	Base Case	P0	Base Case	1.00	0.99	0.96	0.95	1.01	1.02	1.00	1.02	1.01	1.00	1.02	0.97	Continue to monitor		
SARATOGA 230.0 kV	Base Case	P0	Base Case	1.02	1.01	0.96	0.94	1.02	1.02	0.99	1.02	1.03	1.02	1.02	1.00	Continue to monitor		
VASONA 230.0 kV	Base Case	P0	Base Case	1.02	1.01	0.96	0.95	1.02	1.02	0.99	1.02	1.03	1.02	1.02	1.00	Continue to monitor		
SAN PBL0 115.0 kV	Base Case	P0	Base Case	0.99	0.93	0.91	0.91	1.00	0.97	0.97	1.00	0.99	0.99	1.00	0.93	System adjustments		
MONTAVIS 230.0 kV	Base Case	P0	Base Case	1.02	1.01	0.96	0.95	1.02	1.03	0.99	1.03	1.03	1.02	1.03	1.01	Continue to monitor		
E. SHORE 230.0 kV	Base Case	P0	Base Case	1.00	0.99	0.95	0.92	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.98	Continue to monitor		
ALMADEN 60.0 kV	AMES-MOUNTAIN VIEW 115 kV	P1	N-1	0.95	0.96	0.89	0.90	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor		
VALLECTS 60.0 kV	Charcot - San Jose B 230kV	P1	N-1	NA	1.00	0.96	0.89	NA	1.03	1.00	NA	1.04	NA	NA	0.99	Continue to monitor		
ALMADEN 60.0 kV	Charcot - San Jose B 230kV	P1	N-1	NA	0.96	0.90	0.85	NA	1.03	0.99	NA	1.03	NA	NA	0.96	Continue to monitor		
EVERGREEN 60.0 kV	Charcot - San Jose B 230kV	P1	N-1	NA	0.99	0.94	0.89	NA	1.03	1.01	NA	1.03	NA	NA	0.99	Continue to monitor		
JARVIS 115.0 kV	Charcot - San Jose B 230kV	P1	N-1	NA	1.01	0.96	0.89	NA	1.04	1.01	NA	1.05	NA	NA	1.00	Continue to monitor		
NORTECH 115.0 kV	Charcot - San Jose B 230kV	P1	N-1	NA	1.02	0.96	0.90	NA	1.04	1.01	NA	1.04	NA	NA	1.01	Continue to monitor		
E. SHORE 230.0 kV	Charcot - San Jose B 230kV	P1	N-1	NA	0.99	0.95	0.87	NA	1.01	0.99	NA	1.01	NA	NA	0.97	Continue to monitor		
LOCKHD 1115.0 kV	Charcot - San Jose B 230kV	P1	N-1	NA	1.00	0.96	0.89	NA	1.00	0.99	NA	1.01	NA	NA	0.99	Continue to monitor		
BRITTN 115.0 kV	BRITTON-MONTA VISTA 115kV	P1	N-1	0.98	0.96	0.90	0.90	0.99	0.99	0.96	1.00	1.00	0.98	1.00	0.96	Continue to monitor		
APP MAT 115.0 kV	BRITTON-MONTA VISTA 115kV	P1	N-1	0.98	0.96	0.90	0.90	0.99	0.99	0.96	1.00	1.01	0.98	1.00	0.96	Continue to monitor		
ALMADEN 60.0 kV	CHARCOT-SANJOSEB 230kV	P1	N-1	NA	0.96	0.90	0.85	NA	1.03	0.99	NA	1.03	NA	NA	0.96	Continue to monitor		
LOCKHD 1115.0 kV	CHARCOT-SANJOSEB 230kV	P1	N-1	NA	1.00	0.96	0.89	NA	1.00	0.99	NA	1.01	NA	NA	0.99	Continue to monitor		
E. SHORE 230.0 kV	CHARCOT-SANJOSEB 230kV	P1	N-1	NA	0.99	0.95	0.87	NA	1.01	0.99	NA	1.01	NA	NA	0.97	Continue to monitor		
VALLECTS 60.0 kV	CHARCOT-SANJOSEB 230kV	P1	N-1	NA	1.00	0.96	0.89	NA	1.03	1.00	NA	1.04	NA	NA	0.99	Continue to monitor		
JARVIS 115.0 kV	CHARCOT-SANJOSEB 230kV	P1	N-1	NA	1.01	0.96	0.89	NA	1.04	1.01	NA	1.05	NA	NA	1.00	Continue to monitor		
EVERGREEN 60.0 kV	CHARCOT-SANJOSEB 230kV	P1	N-1	NA	0.99	0.94	0.89	NA	1.03	1.01	NA	1.03	NA	NA	0.99	Continue to monitor		
NORTECH 115.0 kV	CHARCOT-SANJOSEB 230kV	P1	N-1	NA	1.02	0.96	0.90	NA	1.04	1.01	NA	1.04	NA	NA	1.01	Continue to monitor		
ALMADEN 60.0 kV	DVRG0T1 13.80kV & DVRG02 13.80kV & DVRsT3 13.80kV Gen Units	P1	N-1	0.95	0.96	0.88	0.89	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor		
E. SHORE 230.0 kV	EASTSHORE-SAN MATEO 230kV	P1	N-1	0.99	0.97	0.88	0.80	1.00	1.00	0.98	0.95	1.00	0.99	0.95	0.89	Continue to monitor		
ALMADEN 60.0 kV	LAGAS-GILROY F-GILROYENG-GILROYPK 115kV	P1	N-1	0.95	0.96	0.88	0.89	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor		
LIVERMIRE 60.0 kV	LS PSTAS 230/60kV TB 4	P1	N-1	0.98	0.98	0.92	0.89	1.03	1.03	1.00	1.03	1.03	0.98	1.03	0.97	Continue to monitor		
RADIUM 60.0 kV	LS PSTAS 230/60kV TB 4	P1	N-1	0.99	0.98	0.92	0.90	1.03	1.03	1.00	1.03	1.03	0.99	1.03	0.98	Continue to monitor		
LPOSTAS 60.0 kV	LS PSTAS 230/60kV TB 4	P1	N-1	0.98	0.98	0.91	0.89	1.03	1.03	0.99	1.03	1.03	0.98	1.03	0.98	Continue to monitor		
ALMADEN 60.0 kV	METCALF - SVD-V	P1	N-1	0.94	0.95	0.88	0.89	1.02	1.03	0.99	1.03	1.03	0.95	1.03	0.95	Continue to monitor		
MILPITAS 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.99	0.89	Diverge	NA	1.02	0.98	NA	1.03	NA	NA	0.97	Continue to monitor		
JARVIS 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.99	0.90	Diverge	NA	1.04	1.00	NA	1.05	NA	NA	0.98	Continue to monitor		
STONE 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.97	0.87	Diverge	NA	1.02	0.96	NA	1.02	NA	NA	0.95	Continue to monitor		
LOCKHD 1115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.99	0.90	Diverge	NA	1.00	0.97	NA	1.01	NA	NA	0.97	Continue to monitor		
EVGRGN 1115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.98	0.87	Diverge	NA	1.02	0.97	NA	1.02	NA	NA	0.96	Continue to monitor		
MONTAGUE 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	1.00	0.89	Diverge	NA	1.03	0.98	NA	1.03	NA	NA	0.98	Continue to monitor		
SAN PBL0 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.93	0.90	Diverge	NA	0.97	0.97	NA	0.99	NA	NA	0.92	Continue to monitor		
TRIMBLE 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	1.00	0.88	Diverge	NA	1.03	0.98	NA	1.03	NA	NA	0.98	Continue to monitor		
FMC 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.99	0.87	Diverge	NA	1.02	0.97	NA	1.03	NA	NA	0.97	Continue to monitor		
TRIMBL&1 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.99	0.88	Diverge	NA	1.02	0.97	NA	1.03	NA	NA	0.97	Continue to monitor		
EVERGRN 60.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.97	0.86	Diverge	NA	1.03	0.97	NA	1.03	NA	NA	0.96	Continue to monitor		
SN JSE A 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.98	0.88	Diverge	NA	1.02	0.97	NA	1.02	NA	NA	0.96	Continue to monitor		
EL PATIO 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.98	0.88	Diverge	NA	1.02	0.97	NA	1.02	NA	NA	0.96	Continue to monitor		
NORTECH 115.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	1.01	0.89	Diverge	NA	1.04	0.99	NA	1.04	NA	NA	0.99	Continue to monitor		
ALMADEN 60.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.94	0.82	Diverge	NA	1.03	0.96	NA	1.03	NA	NA	0.93	Continue to monitor		
E. SHORE 230.0 kV	MetcalF - San Jose B HVDC Gen	P1	N-1	NA	0.99	0.90	Diverge	NA	1.01	0.98	NA	1.01	NA	NA	0.96	Continue to monitor		
EVERGREEN 60.0 kV	MONTA VISTA-LOS GATOS 60kV	P1	N-1	0.95	0.97	0.89	0.89	1.03	1.03	0.99	1.03	1.03	0.97	1.03	0.97	Continue to monitor		
ALMADEN 60.0 kV	MONTA VISTA-LOS GATOS 60kV	P1	N-1	0.90	0.91	0.80	0.79	1.02	1.01	0.96	1.01	1.03	0.93	1.01	0.93	Loyola and Los Altos area load modeling under review.		
LOS GATS 60.0 kV	MONTA VISTA-LOS GATOS 60kV	P1	N-1	0.87	0.88	0.76	0.75	1.01	1.00	0.93	1.00	1.03	0.90	1.00	0.90	Loyola and Los Altos area load modeling under review.		
VALLECTS 60.0 kV	NEWARK D 115/115kV TB 1	P1	N-1	0.98	0.97	0.93	0.90	1.03	1.03	1.00	1.03	1.03	0.99	1.03	0.96	Continue to monitor		
NEWARK 60.0 kV	NEWARK D 115/115kV TB 1	P1	N-1	0.98	0.96	0.94	0.89	1.04	1.03	1.00	1.03	1.03	0.98	1.03	0.96	Continue to monitor		

				Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)						
Substation	Contingency (All and Worst P6)	Category	Category Description	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	Project & Potential Mitigation Solutions		
RADIUM 60.0 kV	LS PSTAS 230kV SECTION 1G	P2	Bus	0.99	0.98	0.92	0.90	1.03	1.03	1.00	1.03	1.03	0.99	1.03	0.98	Continue to monitor		
LOPSTAS 60.0 kV	LS PSTAS 230kV SECTION 1G	P2	Bus	0.98	0.98	0.91	0.89	1.03	1.03	0.99	1.03	1.03	0.98	1.03	0.98	Continue to monitor		
LIVERMINE 60.0 kV	LS PSTAS 230kV SECTION 1G	P2	Bus	0.98	0.98	0.92	0.89	1.03	1.03	1.00	1.03	1.03	0.98	1.03	0.98	Continue to monitor		
EVGRIN 115.0 kV	METCALF 230kV - SECTION 1D & 1E	P2	Breaker	0.95	0.97	0.90	Diverge	1.02	1.02	0.99	1.02	1.02	0.96	1.02	0.95	Continue to monitor		
STONE 115.0 kV	METCALF 230kV - SECTION 1D & 1E	P2	Breaker	0.94	0.97	0.89	Diverge	1.02	1.01	0.98	1.02	1.02	0.95	1.02	0.95	Continue to monitor		
VASONA 230.0 kV	METCALF 230kV - SECTION 1D & 1E	P2	Breaker	0.99	0.98	0.89	Diverge	1.03	1.03	0.96	1.03	1.04	1.00	1.04	0.96	Continue to monitor		
SARATOGA 230.0 kV	METCALF 230kV - SECTION 1D & 1E	P2	Breaker	0.99	0.98	0.90	Diverge	1.03	1.02	0.96	1.03	1.04	1.00	1.04	0.96	Continue to monitor		
EVERGREEN 60.0 kV	METCALF 230kV - SECTION 1E & 2E	P2	Breaker	0.96	0.98	0.89	0.90	1.03	1.03	1.00	1.03	1.03	0.97	1.04	0.96	Continue to monitor		
STONE 115.0 kV	METCALF 230kV - SECTION 1E & 2E	P2	Breaker	0.96	0.98	0.90	0.91	1.02	1.01	0.99	1.02	1.02	0.96	1.02	0.96	Continue to monitor		
EVGRIN 115.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.95	0.98	0.89	Diverge	1.02	1.01	0.99	1.02	1.02	0.97	1.02	0.96	Continue to monitor		
SARATOGA 230.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	1.00	1.00	0.90	Diverge	1.02	1.02	0.97	1.02	1.03	1.01	1.03	0.99	Continue to monitor		
SAN PBLD 115.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.99	0.93	0.90	Diverge	1.00	0.97	0.97	1.00	0.99	0.99	1.00	0.92	Continue to monitor		
STONE 115.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.95	0.97	0.88	Diverge	1.02	1.01	0.99	1.02	1.02	0.96	1.02	0.95	Continue to monitor		
EVERGREEN 60.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.95	0.98	0.87	Diverge	1.03	1.02	1.00	1.03	1.03	0.96	1.04	0.96	Continue to monitor		
HICKS 230.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.99	0.99	0.88	Diverge	1.03	1.03	0.98	1.04	1.04	1.00	1.04	0.98	Continue to monitor		
EL PATIO 115.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.96	0.99	0.90	Diverge	1.02	1.02	1.00	1.03	1.02	0.97	1.03	0.97	Continue to monitor		
SN JSE A 115.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.96	1.00	0.90	Diverge	1.02	1.02	1.00	1.03	1.02	0.97	1.03	0.97	Continue to monitor		
ALMADEN 60.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.92	0.95	0.83	Diverge	1.02	1.02	0.98	1.03	1.03	0.94	1.03	0.93	Continue to monitor		
MONTAVIS 230.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	1.00	1.00	0.90	Diverge	1.03	1.03	0.98	1.03	1.03	1.01	1.04	0.99	Continue to monitor		
FMC 115.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	0.96	1.00	0.90	Diverge	1.01	1.02	1.00	1.02	1.03	0.97	1.02	0.98	Continue to monitor		
CAL MEC 230.0 kV	METCALF 230kV - SECTION 2D & 2E	P2	Breaker	1.01	1.01	0.90	Diverge	1.03	1.02	1.00	1.03	1.04	1.01	1.04	1.01	Continue to monitor		
MCKEE 115.0 kV	METCALF SECTION 2D & METCALFE SECTION 2E 115kV	P2	Breaker	0.95	0.92	0.83	0.82	1.01	0.99	0.95	1.03	1.01	0.96	1.03	0.93	Continue to monitor		
PIERCY 115.0 kV	METCALF SECTION 2D & METCALFE SECTION 2E 115kV	P2	Breaker	0.94	0.91	0.81	0.80	1.01	0.98	0.94	1.03	1.00	0.96	1.03	0.92	Continue to monitor		
EVERGREEN 60.0 kV	METCALF SECTION 2D & METCALFE SECTION 2E 115kV	P2	Breaker	0.95	0.99	0.90	0.91	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.98	Continue to monitor		
MCKEE 115.0 kV	METCALFE - 2E 115kV & METCALFE-METCALFE LINE	P2	Breaker	0.95	0.92	0.83	0.82	1.01	0.99	0.95	1.03	1.01	0.96	1.03	0.93	Continue to monitor		
EVERGREEN 60.0 kV	METCALFE - 2E 115kV & METCALFE-METCALFE LINE	P2	Breaker	0.95	0.98	0.90	0.91	1.02	1.02	1.00	1.03	1.02	0.96	1.03	0.97	Continue to monitor		
PIERCY 115.0 kV	METCALFE - 2E 115kV & METCALFE-METCALFE LINE	P2	Breaker	0.94	0.91	0.81	0.80	1.01	0.98	0.94	1.03	1.00	0.96	1.03	0.92	Continue to monitor		
PIERCY 115.0 kV	METCALFE - 2E 115kV & METCALFE-METCALFE LINE (2)	P2	Breaker	0.94	0.91	0.81	0.80	1.01	0.98	0.94	1.03	1.00	0.96	1.03	0.92	Continue to monitor		
EVERGREEN 60.0 kV	METCALFE - 2E 115kV & METCALFE-METCALFE LINE (2)	P2	Breaker	0.95	0.98	0.90	0.91	1.02	1.02	1.00	1.03	1.02	0.96	1.03	0.97	Continue to monitor		
MCKEE 115.0 kV	METCALFE - 2E 115kV & METCALFE-METCALFE LINE (2)	P2	Breaker	0.95	0.92	0.83	0.82	1.01	0.99	0.95	1.03	1.01	0.96	1.03	0.93	Continue to monitor		
EVERGREEN 60.0 kV	METCALFE 115kV - SECTION 1E & 2E	P2	Breaker	0.90	NA	NA	NA	1.00	NA	NA	1.01	NA	0.91	1.01	NA	Invalid contingency		
STONE 115.0 kV	METCALFE 115kV - SECTION 1E & 2E	P2	Breaker	0.90	NA	NA	NA	0.98	NA	NA	0.99	NA	0.91	0.99	NA	Invalid contingency		
ALMADEN 60.0 kV	METCALFE 115kV - SECTION 1E & 2E	P2	Breaker	0.87	NA	NA	NA	0.99	NA	NA	1.00	NA	0.80	1.00	NA	Invalid contingency		
PIERCY 115.0 kV	METCALFE 115kV - SECTION 2E & 1E	P2	Breaker	NA	0.90	Diverge	Diverge	NA	0.97	0.92	NA	0.99	NA	NA	0.91	Invalid contingency		
PIERCY 115.0 kV	METCALFE 115kV SECTION 2E	P2	Bus	0.94	0.91	0.81	0.80	1.01	0.98	0.94	1.03	1.00	0.96	1.03	0.92	Continue to monitor		
MCKEE 115.0 kV	METCALFE 115kV SECTION 2E	P2	Bus	0.95	0.92	0.83	0.82	1.01	0.99	0.95	1.03	1.01	0.96	1.03	0.94	Continue to monitor		
BRITTIN 115.0 kV	MNTA VSA 115kV - MIDDLE BREAKER BAY 2	P2	Breaker	0.98	0.96	0.89	0.89	0.99	0.99	0.96	1.00	1.01	0.98	1.00	0.96	Continue to monitor		
APP MAT 115.0 kV	MNTA VSA 115kV - MIDDLE BREAKER BAY 2	P2	Breaker	0.98	0.96	0.90	0.90	0.99	0.99	0.96	1.00	1.01	0.98	1.00	0.96	Continue to monitor		
ALMADEN 60.0 kV	MONTAGUE 115kV - SECTION 1E & 1F	P2	Breaker	NA	NA	0.90	0.90	NA	NA	0.99	NA	1.03	NA	NA	NA	Continue to monitor		
E. SHORE 230.0 kV	MONTAVIS 230kV - SECTION 1D & 2D	P2	Breaker	1.00	0.99	0.92	0.90	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.97	Continue to monitor		
JARVIS 115.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	1.01	1.01	0.96	0.89	1.03	1.04	1.02	1.03	1.05	1.01	1.03	1.01	Continue to monitor		
STONE 115.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	0.98	0.99	0.93	0.90	1.02	1.02	1.00	1.02	1.02	0.98	1.02	0.98	Continue to monitor		
VALLECTS 60.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	1.00	1.00	0.95	0.90	1.03	1.03	1.01	1.03	1.04	1.01	1.03	0.99	Continue to monitor		
GRANT 115.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	1.02	1.01	1.00	0.85	1.02	1.02	1.01	1.03	1.05	1.03	1.03	1.02	Continue to monitor		
SN LINDRO 115.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	0.98	0.96	0.95	0.77	1.00	1.01	0.98	1.01	1.04	0.99	1.01	0.98	Continue to monitor		
JEFRSN_D 60.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	1.01	1.01	0.96	0.90	1.01	1.01	0.99	1.00	1.02	1.02	1.01	1.01	Continue to monitor		
EDES 115.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	1.00	0.99	0.98	0.81	1.01	1.02	1.00	1.02	1.05	1.01	1.02	1.00	Continue to monitor		
E. SHORE 230.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	1.00	0.98	0.92	0.82	1.01	1.00	0.97	0.99	1.01	1.01	0.99	0.97	Continue to monitor		
OAKLAND-J 115.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	1.00	0.99	0.97	0.79	1.01	1.02	0.99	1.02	1.04	1.01	1.02	1.00	Continue to monitor		
EVERGREEN 60.0 kV	MORAGA 115kV - SECTION 1E & 2E	P2	Breaker	0.98	0.99	0.92	0.89	1.03	1.03	1.01	1.04	1.03	0.99	1.04	0.99	Continue to monitor		
NEWARK 60.0 kV	NEWARK D - 2D 115kV & NEWARK-JARVIS #2 LINE	P2	Breaker	0.97	0.96	0.94	0.89	1.04	1.03	1.00	1.03	1.03	0.98	1.03	0.95	Continue to monitor		
VALLECTS 60.0 kV	NEWARK D - 2D 115kV & NEWARK-JARVIS #2 LINE	P2	Breaker	0.98	0.97	0.93	0.90	1.03	1.03	1.00	1.03	1.03	0.99	1.03	0.96	Continue to monitor		
NEWARK 60.0 kV	NEWARK D 115kV - SECTION 2D & 1D	P2	Breaker	0.97	0.96	0.94	0.89	1.04	1.03	1.00	1.03	1.03	0.98	1.03	0.96	Continue to monitor		
VALLECTS 60.0 kV	NEWARK D 115kV - SECTION 2D & 1D	P2	Breaker	0.98	0.97	0.93	0.90	1.03	1.03	1.00	1.03	1.03	0.99	1.03	0.96	Continue to monitor		
NEWARK 60.0 kV	NEWARK D 115kV SECTION 2D	P2	Bus	0.97	0.96	0.94	0.89	1.04	1.03	1.00	1.03	1.03	0.98	1.03				

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast			
EL PATIO 115.0 kV	NRS 400 115 kV bus tie breaker to NRS 300 115 kV bus	P2	Breaker	0.85	NA	NA	NA	0.99	NA	NA	1.02	NA	0.86	1.02	NA	Project: NRS rebuild		
ALMADEN 60.0 kV	NRS 400 115 kV bus tie breaker to NRS 300 115 kV bus	P2	Breaker	0.82	NA	NA	NA	1.00	NA	NA	1.02	NA	0.84	1.02	NA	Project: NRS rebuild		
EVERGREEN 60.0 kV	NRS 400 115 kV bus tie breaker to NRS 300 115 kV bus	P2	Breaker	0.85	NA	NA	NA	1.00	NA	NA	1.03	NA	0.86	1.03	NA	Project: NRS rebuild		
SN JSE A 115.0 kV	NRS 400 115 kV bus tie breaker to NRS 300 115 kV bus	P2	Breaker	0.84	NA	NA	NA	0.98	NA	NA	1.02	NA	0.84	1.02	NA	Project: NRS rebuild		
SANRAMON 230.0 kV	PITTSBURG-D - 2D 230KV & PITTSBURG-D-TBC, PTB1 #1 LINE	P2	Breaker	0.98	0.96	0.91	0.89	1.01	1.02	0.98	1.02	1.02	0.99	1.03	0.96	Continue to monitor		
LAKEWD-115.0 kV	PITTSBURG-D 115KV - SECTION 2D & 1D	P2	Breaker	1.00	0.99	0.91	0.90	1.04	1.04	1.02	1.03	1.04	1.01	1.03	0.98	Continue to monitor		
SANRAMON 230.0 kV	PITTSBURG-D 230KV - SECTION 2D & 1D	P2	Breaker	0.97	0.96	0.89	0.88	1.01	1.02	0.98	1.02	1.02	0.98	1.02	0.95	Continue to monitor		
SAN PBLO 115.0 kV	PITTSBURG-D 230KV - SECTION 2D & 1D	P2	Breaker	0.99	0.93	0.90	0.90	1.00	0.97	0.97	1.00	0.99	0.99	1.00	0.93	Continue to monitor		
SANRAMON 230.0 kV	PITTSBURG-D 230KV SECTION 2D	P2	Bus	0.98	0.96	0.90	0.89	1.01	1.02	0.98	1.02	1.02	0.99	1.03	0.96	Continue to monitor		
SANRAMON 230.0 kV	PITTSBURG-D SECTION 2D & PITTSBURG-E SECTION 2E 230KV	P2	Breaker	0.98	0.96	0.90	0.89	1.01	1.02	0.98	1.02	1.02	0.99	1.02	0.94	Continue to monitor		
SAN PBLO 115.0 kV	PITTSBURG-F 230KV - SECTION 2F & 1F	P2	Breaker	NA	0.92	0.89	0.90	NA	0.97	0.96	NA	1.00	NA	NA	0.92	Continue to monitor		
E. SHORE 230.0 kV	POTRERO - 1E 115KV & LINE	P2	Breaker	1.00	0.99	0.94	0.90	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.98	Continue to monitor		
E. SHORE 230.0 kV	POTRERO 115KV SECTION 1E	P2	Bus	1.00	0.99	0.94	0.90	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.98	Continue to monitor		
ALMADEN 60.0 kV	RAVENSWD 230KV - MIDDLE BREAKER BAY 4	P2	Breaker	0.95	0.96	0.88	0.89	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor		
STONE 115.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (MARKHH J-EVRGRN 1)	P2	Line Section w/o Fault	0.98	0.98	0.90	0.89	1.02	1.02	0.99	1.02	1.02	0.99	1.02	0.97	Continue to monitor		
EVERGREEN 60.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (MARKHH J-EVRGRN 1)	P2	Line Section w/o Fault	0.98	0.98	0.89	0.88	1.04	1.03	1.00	1.04	1.03	0.99	1.04	0.97	Continue to monitor		
ALMADEN 60.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (MARKHH J-EVRGRN 1)	P2	Line Section w/o Fault	0.95	0.95	0.85	0.83	1.03	1.03	0.98	1.03	1.03	0.97	1.03	0.95	Continue to monitor		
EVGRN 1 115.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (MARKHH J-EVRGRN 1)	P2	Line Section w/o Fault	0.98	0.98	0.91	0.89	1.03	1.02	0.99	1.03	1.02	0.99	1.02	0.98	Continue to monitor		
ALMADEN 60.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (SANJOSE-MARKHH J)	P2	Line Section w/o Fault	NA	0.95	0.85	0.83	NA	1.03	0.98	NA	1.03	NA	NA	0.95	Continue to monitor		
STONE 115.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (SANJOSE-MARKHH J)	P2	Line Section w/o Fault	NA	0.97	0.90	0.88	NA	1.02	0.99	NA	1.02	NA	NA	0.97	Continue to monitor		
EVERGREEN 60.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (SANJOSE-MARKHH J)	P2	Line Section w/o Fault	NA	0.97	0.89	0.87	NA	1.03	0.99	NA	1.03	NA	NA	0.97	Continue to monitor		
EVGRN 1 115.0 kV	SAN JOSE B-STONE-EVERGREEN 115KV (SANJOSE-MARKHH J)	P2	Line Section w/o Fault	NA	0.98	0.90	0.89	NA	1.02	0.99	NA	1.02	NA	NA	0.97	Continue to monitor		
EVGRN 1 115.0 kV	SANJOSEB 115KV - MIDDLE BREAKER BAY 2	P2	Breaker	NA	0.98	0.91	0.89	NA	1.02	0.99	NA	1.02	NA	NA	0.98	Continue to monitor		
STONE 115.0 kV	SANJOSEB 115KV - MIDDLE BREAKER BAY 2	P2	Breaker	NA	0.98	0.90	0.89	NA	1.02	0.99	NA	1.02	NA	NA	0.97	Continue to monitor		
ALMADEN 60.0 kV	SANJOSEB 115KV - MIDDLE BREAKER BAY 2	P2	Breaker	NA	0.95	0.85	0.83	NA	1.03	0.98	NA	1.03	NA	NA	0.95	Continue to monitor		
EVERGREEN 60.0 kV	SANJOSEB 115KV - MIDDLE BREAKER BAY 2	P2	Breaker	NA	0.98	0.89	0.88	NA	1.03	1.00	NA	1.03	NA	NA	0.97	Continue to monitor		
SN JSE A 115.0 kV	SANJOSEB 115KV - MIDDLE BREAKER BAY 4	P2	Breaker	NA	0.96	0.91	0.90	NA	0.97	0.95	NA	0.98	NA	NA	0.92	Continue to monitor		
E. SHORE 230.0 kV	SANMATED 230KV SECTION 2D	P2	Bus	0.99	0.97	0.88	0.80	1.00	1.00	0.98	0.95	1.00	0.99	0.95	0.89	Continue to monitor		
SANRAMON 230.0 kV	SANRAMON 230KV SECTION 2D	P2	Bus	0.98	0.96	0.91	0.89	1.01	1.02	0.98	1.02	1.02	0.98	1.02	0.96	Continue to monitor		
SN JSE A 115.0 kV	SN JSE A 115KV SECTION 1F	P2	Bus	1.01	0.96	0.91	0.89	1.04	0.97	0.95	1.04	0.98	1.01	1.04	0.92	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE - 1D 115KV & SOBRANTE-G #1 LINE	P2	Breaker	0.97	NA	NA	0.87	0.97	NA	0.92	0.97	0.96	0.97	0.97	0.88	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE - 1D 115KV & SOBRANTE-GRIZZLY-CLAREMONT #1 LINE	P2	Breaker	0.97	NA	NA	0.87	0.97	NA	0.92	0.97	0.96	0.97	0.97	0.88	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE - 1D 115KV & SOBRANTE-NORTH TWR LINE	P2	Breaker	NA	NA	NA	0.87	NA	NA	0.92	NA	0.96	NA	NA	0.88	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE - 1D 115KV & SOBRANTE-OAKLAND-D LINE	P2	Breaker	NA	NA	NA	0.87	NA	NA	0.92	NA	0.96	NA	NA	0.88	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE - 1D 115KV & SOBRANTE-R #1 LINE	P2	Breaker	0.97	NA	NA	0.87	0.97	NA	0.92	0.97	0.96	0.97	0.97	0.88	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE - 2D 115KV & SOBRANTE-STANDARD OIL SW STA #1 LINE	P2	Breaker	0.97	0.99	0.87	0.89	0.98	0.93	0.94	0.98	0.98	0.98	0.98	0.90	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 115KV - SECTION 1E & 1D	P2	Breaker	NA	NA	NA	0.87	NA	NA	0.92	NA	0.96	NA	NA	0.88	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 115KV - SECTION 2E & 2D	P2	Breaker	0.97	0.98	0.94	0.88	0.98	1.02	0.93	0.98	0.98	0.98	0.98	0.89	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 115KV SECTION 1D	P2	Bus	0.97	NA	NA	0.87	0.97	NA	0.92	0.97	0.96	0.97	0.97	0.88	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 115KV SECTION 2D	P2	Bus	0.98	0.99	0.94	0.89	0.98	1.03	0.93	0.98	0.98	0.98	0.98	0.90	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 230KV - SECTION 1D & 1E	P2	Breaker	NA	0.92	0.90	0.91	NA	0.97	0.97	NA	0.99	NA	NA	0.92	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 230KV - SECTION 1E & 2E	P2	Breaker	NA	0.92	0.89	0.90	NA	0.97	0.95	NA	1.00	NA	NA	0.92	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 230KV - SECTION 2D & 1D	P2	Breaker	0.97	0.92	0.90	0.90	0.99	0.96	0.97	0.98	0.99	0.98	0.99	0.91	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE 230KV - SECTION 2D & 2E	P2	Breaker	NA	0.92	0.89	0.90	NA	0.96	0.95	NA	1.00	NA	NA	0.92	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE-STANDARD OIL SW STA #1 115KV (PTPNLTAP-SNPBLTP2)	P2	Line Section w/o Fault	0.98	1.00	0.96	0.89	0.98	1.03	0.94	0.98	0.98	0.98	0.98	0.90	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE-STANDARD OIL SW STA #1 115KV (STD. OIL-PTPNLTAP)	P2	Line Section w/o Fault	0.98	1.00	0.96	0.90	0.98	0.94	0.94	0.98	0.98	0.98	0.98	0.90	Continue to monitor		
SAN PBLO 115.0 kV	SOBRANTE-STANDARD OIL SW STA #2 115KV (SNPBLTP1-SOBRANTE)	P2	Line Section w/o Fault	0.97	NA	NA	0.87	0.97	NA	0.92	0.97	0.97	0.97	0.97	0.89	Continue to monitor		
SAN PBLO 115.0 kV	STD. OIL 115KV - MIDDLE BREAKER BAY 1	P2	Breaker	0.98	1.00	0.96	0.90	0.98	0.94	0.94	0.98	0.98	0.98	0.98	0.90	Continue to monitor		
FREMONT 115.0 kV	Metcalfe - San Jose B HVDC Gen and BRITTON-MONTA VISTA 115KV	P3	G-1/N-1	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor		
LLAGAS 115.0 kV	Metcalfe - San Jose B HVDC Gen and LLAGAS-GILROY F-GILROYEY-GILROYK 115KV	P3	G-1/N-1	>0.9	>0.9	0.87	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor		
LOS GATOS 60.0 kV	Metcalfe - San Jose B HVDC Gen and MONTA VISTA-LOS GATOS 60KV	P3	G-1/N-1	>0.9	0.85	0.64	>0.9	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	0.80	Operating solution		
POTRERO 230.0 kV	Metcalfe - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor		
MARTIN C 230.0 kV	Metcalfe - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor		
SANMATED 230.0 kV	Metcalfe - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	>0.9	>0.9	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor		
RAVENSWD 230.0 kV	Metcalfe - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-1/N-1	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor		
JEFFERSON 230.0 kV	Metcalfe - San Jose B HVDC Gen and NEWARK D-NRS #1 230KV	P3	G-&															

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
SANRAMON 230.0 kV	Metcalf - San Jose B HVDC Gen and PITTSBURG-SAN RAMON 230KV	P3	G-1/N-1	>0.9	>0.9	0.87	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
TASSAJAR 230.0 kV	Metcalf - San Jose B HVDC Gen and PITTSBURG-TASSAJARA 230KV	P3	G-1/N-1	>0.9	>0.9	0.90	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
SAN RAMN 60.0 kV	Metcalf - San Jose B HVDC Gen and SANRAMON 230/60KV TB 1	P3	G-1/N-1	>0.9	>0.9	0.87	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
SAN PBL0 115.0 kV	Metcalf - San Jose B HVDC Gen and SOBRANTE-STANDARD OIL SW STA #1 115KV OX_MTN 4.16KV & OX_MTN 4.16KV & OX_MTN 4.16KV & OX_MTN 4.16KV & OX_MTN 4.16KV & OX_MTN 4.16KV & OX_MTN 4.16KV and SAN MATEO-HILSDALE JCT 60KV. MOAS OPENED ON SAN MATEO, BERESFSD	P3	G-1/N-1	>0.9	>0.9	0.87	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.93	Continue to monitor	
HLF MNBY 60.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	0.90	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
E. SHORE 230.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	0.87	0.80	0.80	0.60	>0.9	0.86	0.86	>0.9	>0.9	0.91	>0.9	0.84	Continue to monitor	
MT EDEN 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.73	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
DUMBARTN 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.78	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
MORAGA 230.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
OAKLAND-C 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
OAKLAND-X 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
EDES 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.77	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
MORAGA-C 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
OAKLAND-J 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.79	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
EASTSHRE 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.73	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
SN LNDR0 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
GRANT 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and EASTSHORE-SAN MATEO 230KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.74	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
LPOSTAS 60.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and L5 PSTAS 230/60KV TB 4	P3	G-1/N-1	>0.9	>0.9	0.89	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
EST GRND 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and MARTIN-EAST GRAND 115KV	P3	G-1/N-1	>0.9	>0.9	0.89	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
SNTH LNE 60.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and MARTIN-SNEATH LANE 60KV	P3	G-1/N-1	>0.9	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
PACIFICA 60.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and MARTIN-SNEATH LANE 60KV	P3	G-1/N-1	>0.9	>0.9	0.89	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
PIERCY 115.0 kV	RUSCTYECST1 18.00KV & RUSCTYECCT2 15.00KV & RUSCTYECCT1 15.00KV GEN UNITS and PIERCY-METCALF 115KV	P3	G-1/N-1	>0.9	>0.9	0.76	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
ALMADEN 60.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.94	0.96	0.86	0.86	1.02	1.03	0.98	1.03	1.03	0.96	1.03	0.95	Install redundant relay/battery supply	
ROSSMOOR 230.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.92	0.90	1.01	1.02	0.99	1.02	1.01	0.98	1.02	0.94	Install redundant relay/battery supply	
MORAGA 230.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.96	0.92	0.90	1.01	1.02	0.99	1.02	1.01	0.99	1.02	0.94	Install redundant relay/battery supply	
E. SHORE 230.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.92	0.89	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.96	Install redundant relay/battery supply	
EVERGREEN 60.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.97	0.99	0.90	0.90	1.03	1.03	1.00	1.04	1.03	0.98	1.04	0.98	Install redundant relay/battery supply	
SAN PBL0 115.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.93	0.89	0.89	1.00	0.97	0.97	1.00	0.99	0.99	1.00	0.91	Install redundant relay/battery supply	
VALLECTS 60.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.99	0.99	0.93	0.90	1.03	1.03	1.01	1.03	1.04	1.00	1.03	0.98	Install redundant relay/battery supply	
RADUM 60.0 kV	C.COSTAPP 230KV BUS 1&2(FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.92	0.90	1.04	1.04	1.01	1.04	1.04	1.01	1.04	0.98	Install redundant relay/battery supply	
SAN PBL0 115.0 kV	CONTRA COSTA PP 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.93	0.90	0.90	1.00	0.97	0.97	1.00	0.99	0.99	1.00	0.92	Install redundant relay/battery supply	
E. SHORE 230.0 kV	CONTRA COSTA PP 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.92	0.90	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.97	Install redundant relay/battery supply	
OAKLAND-J 115.0 kV	EAST SHORE 115 KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.97	0.74	0.92	0.91	1.01	1.00	1.00	1.00	1.04	0.99	1.00	0.94	Install redundant relay/battery supply	
GRANT 115.0 kV	EAST SHORE 115 KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.96	0.73	0.91	0.89	1.00	1.00	1.00	1.00	1.04	0.98	1.00	0.94	Install redundant relay/battery supply	
EDES 115.0 kV	EAST SHORE 115 KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.97	0.73	0.92	0.90	1.00	1.00	1.00	1.00	1.05	0.98	1.00	0.94	Install redundant relay/battery supply	
OAKLAND-J 115.0 kV	EASTSHORE 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.74	0.92	0.91	1.01	1.00	1.00	1.00	1.04	0.99	1.00	0.94	Install redundant relay/battery supply	
GRANT 115.0 kV	EASTSHORE 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.73	0.91	0.89	1.00	1.00	1.00	1.00	1.04	0.98	1.00	0.94	Install redundant relay/battery supply	
EDES 115.0 kV	EASTSHORE 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.73	0.92	0.90	1.00	1.00	1.00	1.00	1.05	0.98	1.00	0.94	Install redundant relay/battery supply	
EVERGREEN 60.0 kV	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.98	0.89	0.91	1.03	1.03	1.00	1.04	1.03	0.98	1.04	0.96	Install redundant relay/battery supply	
MT EDEN 115.0 kV	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.91	0.79	0.80	0.78	0.98	0.90	0.91	0.99	0.99	0.96	0.99	0.77	Install redundant relay/battery supply	
DUMBARTN 115.0 kV	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.85	0.84	0.83	1.00	0.93	0.94	1.00	1.01	0.97	1.00	0.82	Install redundant relay/battery supply	
JARVIS 115.0 kV	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.95	0.89	0.90	1.02	1.01	0.99	1.02	1.04	0.99	1.02	0.94	Install redundant relay/battery supply	
EDES 115.0 kV	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.90	0.79	0.83	0.81	0.99	0.90	0.94	0.99	1.01	0.96	0.99	0.77	Install redundant relay/battery supply	
VALLECTS 60.0 kV	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.96	0.91	0.90	1.03	1.02	0.99	1.03	1.03	0.99	1.03	0.95	Install redundant relay/battery supply	
EASTSHRE 115.0 kV	EASTSHORE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.91	0.79	0.80	0.79	0.98	0.90	0.92	0.99	0.99	0.96	0.99	0.77	Install redundant relay/battery supply	
ALMADEN 60.0 kV																	

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
FMC 115.0 kV	LOS ESTEROS 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.91	0.99	0.90	Diverge	0.97	1.02	0.99	1.01	1.03	0.93	1.01	0.97	Install redundant relay/battery supply	
EST GRND 115.0 kV	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	Diverge	0.85	0.99	0.99	Diverge	0.99	0.98	0.99	0.99	0.97	Install redundant relay/battery supply	
MILLBRAE 115.0 kV	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	1.00	1.00	Diverge	0.90	1.01	1.01	Diverge	1.01	1.02	1.00	1.01	1.00	Install redundant relay/battery supply	
E. SHORE 230.0 kV	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.99	Diverge	0.88	1.01	1.01	Diverge	1.00	1.01	1.01	1.00	0.98	Install redundant relay/battery supply	
SNTH LNE 60.0 kV	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	Diverge	0.86	1.00	1.01	Diverge	1.02	1.02	0.99	1.02	0.98	Install redundant relay/battery supply	
PACIFICA 60.0 kV	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.98	Diverge	0.85	1.00	1.00	Diverge	1.01	1.02	0.99	1.02	0.98	Install redundant relay/battery supply	
HLF MNBV 60.0 kV	MARTIN (SF H) 230-115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	Diverge	0.90	1.03	1.03	Diverge	1.02	1.04	1.03	1.03	1.03	Install redundant relay/battery supply	
LARKIN D 115.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.03	1.04	1.12	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.04	Install redundant relay/battery supply	
MISSION 115.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.03	1.04	1.12	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.04	Install redundant relay/battery supply	
HNTRS PT 115.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.03	1.04	1.12	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.04	Install redundant relay/battery supply	
E. SHORE 230.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.92	0.89	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.98	Install redundant relay/battery supply	
POTRERO 115.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.03	1.04	1.12	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.04	Install redundant relay/battery supply	
SNTH LNE 60.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.90	0.86	1.00	1.00	0.96	1.02	1.01	1.00	1.02	0.98	Install redundant relay/battery supply	
EST GRND 115.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.88	0.85	0.99	0.98	0.94	0.99	0.98	0.99	0.99	0.97	Install redundant relay/battery supply	
PACIFICA 60.0 kV	MARTIN 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.89	0.85	1.00	0.99	0.96	1.02	1.01	1.00	1.01	0.98	Install redundant relay/battery supply	
ALMADEN 60.0 kV	MCKEE 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.96	0.90	0.90	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Install redundant relay/battery supply	
EL PATIO 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.88	0.98	0.84	Diverge	0.99	1.01	0.96	1.00	1.01	0.89	1.00	0.96	Install redundant relay/battery supply	
ALMADEN 60.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.82	0.92	0.71	Diverge	0.99	1.00	0.91	1.00	1.00	0.85	1.00	0.91	Install redundant relay/battery supply	
STONE 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.85	0.95	0.77	Diverge	0.98	1.00	0.92	0.99	0.99	0.87	0.99	0.93	Install redundant relay/battery supply	
TRIMBLE 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.94	1.00	0.87	Diverge	1.00	1.03	0.97	1.01	1.02	0.94	1.01	0.98	Install redundant relay/battery supply	
SN JSE A 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.88	0.98	0.85	Diverge	0.99	1.01	0.96	1.00	1.01	0.90	1.00	0.96	Install redundant relay/battery supply	
MILPITAS 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.87	Diverge	1.01	1.00	0.97	1.02	1.02	0.98	1.02	0.96	Install redundant relay/battery supply	
EVGRGN 1 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.86	0.96	0.78	Diverge	0.99	1.00	0.92	0.99	0.99	0.87	0.99	0.94	Install redundant relay/battery supply	
SIB DG 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.89	1.00	0.86	Diverge	0.99	1.02	0.97	1.00	1.02	0.90	1.00	0.98	Install redundant relay/battery supply	
FMC 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.90	0.99	0.86	Diverge	0.99	1.02	0.96	1.00	1.02	0.91	1.00	0.97	Install redundant relay/battery supply	
PIERCY 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.91	0.90	0.76	Diverge	1.01	0.97	0.91	1.02	0.99	0.94	1.02	0.90	Install redundant relay/battery supply	
EVERGREN 60.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.85	0.95	0.76	Diverge	1.00	1.01	0.93	1.01	1.00	0.87	1.01	0.93	Install redundant relay/battery supply	
NORTECH 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.97	1.01	0.89	Diverge	1.01	1.04	0.99	1.02	1.04	0.96	1.02	1.00	Install redundant relay/battery supply	
SWIFT 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.94	0.84	Diverge	1.01	1.00	0.96	1.02	1.02	0.96	1.02	0.94	Install redundant relay/battery supply	
DIXON LD 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.97	0.87	Diverge	1.01	1.01	0.97	1.02	1.03	0.97	1.02	0.97	Install redundant relay/battery supply	
MCKEE 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.92	0.91	0.78	Diverge	1.01	0.98	0.92	1.02	1.00	0.94	1.02	0.92	Install redundant relay/battery supply	
MONTAGUE 115.0 kV	METCALF 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	1.00	0.88	Diverge	1.00	1.03	0.98	1.01	1.02	0.95	1.01	0.99	Install redundant relay/battery supply	
LOCKHD 2 115.0 kV	MONTA VISTA 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.89	0.89	1.00	1.00	0.97	1.01	1.02	0.98	1.01	0.96	Install redundant relay/battery supply	
LAWRENCE 115.0 kV	MONTA VISTA 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.96	0.89	0.89	1.00	1.00	0.96	1.02	1.01	0.98	1.02	0.95	Install redundant relay/battery supply	
BRITTN 115.0 kV	MONTA VISTA 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.97	0.95	0.87	0.87	0.99	0.99	0.95	1.01	1.01	0.97	1.01	0.95	Install redundant relay/battery supply	
LOCKHD 1 115.0 kV	MONTA VISTA 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.89	0.90	1.01	1.00	0.97	1.02	1.01	0.98	1.02	0.96	Install redundant relay/battery supply	
ALMADEN 60.0 kV	MONTA VISTA 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.94	0.96	0.88	0.89	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Install redundant relay/battery supply	
APP MAT 115.0 kV	MONTA VISTA 115KV BAAH (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.97	0.95	0.87	0.88	0.99	0.99	0.95	1.01	1.01	0.97	1.01	0.95	Install redundant relay/battery supply	
APP MAT 115.0 kV	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.95	0.84	Diverge	0.99	0.99	0.93	1.01	1.01	0.97	1.01	0.94	Install redundant relay/battery supply	
LAWRENCE 115.0 kV	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.86	Diverge	1.00	1.00	0.94	1.02	1.00	0.98	1.02	0.94	Install redundant relay/battery supply	
LOCKHD 1 115.0 kV	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.96	0.87	Diverge	1.00	1.00	0.95	1.02	1.01	0.98	1.02	0.94	Install redundant relay/battery supply	
EVERGREN 60.0 kV	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.98	0.89	Diverge	1.02	1.03	0.99	1.04	1.03	0.97	1.04	0.96	Install redundant relay/battery supply	
LOCKHD 2 115.0 kV	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.86	Diverge	0.99	1.00	0.95	1.01	1.01	0.98	1.01	0.95	Install redundant relay/battery supply	
BRITTN 115.0 kV	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.95	0.84	Diverge	0.99	0.99	0.93	1.01	1.01	0.97	1.01	0.94	Install redundant relay/battery supply	
STONE 115.0 kV	MONTA VISTA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.98	0.90	Diverge	1.02	1.02	0.98	1.02	1.02	0.97	1.02	0.96	Install redundant relay/battery supply	
ALMADEN 60.0 kV	MONTAGUE 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.96	0.90	0.90	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Install redundant relay/battery supply	
SN LNDRO 115.0 kV	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.95	0.89	0.90	1.02	1.03	1.00	1.02	1.04	0.99	1.02	0.94	Install redundant relay/battery supply	
MORAGA 230.0 kV	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.85	0.86	NA	NA	0.96	NA	1.00	NA	NA	NA	Install redundant relay/battery supply	
E. SHORE 230.0 kV	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.98	0.90	0.89	1.01	1.01	0.98	1.00	1.01	1.01	1.00	0.96	Install redundant relay/battery supply	
SAN PBL0 115.0 kV	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.92	0.88	0.89	1.00	0.97	0.96	1.00	0.99	0.99	1.00	0.90	Install redundant relay/battery supply	
OAKLAND-X 115.0 kV	MORAGA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.95	0.89											

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
SN JSE A 115.0 kV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.86	0.96	0.85	Diverge	0.98	1.00	0.96	0.99	1.01	0.88	0.99	0.94	Install redundant relay/battery supply	
DIXON LD 115.0 kV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.94	0.96	0.87	Diverge	1.01	1.01	0.97	1.02	1.03	0.96	1.02	0.96	Install redundant relay/battery supply	
PIERCY 115.0 kV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.90	0.89	0.76	Diverge	1.00	0.97	0.91	1.02	0.99	0.93	1.02	0.89	Install redundant relay/battery supply	
TRIMBLE 115.0 kV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.99	0.88	Diverge	0.99	1.02	0.97	1.01	1.02	0.93	1.01	0.97	Install redundant relay/battery supply	
EVGRGN 1 115.0 kV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.82	0.92	0.79	Diverge	0.97	0.98	0.92	0.98	0.99	0.85	0.98	0.89	Install redundant relay/battery supply	
EL PATIO 115.0 kV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.85	0.96	0.85	Diverge	0.98	1.00	0.96	0.99	1.01	0.87	0.99	0.93	Install redundant relay/battery supply	
MONTAGUE 115.0 kV	MTCALF 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.99	0.88	Diverge	1.00	1.03	0.98	1.01	1.02	0.94	1.01	0.97	Install redundant relay/battery supply	
MORGN J1 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.87	Diverge	Diverge	0.99	0.98	Diverge	0.99	0.99	Diverge	0.99	Diverge	Install redundant relay/battery supply	
STONE 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.86	Diverge	Diverge	0.97	0.99	Diverge	0.98	1.00	Diverge	0.98	Diverge	Install redundant relay/battery supply	
LLAGAS 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.89	Diverge	Diverge	0.99	0.99	Diverge	1.00	1.00	Diverge	1.00	Diverge	Install redundant relay/battery supply	
ALMADEN 60.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.82	Diverge	Diverge	0.98	0.99	Diverge	0.99	1.01	Diverge	0.99	Diverge	Install redundant relay/battery supply	
PIERCY 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.86	Diverge	Diverge	0.99	0.98	Diverge	0.99	1.00	Diverge	1.00	Diverge	Install redundant relay/battery supply	
EVGRGN 1 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.87	Diverge	Diverge	0.98	0.99	Diverge	0.98	1.00	Diverge	0.98	Diverge	Install redundant relay/battery supply	
EVERGRN 60.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.86	Diverge	Diverge	0.99	1.00	Diverge	1.00	1.01	Diverge	1.00	Diverge	Install redundant relay/battery supply	
EDENVALE 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.85	Diverge	Diverge	0.98	0.99	Diverge	0.99	1.00	Diverge	0.99	Diverge	Install redundant relay/battery supply	
MCKEE 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.87	Diverge	Diverge	0.99	0.99	Diverge	1.00	1.01	Diverge	1.00	Diverge	Install redundant relay/battery supply	
EL PATIO 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.89	Diverge	Diverge	0.98	1.00	Diverge	0.99	1.01	Diverge	0.99	Diverge	Install redundant relay/battery supply	
ST TRESA 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.85	Diverge	Diverge	0.98	0.98	Diverge	0.99	1.00	Diverge	0.99	Diverge	Install redundant relay/battery supply	
SWIFT 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.87	Diverge	Diverge	0.99	0.99	Diverge	1.00	1.00	Diverge	1.00	Diverge	Install redundant relay/battery supply	
METCALFD 115.0 kV	MTCALF 230KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	Diverge	0.86	Diverge	Diverge	0.98	0.98	Diverge	0.99	1.00	Diverge	0.99	Diverge	Install redundant relay/battery supply	
DIXON LD 115.0 kV	NEWARK 115 kV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.91	0.95	0.86	0.84	1.01	1.02	0.99	1.03	1.03	0.94	1.03	0.96	Install redundant relay/battery supply	
ALMADEN 60.0 kV	NEWARK 115 kV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.95	0.88	0.88	1.02	1.03	0.99	1.03	1.03	0.93	1.03	0.96	Install redundant relay/battery supply	
MCKEE 115.0 kV	NEWARK 115 kV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.96	0.89	0.87	1.01	1.03	1.00	1.03	1.04	0.95	1.04	0.97	Install redundant relay/battery supply	
LOCKHD 1 115.0 kV	NEWARK 115 kV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.95	0.93	0.89	0.98	0.93	0.90	0.99	0.93	0.98	1.00	0.95	Install redundant relay/battery supply	
MILPITAS 115.0 kV	NEWARK 115 kV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.94	0.85	0.83	1.01	1.00	0.96	1.01	1.01	0.96	1.01	0.95	Install redundant relay/battery supply	
SWIFT 115.0 kV	NEWARK 115 kV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.95	0.98	0.91	0.89	1.02	1.02	1.00	1.03	1.03	0.98	1.03	0.98	Install redundant relay/battery supply	
NEWARK 60.0 kV	NEWARK 115 kV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.96	0.94	0.90	1.04	1.03	1.00	1.03	1.03	0.98	1.03	0.96	Install redundant relay/battery supply	
LPOSTAS 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.86	Diverge	1.04	1.03	Diverge	1.04	1.04	1.00	1.04	Diverge	Install redundant relay/battery supply	
METCALFD 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.72	Diverge	1.04	1.03	Diverge	1.04	1.04	0.99	1.04	Diverge	Install redundant relay/battery supply	
EL PATIO 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.96	0.59	Diverge	1.01	1.01	Diverge	1.03	1.02	0.93	1.03	Diverge	Install redundant relay/battery supply	
NEWARK 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.93	0.66	Diverge	1.01	0.99	Diverge	1.02	1.01	0.95	1.02	Diverge	Install redundant relay/battery supply	
EVGRGN 1 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.95	0.58	Diverge	1.01	1.01	Diverge	1.03	1.02	0.93	1.02	Diverge	Install redundant relay/battery supply	
AMES B51 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.99	0.69	Diverge	1.02	1.02	Diverge	1.02	1.02	0.99	1.02	Diverge	Install redundant relay/battery supply	
VALLECTS 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.95	0.74	Diverge	1.02	1.00	Diverge	1.02	1.02	0.97	1.03	Diverge	Install redundant relay/battery supply	
WHISMAN 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.70	Diverge	1.02	1.02	Diverge	1.02	1.02	1.00	1.02	Diverge	Install redundant relay/battery supply	
ST TRESA 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.98	0.71	Diverge	1.04	1.03	Diverge	1.04	1.04	0.98	1.04	Diverge	Install redundant relay/battery supply	
MCKEE 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.96	0.63	Diverge	1.01	1.02	Diverge	1.03	1.03	0.95	1.03	Diverge	Install redundant relay/battery supply	
MT VIEW 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.70	Diverge	1.02	1.02	Diverge	1.02	1.02	1.00	1.02	Diverge	Install redundant relay/battery supply	
AMES DST 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.99	0.69	Diverge	1.02	1.02	Diverge	1.02	1.02	0.99	1.02	Diverge	Install redundant relay/battery supply	
STELLING 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.72	Diverge	1.02	1.01	Diverge	1.02	1.01	1.02	1.02	Diverge	Install redundant relay/battery supply	
LOCKHD 1 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.60	Diverge	1.00	0.99	Diverge	1.02	0.99	0.97	1.02	Diverge	Install redundant relay/battery supply	
MILPITAS 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.95	0.58	Diverge	1.00	1.00	Diverge	1.02	1.02	0.96	1.02	Diverge	Install redundant relay/battery supply	
PIERCY 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.97	0.68	Diverge	1.03	1.02	Diverge	1.04	1.03	0.97	1.04	Diverge	Install redundant relay/battery supply	
MONTAGUE 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.99	0.58	Diverge	1.01	1.03	Diverge	1.02	1.02	0.93	1.02	Diverge	Install redundant relay/battery supply	
BRITTN 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.64	Diverge	1.00	1.00	Diverge	1.01	1.01	0.99	1.01	Diverge	Install redundant relay/battery supply	
APP MAT 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.64	Diverge	1.00	1.00	Diverge	1.01	1.01	0.99	1.01	Diverge	Install redundant relay/battery supply	
LAWRENCE 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.62	Diverge	1.00	0.98	Diverge	1.02	0.99	0.98	1.02	Diverge	Install redundant relay/battery supply	
MORGN J1 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.74	Diverge	1.03	1.02	Diverge	1.04	1.03	0.99	1.03	Diverge	Install redundant relay/battery supply	
LLAGAS 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.99	0.76	Diverge	1.02	1.02	Diverge	1.02	1.02	0.99	1.02	Diverge	Install redundant relay/battery supply	
LOCKHD 2 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.62	Diverge	1.00	1.00	Diverge	1.01	1.01	0.97	1.01	Diverge	Install redundant relay/battery supply	
DIXON LD 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.96	0.61	Diverge	1.01	1.01	Diverge	1.02	1.02	0.96	1.02	Diverge	Install redundant relay/battery supply	
FMC 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.97	0.56	Diverge	1.00	1.02	Diverge	1.02	1.02	0.93	1.02	Diverge	Install redundant relay/battery supply	
SWIFT 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.97	0.65	Diverge	1.02	1.02	Diverge	1.03	1.04	0.96	1.03	Diverge	Install redundant relay/battery supply	
SN JSE A 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.97	0.57	Diverge	1.01	1.01	Diverge	1.03	1.02	0.93	1.03	Diverge	Install redundant relay/battery supply	
EDENVALE 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.98	0.71	Diverge	1.04	1.03								

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
SFIA 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.01	0.81	Diverge	1.03	1.03	Diverge	1.02	1.02	1.03	1.03	Diverge	Install redundant relay/battery supply	
EST GRND 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.00	0.81	Diverge	1.02	1.02	Diverge	1.02	1.02	1.02	1.02	Diverge	Install redundant relay/battery supply	
MARTIN C 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.83	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
BAYSHOR1 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.03	0.83	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
HNTRS PT 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.83	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
POTRERO 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.03	0.83	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
LARKIN D 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.83	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
EDES 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.84	Diverge	1.03	1.02	Diverge	1.02	1.04	1.02	1.03	Diverge	Install redundant relay/battery supply	
OAKLAND-J 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.85	Diverge	1.03	1.02	Diverge	1.02	1.04	1.02	1.02	Diverge	Install redundant relay/battery supply	
SAN PBL0 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.92	0.87	Diverge	1.00	0.97	Diverge	1.00	0.99	0.99	1.00	Diverge	Install redundant relay/battery supply	
CAL MEC 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.81	Diverge	1.01	1.01	Diverge	1.01	1.02	0.98	1.01	Diverge	Install redundant relay/battery supply	
SANMATEO 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.00	0.79	Diverge	1.03	1.03	Diverge	1.02	1.03	1.03	1.02	Diverge	Install redundant relay/battery supply	
VASONA 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.76	Diverge	1.02	1.01	Diverge	1.02	1.02	0.97	1.02	Diverge	Install redundant relay/battery supply	
SARATOGA 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.95	0.75	Diverge	1.02	1.01	Diverge	1.02	1.03	0.97	1.02	Diverge	Install redundant relay/battery supply	
JEFFERSN 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.75	Diverge	1.02	1.01	Diverge	1.02	1.02	0.99	1.02	Diverge	Install redundant relay/battery supply	
MONTAVIS 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.74	Diverge	1.02	1.01	Diverge	1.03	1.03	0.97	1.03	Diverge	Install redundant relay/battery supply	
RAVENSWD 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	0.98	0.77	Diverge	1.02	1.02	Diverge	1.01	1.01	1.01	1.01	Diverge	Install redundant relay/battery supply	
SANMATEO 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	0.99	0.79	Diverge	1.02	1.02	Diverge	1.01	1.01	1.02	1.02	Diverge	Install redundant relay/battery supply	
POTRERO 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.00	0.80	Diverge	1.02	1.01	Diverge	1.02	1.00	1.02	1.02	Diverge	Install redundant relay/battery supply	
MARTIN C 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.00	0.81	Diverge	1.02	1.01	Diverge	1.02	1.00	1.02	1.02	Diverge	Install redundant relay/battery supply	
EGBERTSWSTA 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	1.00	0.80	Diverge	NA	1.01	Diverge	NA	1.00	NA	NA	Diverge	Install redundant relay/battery supply	
EMBRCDRD 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.00	0.80	Diverge	1.02	1.01	Diverge	1.02	1.00	1.02	1.02	Diverge	Install redundant relay/battery supply	
NWK DIST 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.99	0.61	Diverge	1.02	1.03	Diverge	1.03	1.03	0.95	1.03	Diverge	Install redundant relay/battery supply	
E. SHORE 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.95	0.76	Diverge	1.01	1.00	Diverge	0.99	1.00	0.99	0.99	Diverge	Install redundant relay/battery supply	
CASTROVL 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.96	0.90	Diverge	1.01	1.01	Diverge	1.01	1.01	0.98	1.02	Diverge	Install redundant relay/battery supply	
HICKS 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.77	Diverge	1.02	1.01	Diverge	1.02	1.02	0.97	1.02	Diverge	Install redundant relay/battery supply	
BELMONT 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	0.99	0.76	Diverge	1.02	1.03	Diverge	1.02	1.02	1.01	1.02	Diverge	Install redundant relay/battery supply	
METCALF 230.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.82	Diverge	1.01	1.01	Diverge	1.01	1.02	0.98	1.01	Diverge	Install redundant relay/battery supply	
CLY LND 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.73	Diverge	1.03	1.04	Diverge	1.03	1.03	1.02	1.03	Diverge	Install redundant relay/battery supply	
RADIUM 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.81	Diverge	1.04	1.02	Diverge	1.04	1.03	0.99	1.04	Diverge	Install redundant relay/battery supply	
BAIR 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	0.99	0.75	Diverge	1.02	1.03	Diverge	1.02	1.03	1.01	1.02	Diverge	Install redundant relay/battery supply	
EVERGREN 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.95	0.55	Diverge	1.02	1.02	Diverge	1.04	1.03	0.93	1.04	Diverge	Install redundant relay/battery supply	
LIVERMRE 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.82	Diverge	1.04	1.02	Diverge	1.04	1.03	0.99	1.04	Diverge	Install redundant relay/battery supply	
NEWARK D 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.99	0.63	Diverge	1.02	1.03	Diverge	1.03	1.04	0.98	1.03	Diverge	Install redundant relay/battery supply	
JARVIS 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.96	0.58	Diverge	1.01	1.02	Diverge	1.02	1.03	0.96	1.02	Diverge	Install redundant relay/battery supply	
DUMBARTN 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.02	0.74	Diverge	1.03	1.03	Diverge	1.04	1.04	1.02	1.04	Diverge	Install redundant relay/battery supply	
MT EDEN 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.05	1.05	0.82	Diverge	1.04	1.04	Diverge	1.05	1.04	1.05	1.04	Diverge	Install redundant relay/battery supply	
EASTSHRE 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.05	1.05	0.83	Diverge	1.04	1.04	Diverge	1.05	1.04	1.05	1.04	Diverge	Install redundant relay/battery supply	
GRANT 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.04	1.03	0.83	Diverge	1.04	1.03	Diverge	1.04	1.04	1.04	1.03	Diverge	Install redundant relay/battery supply	
SN LNDRO 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.97	0.89	Diverge	1.03	1.02	Diverge	1.02	1.03	1.00	1.02	Diverge	Install redundant relay/battery supply	
ALMADEN 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.90	0.92	0.50	Diverge	1.02	1.02	Diverge	1.03	1.03	0.91	1.03	Diverge	Install redundant relay/battery supply	
MENLO 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.02	0.75	Diverge	1.02	1.02	Diverge	1.02	1.02	1.03	1.02	Diverge	Install redundant relay/battery supply	
MISSION 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.83	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
STONE 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.92	0.95	0.57	Diverge	1.01	1.01	Diverge	1.02	1.02	0.93	1.02	Diverge	Install redundant relay/battery supply	
RVNSWD D 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.75	Diverge	1.04	1.04	Diverge	1.03	1.04	1.02	1.03	Diverge	Install redundant relay/battery supply	
BURLINGME 115.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.80	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
HLF MNBY 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.00	0.75	Diverge	1.03	1.03	Diverge	1.04	1.04	1.03	1.03	Diverge	Install redundant relay/battery supply	
BAIR 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.76	Diverge	1.03	1.02	Diverge	1.03	1.03	1.02	1.03	Diverge	Install redundant relay/battery supply	
PACIFICA 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.82	Diverge	1.03	1.03	Diverge	1.03	1.03	1.03	1.03	Diverge	Install redundant relay/battery supply	
CLY LNDG 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.04	0.79	Diverge	1.03	1.03	Diverge	1.03	1.02	1.04	1.03	Diverge	Install redundant relay/battery supply	
SNTH LNE 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.82	Diverge	1.03	1.03	Diverge	1.03	1.04	1.03	1.03	Diverge	Install redundant relay/battery supply	
GLENWOOD 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.02	0.75	Diverge	1.02	1.02	Diverge	1.02	1.02	1.03	1.02	Diverge	Install redundant relay/battery supply	
JEFRSN D 60.0 kV	NEWARK 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.74	Diverge	1.02	1.01	Diverge	1.02	1.03	0.99	1.02	Diverge	Install redundant relay/battery supply	
MCKEE 115.0 kV	NEWARK E&F 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.96	0.91	0.90	1.01	1.02	1.01	1.03	1.04	0.96	1.03	0.97	Install redundant relay/battery supply	
DIXON LD 115.0 kV	NEWARK E&F 115KV BATT(FAILURE OF NON-REDUNDANT BATT)</																

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
EL CRTTO 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	0.97	0.89	Diverge	1.03	1.02	1.00	1.03	1.04	1.01	1.03	0.95	Install redundant relay/battery supply	
FMC 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	1.01	0.88	Diverge	1.01	1.02	1.00	1.02	1.03	0.98	1.02	1.00	Install redundant relay/battery supply	
RICHMOND 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	0.97	0.90	Diverge	1.03	1.02	1.00	1.03	1.04	1.01	1.03	0.95	Install redundant relay/battery supply	
OAKLAND-C 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	0.98	0.90	Diverge	1.03	1.03	1.01	1.02	1.04	1.00	1.02	0.97	Install redundant relay/battery supply	
TIDEWATR 230.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.97	0.90	Diverge	1.02	1.02	0.98	1.02	1.04	1.00	1.02	0.95	Install redundant relay/battery supply	
OAKLAND-X 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	0.98	0.90	Diverge	1.03	1.02	1.00	1.02	1.04	1.00	1.02	0.97	Install redundant relay/battery supply	
SANRAMON 230.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.97	0.95	0.84	Diverge	1.01	1.02	0.96	1.02	1.02	0.97	1.02	0.94	Install redundant relay/battery supply	
CASTROVL 230.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.89	Diverge	1.01	1.02	0.98	1.02	1.02	0.99	1.02	0.97	Install redundant relay/battery supply	
MORAGA 230.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.99	0.97	0.89	Diverge	1.01	1.02	0.97	1.02	1.01	0.99	1.02	0.96	Install redundant relay/battery supply	
ROSSMOOR 230.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.99	0.97	0.90	Diverge	1.01	1.02	0.98	1.02	1.01	0.99	1.02	0.96	Install redundant relay/battery supply	
SOBRANTE 230.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.97	0.90	Diverge	1.02	1.01	0.97	1.01	1.04	0.99	1.01	0.95	Install redundant relay/battery supply	
TRIMBLE 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	1.01	0.89	Diverge	1.01	1.03	1.00	1.02	1.03	0.99	1.02	1.01	Install redundant relay/battery supply	
EVGRGN 1 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	1.00	0.88	Diverge	1.02	1.02	0.99	1.03	1.02	0.99	1.02	0.99	Install redundant relay/battery supply	
E. SHORE 230.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.87	Diverge	1.01	1.01	0.99	0.99	1.01	1.01	0.99	0.98	Install redundant relay/battery supply	
MONTAGUE 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	1.01	0.89	Diverge	1.01	1.03	1.00	1.02	1.03	0.99	1.02	1.01	Install redundant relay/battery supply	
DIXON LD 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.01	0.90	Diverge	1.02	1.03	1.01	1.03	1.04	1.01	1.03	1.01	Install redundant relay/battery supply	
OLEUM 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.02	0.96	0.89	Diverge	1.04	1.02	1.02	1.03	1.04	1.01	1.03	0.94	Install redundant relay/battery supply	
NORTECH 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.02	0.89	Diverge	1.02	1.04	1.01	1.03	1.04	1.00	1.03	1.02	Install redundant relay/battery supply	
STONE 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.99	0.87	Diverge	1.02	1.02	0.99	1.02	1.02	0.98	1.02	0.98	Install redundant relay/battery supply	
LOCKHD 1 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.89	Diverge	1.01	1.00	0.98	1.02	1.01	1.01	1.02	1.00	Install redundant relay/battery supply	
ALMADEN 60.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.95	0.96	0.82	Diverge	1.02	1.03	0.98	1.03	1.03	0.96	1.03	0.96	Install redundant relay/battery supply	
LPOSTAS 60.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.90	Diverge	1.04	1.04	1.00	1.04	1.04	1.01	1.04	1.00	Install redundant relay/battery supply	
NEWARK 60.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.90	Diverge	1.04	1.04	1.01	1.04	1.04	1.02	1.04	1.00	Install redundant relay/battery supply	
JARVIS 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.89	Diverge	1.03	1.04	1.01	1.03	1.05	1.01	1.03	1.01	Install redundant relay/battery supply	
RADIUM 60.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.99	0.98	0.87	Diverge	1.04	1.04	0.99	1.04	1.04	1.00	1.04	0.98	Install redundant relay/battery supply	
LOCKHD 2 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.90	Diverge	1.01	1.01	1.00	1.01	1.02	1.01	1.01	1.00	Install redundant relay/battery supply	
EVERGREN 60.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.98	0.99	0.86	Diverge	1.03	1.03	1.00	1.04	1.03	0.99	1.04	0.99	Install redundant relay/battery supply	
LIVERMRE 60.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.88	Diverge	1.04	1.04	1.00	1.04	1.04	1.01	1.04	0.99	Install redundant relay/battery supply	
LAWRENCE 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.90	Diverge	1.01	1.00	0.98	1.02	1.00	1.01	1.02	1.00	Install redundant relay/battery supply	
MILPITAS 115.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.01	1.00	0.89	Diverge	1.02	1.02	1.00	1.03	1.03	1.01	1.03	1.00	Install redundant relay/battery supply	
SAN RAMN 60.0 kV	PITTSBURG PP 230KV (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	1.00	0.98	0.87	Diverge	1.03	1.04	0.99	1.04	1.04	1.00	1.04	0.97	Install redundant relay/battery supply	
SAN PBL0 115.0 kV	POINT PINOLE 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	1.00	0.96	0.90	0.98	0.94	0.94	0.98	0.98	0.98	0.98	0.90	Install redundant relay/battery supply	
MISSION 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.88	1.02	1.03	1.02	1.03	1.03	1.02	1.03	1.01	Install redundant relay/battery supply	
MARTIN C 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.96	0.89	1.03	1.03	1.02	1.03	1.03	1.03	1.03	1.02	Install redundant relay/battery supply	
HNTRS PT 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.89	1.03	1.03	1.02	1.03	1.03	1.03	1.03	1.02	Install redundant relay/battery supply	
SERRMNTS 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.89	1.02	1.03	1.02	1.03	1.03	1.03	1.03	1.02	Install redundant relay/battery supply	
POTRERO 230.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.89	1.03	1.01	0.99	1.03	1.00	1.03	1.03	1.02	Install redundant relay/battery supply	
EMBRCDRD 230.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.89	1.03	1.01	0.99	1.03	1.00	1.03	1.03	1.02	Install redundant relay/battery supply	
MARTIN C 230.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.89	1.02	1.01	0.99	1.03	1.00	1.02	1.03	1.02	Install redundant relay/battery supply	
EVERGREN 60.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.99	0.91	0.90	1.03	1.03	1.01	1.04	1.03	0.99	1.04	0.98	Install redundant relay/battery supply	
EGBERTSWSTA 230.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	1.02	0.95	0.89	NA	1.01	0.99	NA	1.00	NA	NA	1.02	Install redundant relay/battery supply	
JEFRSN_D 60.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	1.01	0.93	0.89	1.01	1.02	0.99	1.01	1.02	1.02	1.01	1.00	Install redundant relay/battery supply	
E. SHORE 230.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.99	0.91	0.86	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.97	Install redundant relay/battery supply	
LARKIN D 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.91	0.81	0.68	0.95	1.02	0.93	1.00	1.00	0.94	1.01	0.92	Install redundant relay/battery supply	
EST GRND 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.93	0.87	1.02	1.02	1.01	1.02	1.01	1.02	1.02	1.01	Install redundant relay/battery supply	
SFIA 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.01	0.95	0.89	1.02	1.03	1.01	1.02	1.02	1.03	1.03	1.01	Install redundant relay/battery supply	
ALMADEN 60.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.96	0.87	0.86	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Install redundant relay/battery supply	
MILLBRAE 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.89	1.03	1.03	1.01	1.02	1.03	1.03	1.02	1.01	Install redundant relay/battery supply	
SANMATEO 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.03	1.02	0.95	0.90	1.03	1.03	1.02	1.02	1.03	1.03	1.02	1.01	Install redundant relay/battery supply	
BAY MDWS 115.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.02	1.01	0.94	0.89	1.02	1.02	1.01	1.02	1.03	1.02	1.02	1.01	Install redundant relay/battery supply	
HLF MNBV 60.0 kV	POTRERO (SF A) 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.04	1.03	0.94	0.88	1.03	1.03	1.01	1.04	1.04	1				

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
GLENWOOD 60.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.44	0.42	0.92	Diverge	0.55	0.52	1.01	0.52	1.01	0.49	0.52	0.44	Install redundant relay/battery supply	
EVERGREEN 60.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.99	0.89	Diverge	1.03	1.03	1.01	1.04	1.03	0.98	1.04	0.98	Install redundant relay/battery supply	
MENLO 60.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.43	0.41	0.91	Diverge	0.55	0.52	1.01	0.52	1.01	0.49	0.52	0.44	Install redundant relay/battery supply	
BAIR 60.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.58	0.57	0.92	Diverge	0.68	0.67	1.01	0.66	1.01	0.63	0.66	0.58	Install redundant relay/battery supply	
CLY LND 115.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.38	0.37	0.86	Diverge	0.48	0.45	0.94	0.45	0.98	0.43	0.46	0.38	Install redundant relay/battery supply	
STONE 115.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.99	0.90	Diverge	1.02	1.02	1.00	1.02	1.02	0.97	1.02	0.98	Install redundant relay/battery supply	
BAIR 115.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.75	0.77	0.91	Diverge	0.82	0.84	0.99	0.80	1.01	0.79	0.81	0.75	Install redundant relay/battery supply	
CLY LND 60.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.45	0.43	0.95	Diverge	0.56	0.53	1.03	0.53	1.01	0.50	0.53	0.45	Install redundant relay/battery supply	
BELMONT 115.0 kV	RAVENSWOOD 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.81	0.83	0.92	Diverge	0.87	0.89	1.00	0.86	1.01	0.84	0.86	0.80	Install redundant relay/battery supply	
EL PATIO 115.0 kV	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	0.96	0.90	0.88	1.04	0.98	0.95	1.04	0.99	1.01	1.04	0.92	Install redundant relay/battery supply	
SN JSE A 115.0 kV	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	0.95	0.89	0.87	1.04	0.97	0.94	1.04	0.98	1.01	1.04	0.91	Install redundant relay/battery supply	
ALMADEN 60.0 kV	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.94	0.84	0.80	1.04	1.02	0.97	1.04	1.03	0.98	1.04	0.93	Install redundant relay/battery supply	
STONE 115.0 kV	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.96	0.89	0.86	1.03	1.01	0.98	1.03	1.02	0.99	1.03	0.95	Install redundant relay/battery supply	
EVGRGN 1 115.0 kV	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.97	0.89	0.87	1.03	1.02	0.98	1.03	1.02	1.00	1.03	0.96	Install redundant relay/battery supply	
EVERGREEN 60.0 kV	SAN JOSE B 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	0.88	0.85	1.04	1.03	0.99	1.05	1.03	1.00	1.04	0.96	Install redundant relay/battery supply	
JEFRSN_D 60.0 kV	SAN MATEO 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	0.97	0.92	0.87	1.01	1.01	Diverge	1.00	Diverge	1.00	1.01	0.98	Install redundant relay/battery supply	
JEFFERSN 230.0 kV	SAN MATEO 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	0.98	0.94	0.89	1.02	1.00	Diverge	1.01	Diverge	1.00	1.01	0.98	Install redundant relay/battery supply	
E_SHORE 230.0 kV	SAN MATEO 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	0.97	0.87	0.79	1.00	1.00	Diverge	0.95	Diverge	0.99	0.95	0.88	Install redundant relay/battery supply	
HLF MNBY 60.0 kV	SAN MATEO 230-115-60KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	Diverge	0.98	0.91	0.83	1.04	1.03	Diverge	1.03	Diverge	1.02	1.03	1.00	Install redundant relay/battery supply	
ALMADEN 60.0 kV	Single DC Supply Failure at Duane 115KV bus	P5	Non-Redundant Battery/Relay	0.94	0.96	0.88	0.89	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Install redundant relay/battery supply	
MARTNZ D 115.0 kV	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	1.01	0.81	0.77	0.85	1.02	1.00	0.93	1.02	1.04	1.03	1.02	0.85	Install redundant relay/battery supply	
CHRISTIE 60.0 kV	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.62	0.55	0.67	1.01	0.93	0.83	1.01	1.03	1.02	1.01	0.75	Install redundant relay/battery supply	
EL CRTTO 115.0 kV	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.91	0.55	0.48	0.56	0.95	0.86	0.70	0.95	1.02	0.97	0.95	0.69	Install redundant relay/battery supply	
CHRISTIE 115.0 kV	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.61	0.55	0.67	0.98	0.90	0.80	0.98	1.03	1.00	0.98	0.73	Install redundant relay/battery supply	
OLEUM 115.0 kV	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.63	0.57	0.70	0.98	0.91	0.81	0.99	1.04	1.01	0.99	0.74	Install redundant relay/battery supply	
ALHAMBRA 115.0 kV	SOBRANTE 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.76	0.84	NA	NA	0.93	NA	1.04	NA	NA	NA	Install redundant relay/battery supply	
APP MAT 115.0 kV	230KV and BRITTON-MONTA VISTA 115KV	P6	N-1-1	>0.9	>0.9	0.89	0.81	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
FREMANT 115.0 kV	230KV and BRITTON-MONTA VISTA 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
LOCKHD 1 115.0 kV	230KV and LAWRENCE-MONTA VISTA 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.84	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
LAWRENCE 115.0 kV	230KV and LAWRENCE-MONTA VISTA 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.83	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
TRIMBL&L 115.0 kV	230KV and SANJOSEB230 230/115KV TB 1	P6	N-1-1	>0.9	>0.9	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
LARKIN D 115.0 kV	A-Y #1 (UNDERGROUND IDLE) 115KV and X-Y #1 115KV	P6	N-1-1	>0.9	>0.9	0.89	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
BRITTN 115.0 kV	CHARCOT-SANJOSEB 230KV and BRITTON-MONTA VISTA 115KV	P6	N-1-1	>0.9	>0.9	0.89	0.81	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
LOCKHD 2 115.0 kV	CHARCOT-SANJOSEB 230KV and BRITTON-MONTA VISTA 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.83	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
EST GRAND 115.0 kV	CHARCOT-SANJOSEB 230KV and MARTIN-EAST GRAND 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
DIXON LD 115.0 kV	CHARCOT-SANJOSEB 230KV and NEWARK-DIXON LANDING 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.82	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
JARVIS 115.0 kV	CHARCOT-SANJOSEB 230KV and NEWARK-JARVIS #2 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.82	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
BELMONT 115.0 kV	CHARCOT-SANJOSEB 230KV and SAN MATEO-BELMONT 115KV	P6	N-1-1	>0.9	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
FMC 115.0 kV	CHARCOT-SANJOSEB 230KV and SANJOSEB230 230/115KV TB 1	P6	N-1-1	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
SARATOGA 230.0 kV	CHARCOT-SANJOSEB 230KV and SARATOGA-VASONA 230KV	P6	N-1-1	>0.9	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
CHRISTIE 60.0 kV	CHRISTIE-SOBRANTE 115KV and OLEUM-MARTINEZ 115KV	P6	N-1-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
OLEUM 115.0 kV	CHRISTIE-SOBRANTE 115KV and OLEUM-MARTINEZ 115KV	P6	N-1-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
CHRISTIE 115.0 kV	CHRISTIE-SOBRANTE 115KV and OLEUM-MARTINEZ 115KV	P6	N-1-1	>0.9	>0.9	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
CLY LND 60.0 kV	CLY LND2 115/60KV TB 2 and CLY LND 115/60KV TB 1	P6	N-1-1	>0.9	>0.9	0.85	0.81	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
MENLO 60.0 kV	CLY LND2 115/60KV TB 2 and CLY LND 115/60KV TB 1	P6	N-1-1	>0.9	>0.9	0.81	0.76	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
GLENWOOD 60.0 kV	CLY LND 115/60KV TB 2 and CLY LND 115/60KV TB 1	P6	N-1-1	>0.9	>0.9	0.82	0.77	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
BAIR 60.0 kV	CLY LND 115/60KV TB 2 and CLY LND 115/60KV TB 1	P6	N-1-1	>0.9	>0.9	0.90	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor	
LS PSTAS 230.0 kV	CONTRA COSTA-LAS POSITAS 230KV and LAS POSITAS-NEWARK 230KV	P6	N-1-1	>0.9	0.48	>0.9	0.33	>0.9	>0.9	0.47	>0.9	>0.9	>0.9	>0.9	0.81	Operating solution	
LIVERMIRE 60.0 kV	CONTRA COSTA-LAS POSITAS 230KV and LAS POSITAS-NEWARK 230KV	P6	N-1-1	>0.9	0.63	>0.9	0.54	>0.9	>0.9	0.61	>0.9	>0.9	>0.9	>0.9	0.87	Operating solution	
E_SHORE 230.0 kV	DUMBARTON-NEWARK 115KV and EASTSHORE-SAN MATEO 230KV	P6	N-1-1	>0.9	>0.9	>0.9	0.70	>0.9	>0.9	>0.9	>0.9	>0.					

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)										Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		
EDES 115.0 kV	Grant-Eastshore Nos. 1 & 2 115 kV lines	P7	DCTL	0.97	0.73	0.91	0.90	1.00	1.00	1.00	1.00	1.05	0.98	1.00	0.93	Project: South Oakland reinforcement	
GRANT 115.0 kV	Grant-Eastshore Nos. 1 & 2 115 kV lines	P7	DCTL	0.96	0.73	0.91	0.89	1.00	1.00	1.00	1.00	1.04	0.98	1.00	0.93	Project: South Oakland reinforcement	
ALMADEN 60.0 kV	Los Esteros - Trimble & Montague - Trimble 115 kV Line	P7	DCTL	0.94	0.96	0.88	0.88	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.95	Continue to monitor	
ALMADEN 60.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines	P7	DCTL	0.90	NA	NA	NA	1.01	NA	NA	1.02	NA	0.92	1.02	NA	Continue to monitor	
STONE 115.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Evergreen Direction	P7	DCTL	NA	0.96	0.85	0.88	NA	1.00	0.96	NA	0.99	NA	NA	0.95	Continue to monitor	
ALMADEN 60.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Evergreen Direction	P7	DCTL	NA	0.94	0.80	0.83	NA	1.00	0.95	NA	1.00	NA	NA	0.93	Continue to monitor	
EVERGREEN 60.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Evergreen Direction	P7	DCTL	NA	0.97	0.84	0.87	NA	1.01	0.96	NA	1.00	NA	NA	0.95	Continue to monitor	
EVGRIN 1 115.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Evergreen Direction	P7	DCTL	NA	0.97	0.86	0.89	NA	1.00	0.96	NA	0.99	NA	NA	0.95	Continue to monitor	
STONE 115.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Metcalf Direction	P7	DCTL	NA	0.96	0.85	0.88	NA	1.00	0.96	NA	0.99	NA	NA	0.95	Continue to monitor	
ALMADEN 60.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Metcalf Direction	P7	DCTL	NA	0.94	0.80	0.83	NA	1.00	0.95	NA	1.00	NA	NA	0.93	Continue to monitor	
EVGRIN 1 115.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Metcalf Direction	P7	DCTL	NA	0.97	0.86	0.89	NA	1.00	0.96	NA	0.99	NA	NA	0.95	Continue to monitor	
EVERGREEN 60.0 kV	Metcalf - Evergreen #1 and #2 115 kV Lines Metcalf Direction	P7	DCTL	NA	0.97	0.84	0.87	NA	1.01	0.96	NA	1.00	NA	NA	0.95	Continue to monitor	
ALMADEN 60.0 kV	Metcalf - Hicks & Metcalf - Vasona 230 kV Lines	P7	DCTL	0.95	0.96	0.88	0.89	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor	
ALMADEN 60.0 kV	Metcalf-Monta Vista No. 3 & Monta Vista-Coyote Sw. Sta. 230 kV Line	P7	DCTL	0.95	0.96	0.87	0.89	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.95	Continue to monitor	
ALMADEN 60.0 kV	Monta Vista-Jefferson 230 kV Lines No. 1 & 2	P7	DCTL	0.95	0.96	0.89	0.90	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor	
ALMADEN 60.0 kV	Monta Vista-Jefferson Nos. 1 & 2 230 kV lines	P7	DCTL	0.95	0.96	0.89	0.90	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor	
MCKEE 115.0 kV	Newark - Dixon Landing & Newark - Milpitas #1 115 kV Lines	P7	DCTL	0.94	0.97	0.91	0.90	1.02	1.03	1.01	1.04	1.04	0.97	1.04	0.97	Continue to monitor	
DIXON LD 115.0 kV	Newark - Dixon Landing & Newark - Milpitas #1 115 kV Lines	P7	DCTL	0.93	0.96	0.88	0.86	1.01	1.02	1.00	1.03	1.04	0.96	1.03	0.96	Continue to monitor	
ALMADEN 60.0 kV	Newark - Los Esteros & Los Esteros - Metcalf 230 kV Lines	P7	DCTL	0.93	0.96	0.89	0.90	1.02	1.03	0.99	1.03	1.03	0.94	1.03	0.96	Continue to monitor	
LAWRENCE 115.0 kV	Newark-Applied Materials & Lawrence-Monta Vista 115 kV Lines	P7	DCTL	0.98	0.96	0.90	0.89	0.99	1.00	0.96	1.01	1.00	0.98	1.01	0.95	Continue to monitor	
LOCKHD 2 115.0 kV	Newark-Applied Materials & Lawrence-Monta Vista 115 kV Lines	P7	DCTL	0.98	0.96	0.90	0.90	0.99	0.99	0.96	1.00	1.00	0.98	1.00	0.95	Continue to monitor	
LOCKHD 1 115.0 kV	Newark-Applied Materials & Lawrence-Monta Vista 115 kV Lines	P7	DCTL	0.98	0.96	0.90	0.90	0.99	0.99	0.96	1.00	1.01	0.98	1.00	0.95	Continue to monitor	
DIXON LD 115.0 kV	Newark-Dixon Landing 115 kV and Newark-Milpitas No. 1 115 kV lines	P7	DCTL	0.93	0.96	0.88	0.86	1.01	1.02	1.00	1.03	1.04	0.96	1.03	0.96	Continue to monitor	
MCKEE 115.0 kV	Newark-Dixon Landing 115 kV and Newark-Milpitas No. 1 115 kV lines	P7	DCTL	0.94	0.97	0.91	0.90	1.02	1.03	1.01	1.04	1.04	0.97	1.04	0.97	Continue to monitor	
ALMADEN 60.0 kV	Newark-Fremont Nos. 1 & 2 115 kV lines	P7	DCTL	0.95	0.96	0.90	0.90	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor	
SANRAMON 230.0 kV	Pittsburg-San Ramon 230 kV and Pittsburg-Tassajara 230 kV lines	P7	DCTL	0.98	0.96	0.90	0.89	1.01	1.02	0.98	1.02	1.02	0.98	1.02	0.96	Continue to monitor	
SAN PBLO 115.0 kV	Pittsburg-Tidewater 230 kV and Pittsburg-Tesoro SW STA 230 kV lines	P7	DCTL	0.99	0.93	0.89	0.90	1.00	0.97	0.96	1.00	0.99	0.99	1.00	0.92	Continue to monitor	
SAN PBLO 115.0 kV	Pittsburg-Tidewater 230 kV and Tesoro SW STA-Sobrante 230 kV lines	P7	DCTL	0.99	0.93	0.89	0.90	1.00	0.97	0.96	1.00	1.00	0.99	1.00	0.92	Continue to monitor	
OLEUM 115.0 kV	Sobrante-G Nos. 1 & 2 115 kV lines	P7	DCTL	1.00	0.94	0.89	0.94	1.02	1.00	1.00	1.02	1.04	1.02	1.02	0.94	Continue to monitor	
EL CRRTO 115.0 kV	Sobrante-G Nos. 1 & 2 115 kV lines	P7	DCTL	0.96	0.88	0.81	0.85	0.99	0.95	0.92	0.99	1.02	0.99	0.99	0.90	Operating solution: Shell units dispatch	
PIERCY 115.0 kV	Swift - Metcalf & Piercy - Metcalf 115 kV Lines	P7	DCTL	0.94	0.90	0.80	0.79	1.01	0.97	0.94	1.03	1.00	0.96	1.03	0.92	Continue to monitor	
DIXON LD 115.0 kV	Swift - Metcalf & Piercy - Metcalf 115 kV Lines	P7	DCTL	0.98	0.98	0.90	0.90	1.02	1.02	0.99	1.02	1.03	0.99	1.03	0.98	Continue to monitor	
MCKEE 115.0 kV	Swift - Metcalf & Piercy - Metcalf 115 kV Lines	P7	DCTL	0.94	0.92	0.82	0.81	1.01	0.99	0.95	1.02	1.01	0.96	1.03	0.93	Continue to monitor	
ALMADEN 60.0 kV	Swift - Metcalf & Piercy - Metcalf 115 kV Lines	P7	DCTL	0.95	0.96	0.87	0.88	1.02	1.03	0.99	1.03	1.03	0.96	1.03	0.96	Continue to monitor	
SWIFT 115.0 kV	Swift - Metcalf & Piercy - Metcalf 115 kV Lines	P7	DCTL	0.97	0.95	0.89	0.90	1.02	1.00	0.99	1.02	1.02	0.98	1.02	0.95	Continue to monitor	
EVERGREEN 60.0 kV	Tesla - Newark No.2 and Metcalf - Los Esteros 230 kV lines	P7	DCTL	0.97	0.99	0.90	0.90	1.03	1.03	1.00	1.04	1.03	0.98	1.04	0.97	Continue to monitor	
ALMADEN 60.0 kV	Tesla - Newark No.2 and Metcalf - Los Esteros 230 kV lines	P7	DCTL	0.94	0.96	0.86	0.86	1.02	1.03	0.98	1.03	1.03	0.96	1.03	0.95	Continue to monitor	
E. SHORE 230.0 kV	Tesla - Newark No.2 and Metcalf - Los Esteros 230 kV lines	P7	DCTL	1.00	0.99	0.92	0.89	1.01	1.01	0.99	1.00	1.01	1.01	1.00	0.97	Continue to monitor	
ALMADEN 60.0 kV	Tesla - Newark No.2 and Newark - Los Esteros 230 kV Lines	P7	DCTL	0.94	0.96	0.87	0.88	1.02	1.03	0.99	1.03	1.03	0.95	1.03	0.96	Continue to monitor	
EVERGREEN 60.0 kV	Tesla-Newark No.1 and Tesla-Ravenswood 230 kV lines	P7	DCTL	0.97	0.99	0.88	Diverge	1.03	1.03	0.99	1.04	1.03	0.97	1.04	0.96	Continue to monitor	
ALMADEN 60.0 kV	Tesla-Newark No.1 and Tesla-Ravenswood 230 kV lines	P7	DCTL	0.94	0.96	0.84	Diverge	1.02	1.03	0.98	1.03	1.03	0.95	1.03	0.94	Continue to monitor	
SAN PBLO 115.0 kV	Tesla-Newark No.1 and Tesla-Ravenswood 230 kV lines	P7	DCTL	0.99	0.93	0.90	Diverge	1.00	0.97	0.97	1.00	0.99	0.99	1.00	0.92	Continue to monitor	
EVGRIN 1 115.0 kV	Tesla-Newark No.1 and Tesla-Ravenswood 230 kV lines	P7	DCTL	0.97	0.99	0.90	Diverge	1.02	1.02	0.99	1.03	1.02	0.98	1.02	0.97	Continue to monitor	
STONE 115.0 kV	Tesla-Newark No.1 and Tesla-Ravenswood 230 kV lines	P7	DCTL	0.97	0.98	0.89	Diverge	1.02	1.02	0.99	1.02	1.02	0.97	1.02	0.96	Continue to monitor	
SAN PBLO 115.0 kV	Tidewater-Sobrante 230 kV and Tesoro SW STA-Sobrante 230 kV lines	P7	DCTL	0.99	0.92	0.89	0.90	1.00	0.97	0.96	1.00	0.99	0.99	1.00	0.93	Continue to monitor	

[illegible]

[illegible]

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)												Potential Mitigation Solutions	
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast		2040 SJVLY area Hi-EV sensitivity

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

Substation	Load Served (MW)													Potential Mitigation Solutions
	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area HI-EV sensitivity	

No single source substation with more than 100 MW

					2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer- Off Peak	2027 Spring Off- Peak	2035 Spring Off- Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SP/IV area Hi-EV sensitivity	
ATWATER-LIVINGSTON-MERCED 115KV	P2-4-A13:12_ WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NA	NConv	NA	47	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5a-A13:1_ WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NA	NConv	NA	47	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5c-A13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	46	44	24	48	NConv	NConv	22	NConv	Add redundant battery
	P1-2-A13:51_ EL CAPITAN-WILSON 115KV [1510] & P1-2-A13:49_ WILSON-ATWATER #2 115KV [4160]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	126	Continue to monitor
	P5-5c-A13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	41	41	18	44	NConv	NConv	25	NConv	Add redundant battery
Auberry Tap-Auberry 70 KV line	P1-1-A14:47_ REEDLEY 115/70KV TB 4 & P1-3-A14:46_ REEDLEY 115/70KV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	115	Continue to monitor
	P2-2-A14:47_ HERNDON 115KV SECTION 2D	P2	Bus/Breaker	4	14	6	35	102	73	15	101	15	36	Generation re-dispatch	
	P2-3-A14:65_ HERNDON - 2D 115KV & HERNDON-BULLARD #2 LINE	P2	Bus/Breaker	5	14	6	35	102	73	15	101	15	36	Generation re-dispatch	
BARTON-AIRWAYS-SANGER 115KV	P2-3-A14:66_ HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2	Bus/Breaker	4	14	6	36	103	73	15	102	15	36	Generation re-dispatch	
	P1-3-A13:11_ BORDEN 230/70KV TB 4 & P1-1-A14:101_ AGRICO 13.80KV & AGRICO 13.80KV GEN UNITS	P3	G-1/N-1	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project:Borden transformer upgrade project
	P1-3-A13:11_ BORDEN 230/70KV TB 4 & P1-2-A13:17_ PANOCHE-PANOCHE ENERGY CENTER 230KV [2293]	P6	N-1-1	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project:Borden transformer upgrade project
BORDEN-COPPERMINE 70KV	P2-4-A14:19_ HERNDON 115KV - SECTION 1D & 2D	P2	Bus/Breaker	71	68	86	4	44	54	53	44	53	108	Continue to monitor	
	P1-2-A14:118_ TIVY VALLEY-REEDLEY 70KV [9260] & P1-1-A14:93_ FRIANTDAM 6.60KV GEN UNIT 2	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	103	Continue to monitor
	P5-5a-A14:2_ HERNDON #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	71	68	86	4	44	55	53	44	53	107	Sensitivity only	
	P1-2-A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	64	60	75	5	17	3	51	17	51	113	Continue to monitor	
	P1-2-A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY & P1-1-A14:94_ FRIANTDAM 6.60KV GEN UNIT 3	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	107	Continue to monitor
CANTUA-EXCELSIORSS 115KV	P1-2-A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY & P1-1-A14:94_ FRIANTDAM 6.60KV GEN UNIT 3	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	106	Continue to monitor
	P5-5c-A13:8_ Borden 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	73	NA	NA	3	NA	NA	NA	114	Sensitivity only	
	P5-5c-A13:8_ Borden 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	73	NA	NA	3	NA	NA	NA	113	Add redundant battery	
	P1-2-A14:46_ PANOCHE-EXCELSIOR SW STA #2 115KV [3260] & P1-3-A14:41_ SCHINDLR 115/12.47KV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	126	Continue to monitor
	P1-2-A14:46_ PANOCHE-EXCELSIOR SW STA #2 115KV [3260] & P1-3-A14:41_ SCHINDLR 115/12.47KV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	123	Continue to monitor
CHOWCHILLA-KERCKHOFF 115KV	P1-2-A14:46_ PANOCHE-EXCELSIOR SW STA #2 115KV [3260] & P1-3-A14:41_ SCHINDLR 115/12.47KV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	126	Continue to monitor
	P5-5c-A13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	74	21	10	36	NConv	38	NConv	Add redundant battery	
	P5-5c-A13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	74	21	10	36	NConv	38	NConv	Add redundant battery	
	P1-2-A14:52_ KERCKHOFF-CLOVIS-SANGER #2 115KV [1900] & P1-2-A14:50_ KERCKHOFF-CLOVIS-SANGER #1 115KV [1890]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	104	Continue to monitor
	P1-2-A14:52_ KERCKHOFF-CLOVIS-SANGER #2 115KV [1900] & P1-2-A14:50_ KERCKHOFF-CLOVIS-SANGER #1 115KV [1890]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	104	Continue to monitor
	P2-3-A14:1_ GREGG 230KV - MIDDLE BREAKER BAY 1	P2	Bus/Breaker	39	56	23	101	15	15	54	14	56	47	Generation re-dispatch	
	P5-5c-A13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	64	20	56	4	NConv	4	NConv	Add redundant battery	
	P5-5c-A13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	83	26	73	5	NConv	5	NConv	Add redundant battery	
	P5-5c-A14:21_ Sanger 115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	16	16	25	65	25	114	92	18	92	31	Generation re-dispatch	
	P5-5c-A13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	87	29	25	2	NConv	2	NConv	Add redundant battery	
	P5-5c-A13:9_ Borden 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	20	34	NA	103	22	NA	46	22	47	NA	Off-peak only	
	P5-5c-A14:21_ Sanger 115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	17	16	22	68	28	117	95	21	95	28	Off-peak only	
	P1-2-A14:52_ KERCKHOFF-CLOVIS-SANGER #2 115KV [1900] & P1-2-A14:50_ KERCKHOFF-CLOVIS-SANGER #1 115KV [1890]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	114	Continue to monitor
	P1-2-A14:52_ KERCKHOFF-CLOVIS-SANGER #2 115KV [1900] & P1-2-A14:50_ KERCKHOFF-CLOVIS-SANGER #1 115KV [1890]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	118	Continue to monitor
	COALINGA #1-SAN MIGUEL 70KV	P7-1-A14:12_ KERCKHOFF-CLOVIS-SANGER #1 115KV [1890] & KERCKHOFF-CLOVIS-SANGER #2 115KV [1900]	P7	DTCL	16	16	25	65	24	114	91	18	91	31	Generation re-dispatch
P7-1-A13:13_ BORDEN-GREGG 230KV #1 & #2 [4400]		P7	DTCL	39	56	23	101	15	15	54	14	56	47	Generation re-dispatch	
P7-1-A13:1_ WILSON-BORDEN 230KV #1 & #2 [9001]		P7	DTCL	36	51	7	100	13	40	65	13	66	55	Generation re-dispatch	
P7-1-A14:12_ KERCKHOFF-CLOVIS-SANGER #1 115KV [1890] & KERCKHOFF-CLOVIS-SANGER #2 115KV [1900]		P7	DTCL	17	16	22	68	28	117	95	21	95	28	Generation re-dispatch	
P2-4-A14:8_ GATES D 230KV - SECTION 2D & 1D		P2	Bus/Breaker	56	30	26	45	54	83	42	60	43	112	Continue to monitor	
P5-5a-A14:1_ GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)		P5	Non-Redundant Battery/Relay	70	34	24	20	46	38	84	54	85	120	Sensitivity only	
P1-2-A14:28_ TEMPLETON-GATES 230KV [5934] & P1-2-A14:25_ CALIFORNIA FLATS SW STA-GATES 230KV [5281]		P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	103	Continue to monitor
P7-1-A14:14_ TEMPLETON-GATES 230KV [5934] & GATES-CALFLATSSS #1 230KV [0]		P7	DTCL	53	30	25	48	53	88	8	59	8	113	Continue to monitor	
P5-5c-A14:14_ Gates 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)		P5	Non-Redundant Battery/Relay	108	78	72	43	49	75	67	56	67	147	Project:Gates additional bank project	
COLINGA 1-COLINGA 2 70KV	P5-5c-A14:14_ Gates 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	102	72	66	48	43	81	61	50	61	141	Project:Gates additional bank project	
	P1-2-A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	75	81	106	12	6	18	61	6	61	154	Continue to monitor	
	P1-2-A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY & P1-1-A14:98_ CHV.COAL 9.11KV GEN UNIT 2	P3	G-1/N-1	<100	<100	106	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
	P5-5c-A13:8_ Borden 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	103	NA	18	NA	NA	NA	NA	154	Continue to monitor	
	P1-3-A13:11_ BORDEN 230/70KV TB 4 & P1-3-A13:10_ BORDEN 230/70KV TB 1	P6	N-1-1	0	0	<100	134	125	<100	<100	125	<100	<100	Generation re-dispatch	
Corgold-Oakhurst 115 kv line	Base Case	P0	Basecase	81	90	99	69	28	5	64	28	64	107	Continue to monitor	
	Base Case & P1-1-A14:80_ KERCKHOFFPHJ 13.80KV GEN UNIT 1	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	109	Continue to monitor
	P2-2-A14:13_ HELM 230KV SECTION 1D	P2	Bus/Breaker	64	100	112	100	90	51	100	92	100	288	Continue to monitor	
	P2-3-A13:7_ TRANQLTYSS 230KV - MIDDLE BREAKER BAY 3	P2	Bus/Breaker	36	62	46	73	58	69	98	58	95	101	Continue to monitor	
	P2-3-A14:18_ MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	55	65	50	23	17	11	118	18	123	84	Sensitivity only	
	P2-4-A13:13_ PANOCHE1 SECTION 1D & PANOCHE2 SECTION 2D 115KV	P2	Bus/Breaker	17	21	20	96	71	144	21	71	17	65	Generation re-dispatch	
	P2-4-A13:5_ PANOCHE 230KV - SECTION 1D & 2D	P2	Bus/Breaker	61	NA	NA	NA	21	NA	243	27	NA	NA	Project: Manning project	
	P2-4-A14:40_ HELM 230KV - SECTION 1D & 2D	P2	Bus/Breaker	NA	NA	112	NA	NA	51	NA	NA	NA	74	Continue to monitor	
	P1-2-A14:12_ TRANQUILITY SW STA-HELM 230KV [5370] & P1-1-A14:123_ EXCELSIOR1-25 25.00KV GEN UNIT V5	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	100	Continue to monitor
	P5-5c-A13:4_ Panoche 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	63	56	47	76	34	121	190	24	85	9	Off-peak only	
	P5-5c-A13:5_ Tranquility SW STA 230KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	36	72	54	90	50	104	122	50	121	131	Off-peak only	
	CRESCENTSS-SCHINDLER #1 70KV	P1-3-A14:84_ Q1709 70/34.5KV TB 1 & P1-2-A14:12_ TRANQUILITY SW STA-HELM 230KV [5370]	P6	N-1-1	<100	<100	<100	<100	<100	114	<100	<100	<100	<100	<100

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						2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer- Off Peak	2027 Spring Off- Peak	2035 Spring Off- Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SP/ENVY area Hi-EV sensitivity		
LOS BANOS-DOS AMIGOS 230KV	P5-SCA13-4; Panoche 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			28	NA	NA	NA	28	NA	28	28	171	NA	Add redundant battery	
	P2-2-A13-2; LOSBANOS 230KV SECTION 2D	P2	Bus/Breaker			42	31	23	101	33	57	106	41	82	47	Generation re-dispatch	
LOS BANOS-PANOCHÉ #2 230KV	P5-SA-A14-1; GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay			47	24	19	59	17	41	111	22	112	43	Add redundant relay	
	P5-SCA14-14; Gates 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			47	24	19	58	15	40	113	20	113	43	Add redundant battery	
MANNING 230/500KV TB 1	P1-3-A13-53; MANNING 500/230KV TB 2 & P1-2-A14-18; MUSTANG SW STA-MCCALL 230KV [4710]	P6	N-1-1			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
MANNING 500/230KV TB 2	P1-3-A13-57; MANNING 230/500KV TB 1 & P1-2-A14-18; MUSTANG SW STA-MCCALL 230KV [4710]	P6	N-1-1			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Continue to monitor	
MCCALL-KINGSBURG #1 115KV	P1-2-A14-86; MCCALL-KINGSBURG #2 115KV [2300] & P1-2-A14-28; HENRIETTA, E-HENRIETTA, F #1 230KV [0]	P6	N-1-1			<100	<100	<100	103	<100	<100	<100	<100	<100	<100	Generation re-dispatch	
	P1-2-A14-86; MCCALL-KINGSBURG #2 115KV [2300] & P1-2-A14-28; HENRIETTA, E-HENRIETTA, F #1 230KV [0]	P6	N-1-1			<100	<100	<100	122	<100	<100	<100	<100	<100	<100	Generation re-dispatch	
	P1-2-A14-83; MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1, KINGS J2 & P1-2-A14-28; HENRIETTA, E-HENRIETTA, F #1 230KV [0]	P6	N-1-1			<100	<100	<100	103	<100	<100	<100	<100	<100	<100	Generation re-dispatch	
MCCALL-KINGSBURG #2 115KV	P1-2-A14-83; MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1, KINGS J2 & P1-2-A14-28; HENRIETTA, E-HENRIETTA, F #1 230KV [0]	P6	N-1-1			<100	<100	<100	103	<100	<100	<100	<100	<100	<100	Generation re-dispatch	
	P1-2-A14-80; GWF-KINGSBURG 115KV [1743] & P1-2-A14-79; MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1, KINGS J2	P6	N-1-1			<100	<100	<100	103	<100	<100	<100	<100	<100	<100	Generation re-dispatch	
MCCALL-REEDLEY 115KV	P5-SCA14-21; Sanger 115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			78	76	97	50	47	12	46	47	46	102	Add redundant battery	
	P1-2-A13-81; BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY & P1-1-A14-91; KINGSRIVERPH 13.80KV GEN UNIT 1	P3	G-1/N-1			<100	<100	<100	<100	<100	<100	<100	<100	<100	101	Continue to monitor	
	P5-SCA14-21; Sanger 115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			98	92	122	72	66	17	62	67	62	130	Add redundant battery	
MCSWAIN-MERCEDFALLS-EXCHEQR 70KV	P2-4-A13-12; WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker			NConv	NA	NA	NA	NConv	NA	151	NConv	NA	NA	Project: Manning project	
	P2-4-A13-12; WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker			NConv	NA	NA	NA	NConv	NA	150	NConv	NA	NA	Project: Manning project	
	P5-SA-A13-1; WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay			NConv	NA	NA	NA	NConv	NA	151	NConv	NA	NA	Project: Wilson Area reinforcement project	
MENDOTA 115/70KV TB 5	P5-SCA13-2; Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			NConv	NConv	NConv	167	132	109	149	NConv	151	NConv	Add redundant battery	
	P1-2-A13-61; LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON ADERASRUJCT, DAIRYLAND & P1-2-A13-57; PANOCHÉ-MENDOTA 115KV [3230]	P6	N-1-1			<100	0	0	<100	<100	<100	<100	<100	<100	<100	116	Continue to monitor
	P2-4-A13-5; PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker			39	NA	NA	NA	31	NA	115	43	NA	NA	NA	Project: Manning project
MENDOTA-ADAMSEAST-GIFFEN-HELM 70KV	P2-4-A13-5; PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker			29	NA	NA	NA	8	NA	115	33	NA	NA	NA	Project: Manning project
	P2-4-A13-5; PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker			26	NA	NA	NA	8	NA	116	33	NA	NA	NA	Project: Manning project
	P2-4-A13-5; PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker			35	NA	NA	NA	31	NA	124	42	NA	NA	NA	Project: Manning project
	P2-4-A13-5; PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker			24	NA	NA	NA	16	NA	139	28	NA	NA	NA	Project: Manning project
	P1-2-A13-44; LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_ADERASRUJCT & P1-2-A13-57; PANOCHÉ-MENDOTA 115KV [3230]	P6	N-1-1			110	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Wilson Area reinforcement project
	P1-3-A14-32; HELM 230/70KV TB 1 & P1-3-A14-40; SCHINDLR 115/12.47KV TB 2	P6	N-1-1			<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Generation re-dispatch
	P7-1-A13-6; PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7	DTCL			35	NA	NA	NA	15	NA	120	26	NA	NA	NA	Project: Manning project
	P7-1-A13-6; PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7	DTCL			25	NA	NA	NA	5	NA	120	16	NA	NA	NA	Project: Manning project
	P7-1-A13-6; PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7	DTCL			22	NA	NA	NA	5	NA	120	16	NA	NA	NA	Project: Manning project
	P7-1-A13-6; PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7	DTCL			31	NA	NA	NA	15	NA	129	26	NA	NA	NA	Project: Manning project
MERCED 115/70 KV bank2	P7-1-A13-6; PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7	DTCL			21	NA	NA	NA	2	NA	144	11	NA	NA	NA	Project: Manning project
	P2-4-A13-12; WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker			NConv	NA	NA	NA	NConv	NA	82	NConv	NA	NA	NA	Project: Wilson Area reinforcement project
	P5-SA-A13-1; WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay			NConv	NA	NA	NA	NConv	NA	47	NConv	NA	NA	NA	Project: Wilson Area reinforcement project
MERCED-MERCED FALLS 70KV	P5-SCA13-2; Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			NConv	NConv	NConv	48	56	91	49	NConv	49	NConv	Add redundant battery	
	P5-SA-A13-1; WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay			NConv	NA	NA	NA	NConv	NA	82	NConv	NA	NA	NA	Project: Wilson Area reinforcement project
	P5-SCA13-2; Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			NConv	NConv	NConv	52	72	90	83	NConv	83	NConv	Add redundant battery	
MERCY SPRINGS SW STA-CANAL-ORO LOMA 70KV	P2-4-A13-12; WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker			NConv	NA	NA	NA	NConv	NA	47	NConv	NA	NA	NA	Project: Wilson Area reinforcement project
	P2-4-A13-12; WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker			NConv	NA	NA	NA	NConv	NA	154	NConv	NA	NA	NA	Project: Wilson Area reinforcement project
	P5-SA-A13-1; WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay			NConv	NA	NA	NA	NConv	NA	154	NConv	NA	NA	NA	Project: Wilson Area reinforcement project
MOSS LANDING-LAS AGUILAS SW STA - 230 KV 230KV	P5-SCA13-2; Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			NConv	NConv	NConv	152	137	108	152	NConv	154	NConv	Add redundant battery	
	P1-2-A13-69; LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P1	N-1			127	46	48	15	29	17	76	29	76	40	Project: Losbanos area reinforcement project	
	P1-2-A13-69; LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P1	N-1			127	46	45	4	29	32	76	29	76	34	Project: Losbanos area reinforcement project	
MUSTANG SW STA-GREGG 230KV	P2-4-A13-1; LOSBANOS 230KV - SECTION 1D & 2D	P2	Bus/Breaker			30	NA	NA	NA	48	NA	103	55	NA	NA	NA	Project: Mosslanding-LasAguilas series reactor project
	P5-SA-A14-1; GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay			32	NA	NA	NA	37	NA	106	42	107	NA	Sensitivity only	
	P5-SCA13-1; Los Banos 230KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			30	NA	NA	NA	48	NA	103	55	103	NA	NA	Sensitivity only
Panoche 230/115KV Bank 1	P5-SCA14-14; Gates 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			32	NA	NA	NA	36	NA	107	40	108	NA	Sensitivity only	
	P5-SCA13-4; Panoche 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay			21	8	16	1	31	14	103	28	77	58	Sensitivity only	
	P1-3-A13-38; MENDOTA 115/70KV TB 5	P1	N-1			30	76	82	79	19	32	25	19	24	111	Continue to monitor	
	P2-1-A13-46; PANOCHÉ-MENDOTA 115KV [3230] (PANOCHET-PANOCHÉ1)	P2	Bus/Breaker			54	86	94	83	44	103	99	45	99	82	Generation re-dispatch	
	P2-2-A13-24; PANOCHÉ 115KV SECTION 1D	P2	Bus/Breaker			47	81	89	86	38	105	100	39	99	77	Generation re-dispatch	
	P2-3-A13-34; PANOCHÉ - 1D 115KV & PANOCHÉ-CAL PEAK-STARWOOD LINE	P2	Bus/Breaker			47	81	89	86	38	105	100	39	99	77	Generation re-dispatch	
	P2-3-A13-35; PANOCHÉ - 1D 115KV & PANOCHÉ-EXCELSIOR SW STA #1 LINE	P2	Bus/Breaker			47	81	89	86	38	105	100	39	99	77	Generation re-dispatch	
	P2-3-A13-37; MENDOTA 115KV - MIDDLE BREAKER BAY 1	P2	Bus/Breaker			31	76	82	79	19	32	25	19	24	111	Continue to monitor	
	P2-4-A13-13; PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker			8	63	71	95	22	104	79	23	77	63	Generation re-dispatch	
	P2-2-A13-24; PANOCHÉ 115KV SECTION 1D	P2	Bus/Breaker			28	39	41	105	11	88	99	11	99	44	Generation re-dispatch	
	P2-3-A13-34; PANOCHÉ - 1D 115KV & PANOCHÉ-CAL PEAK-STARWOOD LINE	P2	Bus/Breaker			28	39	41	105	11	88	99	11	99	44	Generation re-dispatch	
	P2-3-A13-35; PANOCHÉ - 1D 115KV & PANOCHÉ-EXCELSIOR SW STA #1 LINE	P2	Bus/Breaker			28	39	41	105	11	88	99	11	99	44	Generation re-dispatch	
	P2-3-A13-36; PANOCHÉ - 1D 115KV & PANOCHÉ-MENDOTA LINE	P2	Bus/Breaker			28	39	41	103	11	86	99	11	99	44	Generation re-dispatch	
	P2-4-A13-13; PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker			55	39	8	112	35	88	86	36	85	52	Generation re-dispatch	
	P1-2-A13-57; P																

				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer- Off Peak	2027 Spring Off- Peak	2035 Spring Off- Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SP area Hi-SVLY sensitivity	
PANOCHÉ-MENDOTA 115KV	P2-A13-5: PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker	26	NA	NA	NA	15	NA	105	13	NA	NA	Project: Manning project
	P7-1A13-6: PANOCHÉ-TRANQUILITY #1 230KV [0] & PANOCHÉ-TRANQUILITY #2 230KV [0]	P7	DTCL	26	NA	NA	NA	25	NA	105	23	NA	NA	Project: Manning project
	P7-1A13-6: PANOCHÉ-TRANQUILITY #1 230KV [0] & PANOCHÉ-TRANQUILITY #2 230KV [0]	P7	DTCL	26	NA	NA	NA	25	NA	106	23	NA	NA	Project: Manning project
PANOCHÉ-TRANQUILITY SW STA #1 230KV	P1-2A13-16: PANOCHÉ-TRANQUILITY SW STA #2 230KV [5481] & P1-2A14-28: HENRIETTA, E- HENRIETTA, F #1 230KV [0]	P6	N-1-1	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Sensitivity only
PANOCHÉ-TRANQUILITY SW STA #2 230KV	P1-2A13-15: PANOCHÉ-TRANQUILITY SW STA #1 230KV [5000] & P1-2A14-28: HENRIETTA, E- HENRIETTA, F #1 230KV [0]	P6	N-1-1	<100	<100	<100	<100	<100	<100	102	<100	<100	<100	Sensitivity only
	P2-4A14-33: HELMS PP2 SECTION 1E & HELMS PP3 SECTION 1F 230KV	P2	Bus/Breaker	84	100	102	68	73	35	40	78	58	102	Continue to monitor
	P5-SCA13-1: Los Banos 230KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	97	101	68	0	35	0	0	0	100	Add redundant battery
	P5-SCA13-5: Tranquility SW STA 230KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	82	97	99	68	76	35	38	80	55	102	Sensitivity only
	P5-SCA14-2: Gregg 230KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	84	100	102	68	73	35	40	78	58	102	Add redundant battery
	P7-1A14-8: HELMS-GREGG #1 230KV [4870] & HELMS-GREGG #2 230KV [4880]	P7	DTCL	84	100	102	68	73	35	40	78	58	102	Continue to monitor
RIOBRVFSNO-MALAGA-MC CALL 115KV	P2-2A14-32: MALAGA 115KV SECTION 1F	P2	Bus/Breaker	62	105	94	49	66	60	22	76	22	90	Generation re-dispatch
	P2-4A14-11: MALAGA 115KV - SECTION 1F & 1E	P2	Bus/Breaker	74	117	106	67	71	61	29	80	29	102	Generation re-dispatch
	P5-SaA14-3: MCCALL #1 & 2 115KV BUS (Failure OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	95	101	103	62	30	12	67	30	67	113	Add redundant battery
SANGER-CALIFORNIA AVE 115KV	P5-SCA14-10: Mocal 230-115KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	103	NConv	62	31	13	0	31	67	116	Add redundant battery
	P1-2A14-72: MCCALL-WEST FRESNO #2 115KV [2370] & P1-2A14-66: CALIFORNIA AVE-MCCALL 115KV [2360]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	104	Continue to monitor
	P7-1A14-11: CALIFORNIA AVE-MCCALL 115KV [2360] & MCCALL-WEST FRESNO #2 115KV [2370]	P7	DTCL	86	93	91	63	29	6	63	29	63	106	Continue to monitor
SANGER-REEDLEY 115KV	P1-2A14-64: MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & P1- 2A14-61: JINGS RIVER-SANGER-REEDLEY 115KV [2030]	P6	N-1-1	<100	<100	111	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
	P2-2A14-13: HELM 230KV SECTION 1D	P2	Bus/Breaker	51	43	45	40	24	42	82	25	82	121	Continue to monitor
	P2-3A14-18: MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	54	43	38	34	7	41	106	6	106	99	Sensitivity only
	P2-4A13-13: PANOCHÉ SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker	57	54	48	83	37	83	128	38	117	126	Continue to monitor
	P2-2A14-13: HELM 230KV SECTION 1D	P2	Bus/Breaker	53	45	47	18	24	14	52	25	49	126	Continue to monitor
	P2-3A14-18: MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	55	43	38	3	7	3	75	5	73	101	Continue to monitor
	P2-4A13-13: PANOCHÉ SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker	57	54	50	57	38	53	96	38	82	128	Continue to monitor
	P2-4A13-13: PANOCHÉ SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker	30	27	21	58	10	57	102	11	90	99	Sensitivity only
	P5-SaA14-1: GATES SECTION D & E 230 KV BUS (Failure OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	53	39	40	24	8	45	45	9	45	107	Sensitivity only
	P5-SCA13-4: Panoche 230-115KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	37	30	23	63	20	62	184	21	144	114	Sensitivity only
	P5-SCA14-14: Gates 230-70KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	119	90	82	7	42	37	108	49	109	196	Project:Gates additional bank project
	P5-SaA14-1: GATES SECTION D & E 230 KV BUS (Failure OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	55	38	40	54	4	69	19	7	18	107	Sensitivity only
	P5-SCA13-4: Panoche 230-115KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	38	28	23	38	17	30	152	20	111	116	Sensitivity only
SCHINDLER-COALINGA #2 70KV	P5-SCA14-14: Gates 230-70KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	119	91	83	35	43	58	77	50	75	193	Project:Gates additional bank project
	P5-SCA13-4: Panoche 230-115KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	10	1	7	38	17	34	158	12	119	87	Sensitivity only
	P5-SCA14-14: Gates 230-70KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	92	64	54	28	2	56	82	25	83	165	Sensitivity only
	P1-2A14-50: PANOCHÉ-EXCELSIOR SW STA #2 115KV [3260] & P1-2A14-51: PANOCHÉ-EXCELSIOR SW STA #1 115KV [3250] MOAS OPENED ON PANOCHÉ1_KAMM_JCT	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Generation re-dispatch
	P1-2A14-4: TRANQUILITY SW STA HELM 230KV [5370] & P1-2A14-17: HELM-MCCALL 230KV [4860]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	Continue to monitor
	P7-1A13-14: EXCELSIORSS-PANOCHÉ1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	35	29	23	58	13	58	104	14	107	113	Continue to monitor
	P7-1A14-10: PANOCHÉ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	37	31	25	66	21	65	111	21	112	112	Continue to monitor
	P7-1A14-3: MUSTANGSS-GATES #1 230KV [0] & MUSTANGSS-GATES #2 230KV [0]	P7	DTCL	54	44	39	35	8	41	107	6	107	101	Continue to monitor
	P7-1A13-14: EXCELSIORSS-PANOCHÉ1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	35	28	24	34	14	27	73	14	73	115	Continue to monitor
	P7-1A14-10: PANOCHÉ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	37	29	26	40	19	34	79	20	78	114	Continue to monitor
	P7-1A14-3: MUSTANGSS-GATES #1 230KV [0] & MUSTANGSS-GATES #2 230KV [0]	P7	DTCL	55	44	39	4	8	3	76	6	74	103	Continue to monitor
	P2-2A14-13: HELM 230KV SECTION 1D	P2	Bus/Breaker	38	32	35	9	6	5	37	6	37	124	Continue to monitor
	P2-4A13-13: PANOCHÉ SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker	43	44	39	56	23	52	96	23	81	125	Continue to monitor
	P5-SaA14-1: GATES SECTION D & E 230 KV BUS (Failure OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	32	18	24	81	28	107	25	27	24	79	Off-peak only
	P5-SCA13-4: Panoche 230-115KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	19	10	7	30	39	16	167	10	117	109	Sensitivity only
	P1-3A13-59: PANOCHÉ1 115/230KV TB 1 & P1-3A13-6: PANOCHÉ 230/115KV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	Continue to monitor
	P7-1A13-14: EXCELSIORSS-PANOCHÉ1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	15	10	8	18	12	18	65	12	68	108	Continue to monitor
	P7-1A14-10: PANOCHÉ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	18	12	10	34	8	28	73	8	75	106	Continue to monitor
	P2-4A13-13: PANOCHÉ SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker	51	45	46	106	64	128	110	64	81	158	Continue to monitor
	P5-SCA13-4: Panoche 230-115KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	11	9	17	72	12	87	80	12	80	129	Sensitivity only
	P1-3A13-5: PANOCHÉ 230/115KV TB 1 & P1-3A13-6: PANOCHÉ 230/115KV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Generation re-dispatch
	P7-1A13-14: EXCELSIORSS-PANOCHÉ1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	11	13	19	58	2	72	71	2	71	130	Continue to monitor
	P7-1A14-10: PANOCHÉ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7	DTCL	10	9	17	72	12	87	83	12	82	128	Continue to monitor
	P1-2A13-81: BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	92	99	130	38	5	19	71	5	71	185	Continue to monitor
	P2-3A14-1: GREGG 230KV - MIDDLE BREAKER BAY 1	P2	Bus/Breaker	62	82	67	106	22	13	72	25	73	76	Generation re-dispatch
	P1-2A13-81: BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY & P1- 1A14-98: CHY COAL 9.11KV GEN UNIT 2	P3	G-1/N-1	<100	<100	130	<100	<100	<100	<100	<100	<100	<100	Continue to monitor
	P5-SCA13-8: Borden 230-70KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	126	NA	NA	19	NA	NA	NA	185	Add redundant battery
	P5-SCA14-2: Gregg 230KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	29	52	33	101	38	17	51	41	52	51	Off-peak only
	P1-2A14-14: BORDEN-GREGG #2 230KV [4400] & P1-2A14-13: BORDEN-GREGG #1 230KV [1082]	P6	N-1-1	<100	<100	<100	105	<100	<100	<100	<100	<100	<100	Generation re-dispatch
	P7-1A13-13: BORDEN-GREGG 230KV #1 & #2 [4400]	P7	DTCL	62	82	67	106	22	13	72	25	73	76	Generation re-dispatch
	P2-3A14-18: MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	9	20	19	22	27	35	56	27	54	113	Continue to monitor
	P2-4A14-2: HERNDON 230KV - SECTION 1E & 1D	P2	Bus/Breaker	10	11	15	1	4	4	2	4	2	100	Continue to monitor
	P5-SaA14-1: GATES SECTION D & E 230 KV BUS (Failure OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0	17	16	19	23	35	49	23	48	106	Sensitivity only
	P5-SCA14-14: Gates 230-70KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0	19	17	21	23	35	51	23	50	109	Sensitivity only
	P5-SCA14-5: Herndon 230-115KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	10	11	15	1	4	4	2	4	2	100	Sensitivity only
	P1-2A14-22: GATES-MUSTANG SW STA #2 230KV [2605] & P1-2A14-21: GATES-MUSTANG SW STA #1 230KV [2604]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	Continue to monitor
	P7-1A14-22: HENTAP1-MUSTANGSS #1 230KV [0] & HERNDON-KEARNEY 230KV [4900]	P7	DTCL	10	11	15	1	4	4	2	4	2	100	Continue to monitor
	P7-1A14-3: MUSTANGSS-GATES #1 230KV [0] & MUSTANGSS-GATES #2 230KV [0]	P7	DTCL	9	18	16	19	25	34	52	25	50	107	Continue to monitor
	P7-1A13-19: COTTLE-MELONES 230KV [4530] & BELLOTA-WARNERVILLE 230KV [4380]	P7	DTCL	72	41	47	56	54	59	101	57	104	56	Sensitivity only
	P7-1A13-5: BELLOTA-COTTLE 230KV [4360] & BELLOTA-WARNERVILLE 230KV [4380]	P7	DTCL	70	39	46	56	53	59	100	56	103	55	Sensitivity only
	P7-1A13-19: COTTLE-MELONES 230KV [4530] & BELLOTA-WARNERVILLE 230KV [4380]	P7	DTCL	70	37	44	53	52	56	99	55	101	53	Sensitivity only
	P7-1A13-5: BELLOTA-COTTLE 230KV [4360] & BELLOTA-WARNERVILLE 230KV [4380]	P7	DTCL	67	36	42	53	51	56	98	54	101	51	Sensitivity only
	P2-2A14-2: HELMS PP2 230KV SECTION 1E	P2	Bus/Breaker	37	24	3	51	27	100	26	33	26	20	Generation re-dispatch
	P2-3A14-18: MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	26	29	46	70	12	106	81	7	81	68	Generation re-dispatch
	P2-4A14-32: HELMS PP1 SECTION 1D & HELMS PP2 SECTION 1E 230KV	P2	Bus/Breaker	37	24	3	51	27	100	26	33	26	20	Generation re-dispatch
	P1-2A14-21: HERNDON-KEARNEY 230KV [4900] & P1-1A14-124: GREGG 2-25 25.00KV GEN UNIT VP	P3	G-1/N-1	<100	<100	<100	<100	<100	100	<100	<100	<100	<100	Generation re-dispatch
	P5-SaA14-1: GATES SECTION D & E 230 KV BUS (Failure OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	33	27	44	67	16	105	89	10	89	67	Off-peak only
	P5-SCA13-5: Tranquility SW STA 230KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	6	15	34	61	9	104	54	12	54	47	Off-peak only
	P5-SCA14-14: Gates 230-70KV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	33	27	44	66	17	105	90	11			

				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer- Off Peak	2027 Spring Off- Peak	2035 Spring Off- Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 S/NLY area HI-EV sensitivity	
WILSON-BORDEN #1 230KV	P2-3A14:18_ MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	39	51	39	78	25	45	97	19	97	102	Continue to monitor
	P5-5a:A14:1_ GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	42	48	35	75	25	44	100	20	101	95	Sensitivity only
	P5-5c:A14:14_ Gates 230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	42	48	36	75	26	44	101	20	102	96	Sensitivity only
	P5-5a:A14:1_ GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	51	33	13	38	21	11	103	16	103	28	Sensitivity only
	P5-5c:A14:14_ Gates 230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	51	33	13	38	22	11	104	17	105	28	Sensitivity only
WILSON-MERCED #1 115KV	P1-2-A13:52_ WILSON-MERCED #2 115KV [4190] & P1-1-A13:51_ EXCHQUER 13.80KV GEN UNIT 1	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	101	Continue to monitor
	P1-2-A13:52_ WILSON-MERCED #2 115KV [4190] & P1-2-A13:38_ ATWATER-EL CAPITAN 115KV [1020]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	Continue to monitor
	P7-1-A13:10_ ATWATER-EL CAPITAN 115KV [1020] & WILSON-ATWATER #2 115KV [4160]	P7	DCTL	64	70	84	22	17	28	29	17	29	101	Continue to monitor
	P7-1-A13:12_ EL CAPITAN-WILSON 115KV [1510] & WILSON-ATWATER #2 115KV [4160]	P7	DCTL	63	70	84	37	28	36	44	28	19	101	Continue to monitor
WILSON-MERCED #2 115KV	P1-2-A13:50_ WILSON-MERCED #1 115KV [4180] & P1-1-A13:51_ EXCHQUER 13.80KV GEN UNIT 1	P3	G-1/N-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	104	Continue to monitor
WOODWARD-SHEPHERD 115KV	P7-1-A14:25_ HERNDON-BARTON 115KV [1750] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7	DCTL	20	13	17	34	102	80	20	99	20	36	Generation re-dispatch
	P7-1-A14:7_ BARTON-AIRWAYS-SANGER 115KV [1060] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7	DCTL	20	23	19	40	108	75	18	105	18	22	Generation re-dispatch

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SIVLY area Hi-EV sensitivity	
ANGIOLA 70 kV	CORCORAN 115KV [B773]	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.88	Continue to monitor
ARBURJUA 70 kV	CANAL 70KV [B940]	P3	N-1/G-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Project: Losbanos 70 kV area reinforcement project
ASHLAN 230kV	P5-ScA14-2: Gregg 230kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Battery/Relay	0.94	0.91	0.83	1.06	1.06	1.08	1.00	1.06	1.00	0.92	Continue to monitor
ATWATER 115kV	P2-4A13-12: WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.31	NConv	NA	NA	Project: Wilson Area reinforcement project
	P5-ScA13-1: WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.31	NConv	NA	NA	Project: Wilson Area reinforcement project
	P5-ScA13-2: Wilson 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Battery/Relay	NConv	NConv	NConv	0.42	0.40	1.13	0.32	NConv	0.33	NConv	Add redundant battery
AUBERRY 70 kV	70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.56	Continue to monitor
	70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	0.54	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.50	Continue to monitor
	BORDEN_CASSIDY	P1	N-1	0.99	1.00	0.79	1.03	1.02	1.05	1.02	1.02	1.02	0.56	Continue to monitor
P5-ScA13-8: Borden 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Battery/Relay	NA	NA	0.81	NA	NA	1.05	NA	NA	NA	0.56	Continue to monitor	
AUBRYPT 70kV	BORDEN_CASSIDY	P1	N-1	1.00	1.00	0.80	1.03	1.02	1.05	1.02	1.02	1.02	0.58	Continue to monitor
BARTON 115kV	P5-ScA14-2: Gregg 230kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.89	1.05	1.08	1.08	1.02	1.08	1.02	0.96	Continue to monitor
BERT VILLY 70 kV	P1-1A13-53: MCSWAIN 4.18KV GEN UNIT 1 & P1-2A13-42: EXCHEQUER-LE GRAND 115KV [1560]	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.90	Continue to monitor
	P5-ScA13-2: Wilson 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.73	0.82	1.00	0.92	NConv	0.91	NConv	Add redundant battery
BOSWELL 70 kV	P1-1A14-91: KINGSRIVERPH 13.80KV GEN UNIT 1 & P1-2A14-89: WAUKENA SW STA-CORCORAN 115KV [B773]	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.89	Continue to monitor
BULLARD 115kV	P2-2A14-47: HERNDON 115KV SECTION 2D	P2	Bus/Breaker	0.96	0.95	0.91	1.06	1.03	1.06	0.99	1.03	0.99	0.90	Continue to monitor
	P2-3A14-66: HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2	Bus/Breaker	0.96	0.95	0.91	1.06	1.03	1.06	0.99	1.03	0.99	0.90	Continue to monitor
	P5-ScA14-2: Gregg 230kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.94	0.84	1.07	1.08	1.10	1.01	1.08	1.01	0.94	Continue to monitor
CAL AVE 115kV	P5-SaA14-3: MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.88	0.90	0.88	1.06	1.02	1.05	0.94	1.02	0.94	0.93	Add redundant relay
	P5-ScA14-10: Mccall 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	0.88	NConv	1.06	NA	1.05	NA	NA	0.93	0.90	Add redundant battery
	P1-1A13-43: VEGA 0.38KV GEN UNIT 1 & P1-2A13-69: LOS BANOS-LIVINGSTON JCT- CANAL 70KV [B940]	P3	N-1/G-1	0.84	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Project: Losbanos 70 kV area reinforcement project
CANAL 70 kV	P1-1A13-46: WRIGHT D 12.47KV GEN UNIT OF & P1-2A13-69: LOS BANOS-LIVINGSTON JCT-CANAL 70KV [B940]	P3	N-1/G-1	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Project: Losbanos 70 kV area reinforcement project
	P1-2A13-69: LOS BANOS-LIVINGSTON JCT-CANAL 70KV [B940]	P1	N-1	0.87	0.98	0.98	1.01	0.98	1.03	0.94	0.98	0.94	0.97	Project: Losbanos area reinforcement project
	P1-1A13-26: TRNBVRDOPV 0.55KV GEN UNIT 4 & P1-2A13-81: BORDEN-COPPERMINE 70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.57	Continue to monitor
CASSIDY 70 kV	P1-1A14-93: FRIANTDAM 6.60KV GEN UNIT 2 & P1-2A13-81: BORDEN-COPPERMINE 70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	0.55	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.51	Continue to monitor
	P1-2A13-81: BORDEN-COPPERMINE 70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	1.00	1.01	0.80	1.03	1.02	1.05	1.02	1.02	1.02	0.57	Continue to monitor
	P5-ScA13-8: Borden 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.83	NA	NA	1.05	NA	NA	NA	0.57	Continue to monitor
CHEVPLIN 70 kV	P1-1A14-29: AVALNSPV2 0.38KV GEN UNIT 2 & P1-2A14-134: ARCO-TULARE LAKE 70KV [B460]	P3	N-1/G-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor
	P1-1A14-30: AVALNSPV1 0.38KV GEN UNIT 1 & P1-2A14-134: ARCO-TULARE LAKE 70KV [B460]	P3	N-1/G-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor
	P5-ScA14-2: Gregg 230kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.96	0.88	1.07	1.08	1.09	1.01	1.08	1.01	0.96	Continue to monitor
CHLDHOSP 115kV	P1-1A13-75: CHWCHLLA1-25 25.00KV GEN UNIT V8 & P1-2A13-36: LE GRAND-CHOWCHILLA 115KV [2115]	P3	N-1/G-1	>0.9	>0.9	0.87	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.87	Continue to monitor
CLOVIS-1 115kV	P5-SaA14-3: MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.94	0.89	1.06	1.03	1.06	0.97	1.03	0.97	0.94	Continue to monitor
CLOVIS-2 115kV	P5-SaA14-3: MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.91	0.93	0.88	1.06	1.03	1.05	0.97	1.03	0.97	0.93	Continue to monitor
COLNGA 1 70kV	P5-ScA14-14: Gates 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.98	1.00	0.99	1.02	1.03	1.02	0.99	1.03	0.99	0.89	Sensitivity only
COLNGA 2 70kV	P5-ScA14-14: Gates 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	1.01	1.00	1.02	1.03	1.03	1.00	1.03	1.00	0.89	Sensitivity only
COPPRMINE 70 kV	P1-1A13-26: TRNBVRDOPV 0.55KV GEN UNIT 4 & P1-2A13-81: BORDEN-COPPERMINE 70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.64	Continue to monitor
	P1-1A14-91: KINGSRIVERPH 13.80KV GEN UNIT 1 & P1-2A13-81: BORDEN-COPPERMINE 70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.63	Continue to monitor
	P1-2A13-81: BORDEN-COPPERMINE 70KV [B500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	1.02	1.02	0.85	1.04	1.03	1.05	1.03	1.03	1.03	0.64	Continue to monitor
CORCORAN 115 kV	P5-ScA13-8: Borden 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.87	NA	NA	1.05	NA	NA	NA	0.64	Continue to monitor
	P1-1A14-91: KINGSRIVERPH 13.80KV GEN UNIT 1 & P1-2A14-89: WAUKENA SW STA-CORCORAN 115KV [B773]	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.89	Continue to monitor
	P1-1A14-91: KINGSRIVERPH 13.80KV GEN UNIT 1 & P1-2A14-89: WAUKENA SW STA-CORCORAN 115KV [B773]	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.90	Continue to monitor
CRESSEY 115kV	P2-4A13-12: WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.31	NConv	NA	NA	Project: Wilson Area reinforcement project
	P5-SaA13-1: WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.31	NConv	NA	NA	Project: Wilson Area reinforcement project
	P5-ScA13-2: Wilson 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.42	0.40	1.13	0.32	NConv	0.32	NConv	Add redundant battery
DERRICK 70kV	P5-ScA14-14: Gates 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	1.02	1.00	1.03	1.04	1.03	1.00	1.03	1.00	0.89	Sensitivity only
DINUBA 70kV	P5-ScA14-10: Mccall 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.99	NConv	1.04	1.04	1.04	1.03	1.03	1.00	0.90	Continue to monitor
DUNLAP 70kV	P5-SaA14-3: MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	0.94	0.99	0.88	1.03	1.02	1.04	1.00	1.02	1.00	0.92	Continue to monitor
	P5-ScA14-10: Mccall 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	NConv	1.03	1.03	1.04	1.01	1.03	0.99	0.87	Continue to monitor
	P2-4A13-12: WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.30	NConv	NA	NA	Project: Wilson Area reinforcement project
EL CAPTN 115kV	P5-SaA13-1: WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.30	NConv	NA	NA	Project: Wilson Area reinforcement project
	P5-ScA13-2: Wilson 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Battery/Relay	NConv	NConv	NConv	0.42	0.40	1.13	0.31	NConv	0.33	NConv	Add redundant battery
	P2-4A13-12: WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.59	NConv	NA	NA	Project: Wilson Area reinforcement project
ELNIDOBM 70kV	P5-SaA13-1: WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.59	NConv	NA	NA	Project: Wilson Area reinforcement project
	P5-ScA13-2: Wilson 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.46	0.55	1.10	0.60	NConv	0.59	NConv	Add redundant battery
EXCHEQUER 115kV	P5-ScA13-2: Wilson 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.82	0.87	1.03	0.98	NConv	0.98	NConv	Add redundant battery
EXCHEQUER 70kV	P5-ScA13-2: Wilson 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.77	0.82	1.00	0.92	NConv	0.92	NConv	Add redundant battery
FIGRDN 1 230kV	P5-ScA14-2: Gregg 230kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.91	0.83	1.05	1.06	1.08	1.00	1.06	1.00	0.92	Continue to monitor
FIGRDN 2 230kV	P5-ScA14-2: Gregg 230kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant Battery/Relay	0.93	0.90	0.83	1.05	1.06	1.08	1.00	1.06	1.00	0.92	Continue to monitor
FIREBAGH 70 kV	P1-1A13-62: CALRENEW 12.50KV GEN UNIT 1 & P1-3A13-38: MENDOTA 115/70KV TB 5	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.90	Continue to monitor

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJV area HI-EV sensitivity	
KEARNEY 230KV	P2-2A13:13_ EXCHEQR 115KV SECTION 1D	P2	Bus/Breaker Non-Redundant Battery/Relay	0.95	0.94	0.95	0.85	1.01	1.03	0.98	1.01	0.98	0.93	Off-peak only
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Bus/Breaker	NConv	NConv	NConv	0.64	0.81	0.99	0.91	NConv	0.91	NConv	Add redundant battery
	P2-4A14:1_ HERNDON 230KV - SECTION 1E & 2E	P2	Non-Redundant Battery/Relay	0.97	0.94	0.88	1.01	1.03	1.03	0.99	1.03	0.99	0.96	Continue to monitor
KINGSRIVERPH 115KV	P5-5cA14:2_ Gregg 230KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.92	0.85	1.03	1.04	1.06	1.00	1.04	1.00	0.96	Continue to monitor
	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.94	0.96	0.90	1.06	1.04	1.06	0.99	1.04	0.99	0.95	Continue to monitor
	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.94	0.89	1.05	1.02	1.06	0.97	1.02	0.97	0.94	Continue to monitor
LIVINGSTN 115KV	P2-4A13:12_ WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.31	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5aA13:1_ WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.31	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.42	0.41	1.13	0.32	NConv	0.32	NConv	Add redundant battery
MANCHSTR 115KV	P5-5cA14:2_ Gregg 230KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.88	1.06	1.08	1.09	1.02	1.08	1.02	0.96	Continue to monitor
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.77	0.82	1.00	0.92	NConv	0.92	NConv	Add redundant battery
	P2-4A13:12_ WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.84	NConv	NA	NA	Project:Wilson Area reinforcement project
MCSWAIN 70KV	P5-5aA13:1_ WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.84	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.68	0.76	1.03	0.85	NConv	0.84	NConv	Add redundant battery
	P2-4A13:12_ WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.84	NConv	NA	NA	Project:Wilson Area reinforcement project
MCSWAINJ 70KV	P2-4A13:12_ WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.33	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5aA13:1_ WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.34	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.43	0.41	1.12	0.34	NConv	0.34	NConv	Add redundant battery
MERCED 115KV	P2-4A13:12_ WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.58	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5aA13:1_ WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.58	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.46	0.53	1.10	0.58	NConv	0.58	NConv	Add redundant battery
MERCEDFALLS 70KV	P2-4A13:12_ WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.84	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5aA13:1_ WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NConv	NA	0.84	NConv	NA	NA	Project:Wilson Area reinforcement project
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.68	0.75	1.03	0.84	NConv	0.84	NConv	Add redundant battery
NRTHFORK 70KV	P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	0.98	0.99	0.78	1.03	1.01	1.05	1.01	1.01	1.01	0.54	Continue to monitor
	P5-5aA13:8_ Borden 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.80	NA	NA	1.05	NA	NA	NA	0.54	Continue to monitor
	P1-1A13:75_ CHWCHILLA1-25 25.00KV GEN UNIT V8 & P1-2A13:36_ LE GRAND-CHOWCHILLA 115KV [2110]	P3	N-1(G-1	>0.9	>0.9	0.89	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Continue to monitor
OAKHURST 115 KV	Base Case	P0	Base case	0.95	0.95	0.95	1.02	1.05	1.05	0.96	1.05	0.96	0.94	Continue to monitor
	P5-5cA14:14_ Gates 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.99	1.01	1.00	1.03	1.03	1.03	1.00	1.03	1.00	0.89	Sensitivity only
	P5-5cA14:10_ Mccall 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	1.00	0.99	NConv	1.04	1.04	1.04	1.03	1.04	1.01	0.89	Continue to monitor
ORTIGA 70 KV	P1-1A13:43_ VEGA 0.36KV GEN UNIT 1 & P1-2A13:69_ LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P3	N-1(G-1	0.86	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Project:Losbanos 70 kv area reinforcement project
	P1-1A13:46_ WRIGHT D 12.47KV GEN UNIT QF & P1-2A13:69_ LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P3	N-1(G-1	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Project:Losbanos 70 kv area reinforcement project
	P1-2A13:69_ LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P1	N-1	0.90	1.00	0.99	1.00	0.99	1.02	0.95	0.99	0.95	1.00	Project: Losbanos area reinforcement project
PARLIER 115KV	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.93	0.87	1.05	1.03	1.06	0.97	1.03	0.97	0.92	Continue to monitor
	P5-5cA14:10_ Mccall 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.91	NConv	1.06	1.05	1.06	0.98	1.05	0.96	0.88	Continue to monitor
	P5-5cA14:14_ Gates 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.99	1.01	1.00	1.03	1.03	1.03	1.00	1.03	1.00	0.89	Sensitivity only
PIEDRA 1 115KV	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.94	0.88	1.05	1.03	1.06	0.97	1.03	0.97	0.92	Continue to monitor
	P5-5cA14:10_ Mccall 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.96	0.92	NConv	1.06	1.05	1.06	0.99	1.05	0.96	0.88	Continue to monitor
	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.95	0.90	1.06	1.03	1.05	0.98	1.03	0.98	0.95	Continue to monitor
PNEDLE 115KV	P5-5cA14:2_ Gregg 230KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.94	0.84	1.07	1.08	1.10	1.01	1.08	1.01	0.94	Continue to monitor
	P2-2A14:47_ HERNDON 115KV SECTION 2D	P2	Bus/Breaker	0.96	0.95	0.91	1.06	1.03	1.06	0.98	1.03	0.98	0.89	Continue to monitor
	P2-3A14:66_ HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2	Bus/Breaker	0.96	0.95	0.91	1.06	1.03	1.06	0.98	1.03	0.98	0.89	Continue to monitor
RAINBW 115KV	P5-5cA14:2_ Gregg 230KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.95	0.94	0.85	1.07	1.08	1.10	1.01	1.08	1.01	0.94	Continue to monitor
	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.94	0.88	1.05	1.03	1.05	0.97	1.03	0.97	0.93	Continue to monitor
	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.91	0.93	0.85	1.05	1.04	1.07	0.96	1.04	0.96	0.90	Continue to monitor
REEDLEY 115KV	P5-5cA14:10_ Mccall 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.91	NConv	1.06	1.05	1.07	0.98	1.05	0.95	0.85	Continue to monitor
	P1-1A13:26_ TRNOBVRDSPV 0.55KV GEN UNIT 4 & P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1(G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.60	Continue to monitor
	P1-1A13:29_ LILBEAR4SPV 34.50KV GEN UNIT 1 & P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1(G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.60	Continue to monitor
RIVERROC 70 KV	P1-1A14:93_ FRIANTDAM 6.60KV GEN UNIT 2 & P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1(G-1	>0.9	>0.9	0.58	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.54	Continue to monitor
	P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	NA	NA	0.83	NA	NA	1.05	NA	NA	NA	0.60	Continue to monitor
	P5-5cA13:8_ Borden 230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.85	NA	NA	1.05	NA	NA	NA	0.60	Continue to monitor
SANDCRK 70KV	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.94	1.00	0.89	1.03	1.02	1.04	1.01	1.02	1.01	0.93	Continue to monitor
	P5-5cA14:10_ Mccall 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.98	0.97	NConv	1.03	1.03	1.04	1.02	1.03	0.99	0.88	Continue to monitor
	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.92	0.94	0.89	1.05	1.03	1.05	0.97	1.03	0.97	0.94	Continue to monitor
SANGER 115KV	P5-5aA14:3_ MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.93	0.94	0.89	1.05	1.03	1.05	0.97	1.03	0.97	0.94	Continue to monitor
	P2-2A13:13_ EXCHEQR 115KV SECTION 1D	P2	Bus/Breaker	0.96	0.94	0.96	0.89	1.02	1.04	0.98	1.02	0.98	0.94	Off-peak only
	P5-5cA13:2_ Wilson 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.69	0.82	1.00	0.91	NConv	0.91	NConv	Add redundant battery
SHARON 115 KV	P1-1A13:75_ CHWCHILLA1-25 25.00KV GEN UNIT V8 & P1-2A13:36_ LE GRAND-CHOWCHILLA 115KV [2110]	P3	N-1(G-1	>0.9	>0.9	0.88	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.88	Continue to monitor
	P1-1A13:26_ TRNOBVRDSPV 0.55KV GEN UNIT 4 & P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1(G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.55	Continue to monitor
	P1-1A14:93_ FRIANTDAM 6.60KV GEN UNIT 2 & P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1(G-1	>0.9	>0.9	0.53	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.49	Continue to monitor
SINO2 70 KV	P1-2A13:81_ BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	0.99	0.99	0.78	1.03	1.01	1.05	1.01	1.01	1.01	0.55	Continue to monitor
	P5-5cA13:8_ Borden 230-70KV													



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SIVLY area Hi-EV sensitivity	
STONCRRL 70kV	P5-5a:A14:3:_MCCall #1 & 2 115kV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.96	1.01	0.89	1.03	1.02	1.04	1.02	1.02	1.02	0.94	Continue to monitor
STONCRRL 70kV	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.99	0.98	NConv	1.03	1.03	1.04	1.03	1.03	1.00	0.88	Continue to monitor
TOMATAK 70 kV	P1-1:A13:62:_CALRENEW 12.50kV GEN UNIT 1 & P1-3:A13:38:_MENDOTA 115/70kV TB 5	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.90	Continue to monitor
TORNADO 70kV	P5-5c:A14:14:_Gates 230-70kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.98	1.00	0.99	1.02	1.03	1.03	0.99	1.03	0.99	0.88	Sensitivity only
TVY VILLY 70 kV	P1-1:A14:102:_KINGSBUR 13.80kV & SANGERCON 13.80kV & KINGSBUR 13.80kV & SANGERCON 13.80kV GEN UNITS & P1-2:A13:81:_BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.83	Continue to monitor
	P1-1:A14:93:_FRIANTDAM 6.60kV GEN UNIT 2 & P1-2:A13:81:_BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	0.82	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.80	Continue to monitor
	P1-1:A14:94:_FRIANTDAM 6.60kV GEN UNIT 3 & P1-2:A13:81:_BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P3	N-1/G-1	>0.9	>0.9	0.85	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.81	Continue to monitor
	P1-2:A13:81:_BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	1.04	1.02	0.93	1.03	1.04	1.04	1.06	1.03	1.06	0.83	Continue to monitor
	P5-5c:A13:8:_Borden 230-70kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.95	NA	NA	1.04	NA	NA	NA	0.84	Sensitivity only
WAHTOKE 115kV	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.94	0.90	NConv	1.06	1.05	1.07	0.97	1.05	0.95	0.84	Continue to monitor
WILSON 230kV	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	NA	NA	NA	NA	NConv	0.32	NConv	Add redundant battery
WILSON A 115kV	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	NA	NA	NA	NA	NConv	0.33	NConv	Add redundant battery
WILSON B 115kV	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	NA	NA	NA	NConv	0.33	NA	Project:Wilson Area reinforcement project
WILSONRCTR 230kV	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	NA	NA	NA	NA	NConv	0.32	NConv	Add redundant battery
WISHON 70kV	P1-2:A13:81:_BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	1.00	1.00	0.80	1.03	1.02	1.05	1.02	1.02	1.02	0.57	Continue to monitor
	P5-5c:A13:8:_Borden 230-70kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	NA	0.82	NA	NA	1.05	NA	NA	NA	0.57	Continue to monitor
WOODWARD 115kV	P5-5c:A14:2:_Gregg 230kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	0.97	0.96	0.89	1.06	1.08	1.09	1.02	1.08	1.02	0.96	Continue to monitor
WST FRSO 115kV	P5-5a:A14:3:_MCCALL #1 & 2 115kV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Battery/Relay	0.87	0.88	0.88	1.06	1.02	1.03	0.93	1.02	0.93	0.93	Add redundant relay
	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NA	0.87	NConv	1.06	NA	1.03	NA	NA	0.92	0.90	Add redundant battery
YOSEMITE 70 kV	P1-1:A13:51:_EXCHEQUER 13.80kV GEN UNIT 1 & P1-2:A13:1:_FINKSWSTA-WESTLEY #1 230kV [0]	P3	N-1/G-1	>0.9	>0.9	>0.9	0.90	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	Off-peak only
	P1-1:A13:53:_MCSWAIN 4.16kV GEN UNIT 1 & P1-2:A13:42:_EXCHEQUER-LE GRAND 115kV [1560]	P3	N-1/G-1	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	>0.9	0.87	Continue to monitor
	& P1-3:A13:31:_EXCHEQUER 70/115kV TB 1	P3	N-1/G-1	>0.9	>0.9	>0.9	0.83	>0.9	>0.9	>0.9	>0.9	>0.9	0.89	Off-peak only
	P2-2:A13:13:_EXCHEQUER 115kV SECTION 1D	P2	Bus/Breaker	0.95	0.93	0.95	0.85	1.01	1.03	0.98	1.01	0.98	0.92	Off-peak only
	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NConv	NConv	0.64	0.81	0.99	0.91	NConv	0.90	NConv	Add redundant battery

Substation	Contingency	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)						Post Cont. Voltage Deviation % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 S/VLY area Hi-EV sensitivity	
AUBERRY 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	19	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	40	Continue to monitor
AUBRYTP 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	18	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	40	Continue to monitor
CANAL 70 kV	P1-2-A13-69: LOS BANOS-LIVINGSTON JCT-CANAL 70kV [8940]	P1	N-1	9	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	NA	Project: Losbanos 70 kV area reinforcement project
CASSIDY 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	21	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	44	Continue to monitor
COPPRMNE 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	17	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	38	Continue to monitor
FRIANTDAM 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	15	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	36	Continue to monitor
NRTHFORK 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	19	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	41	Continue to monitor
RIVERROC 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	19	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	41	Continue to monitor
RVRRC T 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	19	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	41	Continue to monitor
SINO2 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	19	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	41	Continue to monitor
SINO3 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	19	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	41	Continue to monitor
TVV VLLY 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	19	Continue to monitor
WISHON 70 kV	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	18	<8%	<8%	<8%	<8%	<8%	<8%	NA	Continue to monitor
	P1-2-A13-81: BORDEN-COPPERMINE 70kV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	<8%	40	Continue to monitor

Contingency	Category	Category Description	Transient Stability Performance							Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios			
			2027 Spring Off-Peak	2030 Summer Peak	2035 Summer Peak	2035 Spring Off-Peak	2027 OP Sensitivity	2030 SP High CEC Forecast		
P1-2 - Line GREGG to HERNDON 230 kV ckt 1 with RAS	P1	N-1	No Issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	No Issues	Potential WECC/NERC criteria violation	No Issues	Working with PTO to obtain 1ph fault impedance data	
P1-4 - SVD GREGG 230 kV id v	P1	N-1	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Continue to monitor	
P2-3 - Internal fault at non-Bus-tie breaker Herndon 252 protecting Line GREGG to HERNDON 230 kV ckt 1 with RAS	P2	Bus/Breaker	No Issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	No Issues	Potential WECC/NERC criteria violation	No Issues	Working with PTO to obtain 1ph fault impedance data	
P2-4 - Internal fault at Bus-tie Breaker 202 at MC CALL 230 kV Bus D	P2	Bus/Breaker	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Continue to monitor	
P2-4 - Internal fault at Bus-tie Breaker 302 at MC CALL 230 kV Bus E	P2	Bus/Breaker	No Issues	No Issues	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	Sensitivity only	
P3-2 - Gen HELMS 1 18 kV unit 1 and Line GREGG to HERNDON 230 kV ckt 1 with RAS	P3	N-1/G-1	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Continue to monitor	
P3-2 - Gen KERCKHOFF 13.8 kV unit 1 and Line GREGG to HERNDON 230 kV ckt 1	P3	N-1/G-1	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	No Issues	No Issues	Limiting Helms generation	
P3-2 - Gen SUNRISEPR 18 kV (3 units) and Line GREGG to HERNDON 230 kV ckt 1 with RAS	P3	N-1/G-1	No Issues	No Issues	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	Sensitivity only	
P3-3 - Gen HELMS 1 18 kV unit 1 and Tran MC CALL 230/115 kV bk 1	P3	N-1/G-1	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Continue to monitor	
P3-4 - Gen HELMS 1 18 kV unit 1 and SVD GREGG 230 kV id v	P3	N-1/G-1	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Continue to monitor	
P4-1 - Stuck 115 kV Breaker 172 protecting Gen KERCKHOFF 13.8 kV unit 1	P4	Stuck Breaker	No Issues	No Issues	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	No Issues	Continue to monitor	
P5-5c - Failure of non-redundant DC battery supplying Borden 230kV and 70kV Buses	P5	Non-redundant battery	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Potential WECC/NERC criteria violation	Add redundant battery supply	
P7-1 - Fault on Line Midway*-Wheeler Ridge #1 230 kV ckt 1 and Line Midway*-Wheeler Ridge 230 kV ckt 2	P7	DCTL	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Continue to monitor	



Worst Contingency	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area Hi-EV sensitivity	

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



Substation	Load Served (MW)														Potential Mitigation Solutions
	2026 Summer Peak	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Winter Peak	2030 Winter Peak	2035 Winter Peak	2027 Spring Off-Peak	2030 Summer-Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SJVLY area Hi-EV sensitivity	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)						Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Spring Off Peak	2027 Spring Off Peak	2035 Spring Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SINVY area Hi-CV sensitivity			
Kern PP-Westpark #1 115kV line	P1-2-A15-39_KERN-WESTPARK #2 115KV [2010]+P1-2-A15-49_KERN-MAGUNDEN-WITCO 115KV [1970]	P6	N-1-1	<100	<100	107	<100	<100	<100	<100	<100	<100	151	Continue to Monitor		
Kern PP-Westpark #2 115kV line	P1-2-A15-39_KERN-WESTPARK #2 115KV [2010]+P1-2-A15-41_7TH STANDARD-KERN 115KV [1981]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	107	Sensitivity Only		
Kern PP-Westpark #3 115kV line	P1-2-A15-38_KERN-WESTPARK #1 115KV [2000]+P1-2-A15-49_KERN-MAGUNDEN-WITCO 115KV [1970]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	151	Continue to Monitor		
Gates-Midway 230kV line	P2-2-A15-10_MIDWAY-F 230KV Section 1F	P2	Bus/Breaker	3	67	59	30	25	145	106	7	13	103	Generation re-dispatch		
	P2-3-A15-16_MIDWAY-F - 1F 230KV & MIDWAY-F-MIDWAY-R13 #1 line	P2	Bus/Breaker	3	67	59	30	25	145	106	7	13	103	Generation re-dispatch		
	P2-4-A15-24_MIDWAY-E Section 1E & MIDWAY-F Section 1F 230KV	P2	Bus/Breaker	3	67	59	30	24	145	106	7	13	103	Generation re-dispatch		
	P2-4-A15-3_MIDWAY-F 230KV - Section 1F & 2F	P2	Bus/Breaker	3	67	59	30	25	145	106	7	13	104	Generation re-dispatch		
Midway-Kern #3 230kV line	P1-2-A15-52_Q1593SWSTA-MIDWAY-F #1 230KV [0]	P1	N-1	3	67	59	30	25	145	106	7	13	103	Generation re-dispatch		
	P2-4-A15-23_MIDWAY-D08B8 Section 2D & MIDWAY-E Section 2E 230KV	P2	Bus/Breaker	107	53	59	74	57	NA	103	54	109	NA	Sensitivity Only		
	P2-3-A15-12_MIDWAY-E - 1E 230KV & line	P2	Bus/Breaker	NA	100	100	12	NA	2	NA	NA	33	159	Midway-Lapalama RAS		
	P2-4-A15-21_MIDWAY-E Section 1E & MIDWAY-F Section 1F 230KV	P2	Bus/Breaker	NA	100	100	12	NA	2	NA	NA	34	160	Midway-Lapalama RAS		
Midway-Sunrise #2 230kV line	P2-4-A15-16_MIDWAY-D Section 1D & MIDWAY-E Section 1E 230KV	P2	Bus/Breaker	NA	100	100	NA	NA	NA	NA	NA	NA	159	Midway-Lapalama RAS		
	P2-4-A15-22_MIDWAY-E Section 2E & MIDWAY-F Section 2F 230KV	P2	Bus/Breaker	NA	NA	NConv	NA	NA	NA	NA	NA	NA	159	Midway-Lapalama RAS		
	P2-4-A15-24_MIDWAY-E Section 1E & MIDWAY-F Section 1F 230KV	P2	Bus/Breaker	NA	100	100	NA	NA	NA	NA	NA	NA	160	Midway-Lapalama RAS		
	P2-1-A15-140_BADGER HILL TAP 70KV [8452] [BDGR HLL-BDGRHL T]	P2	Bus/Breaker	NA	NA	156	NA	NA	NA	NA	NA	NA	NA	112	Sensitivity Only	
Semitropic-Famoso 115 kV Line	P2-2-A15-36_MIDWAY 115KV Section 2E	P2	Bus/Breaker	66	58	54	NA	NA	NA	NA	NA	NA	101	Project: NE Kern Reinforcement		
	P2-4-A15-11_MIDWAY 115KV - Section 2E & 1E	P2	Bus/Breaker	63	53	59	74	57	NA	103	54	109	NA	Project: NE Kern Reinforcement		
	P2-4-A15-7_MIDWAY 115KV - Section 2D & 2E	P2	Bus/Breaker	63	53	59	74	57	NA	103	54	109	NA	Project: NE Kern Reinforcement		
	P2-2-A15-36_MIDWAY 115KV Section 2E	P2	Bus/Breaker	NA	51	57	70	NA	1	NA	NA	102	NA	Project: NE Kern Reinforcement		
Cawelo-7th Standard	P2-4-A15-7_MIDWAY 115KV - Section 2D & 2E	P2	Bus/Breaker	NA	51	57	70	NA	1	NA	NA	102	NA	Project: NE Kern Reinforcement		
	P2-4-A15-9_MIDWAY 115KV - Section 2E & 1E	P2	Bus/Breaker	NA	51	57	70	NA	1	NA	NA	102	NA	Project: NE Kern Reinforcement		
	P2-3-A15-146_KERN PP 115KV - MIDDLE BREAKER BAY 8	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	100	Sensitivity Only		
	P2-2-A15-36_MIDWAY 115KV Section 2E	P2	Bus/Breaker	NA	66	68	54	NA	NA	NA	NA	NA	101	Project: NE Kern Reinforcement		
Kern-Kern Oil-Famoso 70 kV Line	P2-4-A15-7_MIDWAY 115KV - Section 2D & 2E	P2	Bus/Breaker	125.85	70.52	100.94	<100	<100	<100	<100	<100	<100	NA	Project: NE Kern Reinforcement		
	P2-4-A15-9_MIDWAY 115KV - Section 2E & 1E	P2	Bus/Breaker	NA	66	68	54	NA	NA	NA	NA	101	NA	Project: NE Kern Reinforcement		
	P1-1-A15-75_MT POSO 13.80KV Gen Unit 1+P1-2-A15-45_LERDO-KERN OIL-7TH STANDARD 115KV [1950]	P3	G-1/N-1	NA	NA	NA	103	NA	NA	NA	NA	NA	NA	Project: NE Kern Reinforcement		
	P2-2-A15-36_MIDWAY 115KV Section 2E	P2	Bus/Breaker	61	37	42	47	42	15	105	39	109	NA	Project: NE Kern Reinforcement		
Kern-Magunden-Witco 115kV line	P2-4-A15-7_MIDWAY 115KV - Section 2D & 2E	P2	Bus/Breaker	61	37	42	47	42	15	105	39	109	NA	Project: NE Kern Reinforcement		
	P2-4-A15-9_MIDWAY 115KV - Section 2E & 1E	P2	Bus/Breaker	61	37	42	47	42	15	105	39	109	NA	Project: NE Kern Reinforcement		
	P2-1-A15-59_COLUMBUS-BEAR TAP 115KV [0] NO FAULT	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	119	Sensitivity Only		
	P2-3-A15-36_WESTPARK - 1D 115KV & WESTPARK-COLUMBUS LINE	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	118	Sensitivity Only		
Kern-Magunden-Witco 115kV line	P2-1-A15-59_COLUMBUS-BEAR TAP 115KV [0] NO FAULT	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	114	Sensitivity Only		
	P2-3-A15-36_WESTPARK - 1D 115KV & WESTPARK-COLUMBUS LINE	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	113	Sensitivity Only		
	P2-3-A15-44_LIVEAKSISWSTA - 1D 115KV & LIVE OAK TAP LINE	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	107	Sensitivity Only		
	P2-1-A15-59_KERN-MAGUNDEN-WITCO 115KV [1970] [KRN OL-K-MAGUNDEN]	P2	Bus/Breaker	63	NA	NA	NA	NA	38	NA	38	NA	101	Sensitivity Only		
Kern Oil-Witco 115kV line	P2-3-A15-140_KERN PP 115KV - MIDDLE BREAKER BAY A	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	102	Sensitivity Only		
	P2-1-A15-50_KERN-MAGUNDEN-WITCO 115KV [1970] [KRN OL-K-MAGUNDEN]	P2	Bus/Breaker	75	NA	NA	NA	51	NA	50	51	NA	102	Sensitivity Only		
	P2-3-A15-149_KERN PP 115KV - MIDDLE BREAKER BAY A	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	103	Sensitivity Only		
	P2-3-A15-50_WITCO_JCT - 1D 115KV & KERN-MAGUNDEN-WITCO LINE	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	102	Sensitivity Only		
Kern Oil-Live Oak 115kV line	P1-2-A15-40_WESTPARK-COLUMBUS 115KV [0]	P1	N-1	72	82	92	51	43	7	41	43	46	119	Sensitivity Only		
	P2-2-A15-41_7TH STANDARD-KERN 115KV [1981]	P1	N-1	39	15	45	13	22	14	15	22	15	103	Sensitivity Only		
	P1-2-A15-49_KERN-MAGUNDEN-WITCO 115KV [1970]	P1	N-1	63	72	80	45	38	7	36	38	41	101	Sensitivity Only		
	P2-1-A15-7_Kern PP-Westpark No. 1 & 115 kV Lines	P2	DCTL	77	90	112	45	32	16	27	32	31	NA	Continue to monitor		
Kern PP-7th Standard 115kV line	P1-2-A15-38_KERN-WESTPARK #1 115KV [2000]+P1-2-A15-39_KERN-WESTPARK #2 115KV [2010]	P6	N-1-1	<100	<100	112	<100	<100	<100	<100	<100	<100	165	Continue to Monitor		
	P1-2-A15-48_KERN OIL-LIVEAKSISWSTA-POSO MT 115KV [0] MOAS OPENED ON CRCKERNTPTI, POSO MT+P1-2-A15-49_KERN-MAGUNDEN-WITCO 115KV [1970]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	133	Sensitivity Only		
	P1-2-A15-41_7TH STANDARD-KERN 115KV [1981]+P1-2-A15-51_KERN-LIVE OAK 115KV [1960]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	131	Sensitivity Only		
	P1-2-A15-41_7TH STANDARD-KERN 115KV [1981]+P1-2-A15-49_KERN-MAGUNDEN-WITCO 115KV [1970]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	116	Sensitivity Only		
Kern Oil-Kern Water 115kV	P1-2-A15-118_WHEELER-CASALOMA #1 230KV [0]+P1-2-A15-40_WESTPARK-COLUMBUS 115KV [0]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	116	Sensitivity Only		
	P1-2-A15-30_MIDWAY-WHEELER RIDGE #1 230KV [5190]+P1-2-A15-111_BITTERWATSS-MIDWAY-D 230KV [0]	P6	N-1-1	<100	336	<100	<100	<100	<100	<100	<100	<100	246	<100	Summer Setup	
	P1-2-A15-7_BITTERWATSS-WHEELER 230KV [0]+P1-2-A15-30_MIDWAY-WHEELER RIDGE #1 230KV [5190]	P6	N-1-1	<100	<100	<100	309	<100	<100	<100	<100	NConv	<100	Summer Setup		
	P1-2-A15-118_WHEELER-CASALOMA #1 230KV [0]+P1-2-A15-111_BITTERWATSS-MIDWAY-D 230KV [0]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Summer Setup		
Midway-Tupman-Rio Bravo-Renfro 115kV line	P1-1-A15-16_MIDWAY-WHEELER RIDGE #1 & #2 230 KV LINES	P7	DCTL	279	20	2	305	234	19	367	167	NConv	NA	Summer Setup		
	P2-4-A15-59_MIDWAY 115KV - Section 2E & 1E	P2	Bus/Breaker	107	180.74	176.58	129	58	5	123.18	62	202	NA	Under Review		
	P2-1-A15-89_MIDWAY-RENFRO-TUPMAN 115KV [2590] [MIDWAY-TPMPTP1]	P2	Bus/Breaker	51	NA	74	NA	25	7	19	25	NA	128	Sensitivity Only		
	P7-1-A15-14_CALENTE SW STA - MIDWAY #1 & #2 230 KV LINES	P7	DCTL	27	14	12	79	54	105	41	57	21	NA	Generation re-dispatch		
Midway 230/115kV TB #2	P1-2-A15-56_MIDWAY-RENFRO-TUPMAN 115KV [2590]+P1-2-A15-64_MIDWAY-SHAFTER 115KV [2610]	P6	N-1-1	141.83	146.71	<100	<100	<100	<100	<100	<100	<100	147	Sensitivity Only		
	P2-4-A15-10_MIDWAY 115KV - Section 1E & 1D	P2	Bus/Breaker	NA	46	47	20	NA	104	NA	NA	2	126	Sensitivity Only		
	P2-4-A15-139_MIDWAY-D 230KV - MIDDLE BREAKER BAY 3	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	124	Sensitivity Only		
	P2-4-A15-10_MIDWAY 115KV - Section 2D & 1D	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	NConv	Sensitivity Only		
Fellows-Taft 115kV line	P2-2-A15-35_MIDWAY 115KV Section 2D	P2	Bus/Breaker	36	39	16	84	47	26	102	47	102	NA	Sensitivity Only		
	P2-3-A15-64_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR-PUMPIACK line	P2	Bus/Breaker	36	39	NA	84	47	NA	102	47	102	NA	Sensitivity Only		
	P2-3-A15-65_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN line	P2	Bus/Breaker	36	39	NA	84	47	NA	102	47	102	NA	Sensitivity Only		
	P2-4-A15-7_MIDWAY 115KV - Section 2D & 2E	P2	Bus/Breaker	32	36	19	86	44	27	106	45	106	NA	Sensitivity Only		
Fellows-Midsun 115kV line	P1-2-A15-67_MIDWAY-TAFT 115KV [2620]	P1	N-1	35	38	17	83	46	27	103	47	103	51	Sensitivity Only		
	P2-2-A15-35_MIDWAY 115KV Section 2D	P2	Bus/Breaker	37	37	5	71	47	30	100	47	100	NA	Sensitivity Only		
	P2-3-A15-65_MIDWAY - 2D 115KV & MIDWAY-RENFRO-TUPMAN line	P2	Bus/Breaker	34	37	NA	71	47	NA	101	47	100	NA	Sensitivity Only		
	P2-3-A15-66_MIDWAY - 2D 115KV & MIDWAY-TEMBLOR-PUMPIACK line	P2	Bus/Breaker	34	37	NA	71	47	NA	101	47	100	NA	Sensitivity Only		
Kern Ridge-Temblor 115kV line	P2-4-A15-7_MIDWAY 115KV - Section 2D & 2E	P2	Bus/Breaker	31	35	5	73	45	30	104	45	104	NA	Sensitivity Only		
	P1-2-A15-67_MIDWAY-TAFT															



Overloaded Facility		Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
					2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off Peak	2035 Spring Off Peak	2027 SP Heavy Renewable & Min Gas Gen	2027 OP Sensitivity	2030 SP High CEC Forecast	2040 SINLY area Hi-EV sensitivity		
San Luis Obispo-Carrizo 115kV line	P2-1-A15-105_ MIDWAY-TEMBLOR 115kV [2630] (TEMBLOR-PSE MCKI)	P2	Bus/Breaker	20	NA	17	NA	8	26	118	8	NA	18	Generation re-dispatch		
	P2-1-A15-22_ MIDWAY-TEMBLOR 115kV [2630] (BELRIDGET-MIDWAY)	P2	Bus/Breaker	71	70	64	116	40	122	112	40	85	60	Generation re-dispatch		
	P2-1-A15-26_ MIDWAY-TEMBLOR 115kV [2630] (PSE MCKI-BELRIDGETCT)	P2	Bus/Breaker	70	NA	NA	NA	45	NA	120	46	NA	63	Generation re-dispatch		
	P2-2-A15-35_ MIDWAY 115kV Section 2D	P2	Bus/Breaker	NA	70	64	116	NA	122	NA	NA	85	NA	Generation re-dispatch		
	P2-3-A15-66_ MIDWAY - 2D 115kV & MIDWAY-TEMBLOR-PUMPIACK line	P2	Bus/Breaker	20	NA	NA	NA	8	NA	118	8	NA	NA	Generation re-dispatch		
	P2-3-A15-68_ MIDWAY - 2D 115kV & MIDWAY-RENFRO-TUPMAN line	P2	Bus/Breaker	NA	70	64	116	NA	122	NA	NA	85	NA	Generation re-dispatch		
	P2-4-A15-7_ MIDWAY 115kV - Section 2D & 2E	P2	Bus/Breaker	NA	70	64	116	NA	122	NA	NA	85	NA	Generation re-dispatch		
Temblor-San Luis Obispo 115kV line	P2-4-A15-8_ MIDWAY 115kV - Section 2D & 1D	P2	Bus/Breaker	71	70	64	116	40	122	113	40	85	NA	Generation re-dispatch		
	P1-2-A15-34_ MIDWAY-TEMBLOR-PUMPIACK 115kV [0]	P1	N-1	20	20	18	17	8	26	118	7	76	18	Sensitivity Only		
	P1-3-A15-121_ MIDWAY-D 230/115kV TB 1+P1-3-A15-122_ MIDWAY-D 230/115kV TB 2	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	126	Sensitivity Only		
	P1-3-A15-121_ MIDWAY-D 230/115kV TB 1+P1-3-A15-122_ MIDWAY-E 230/115kV TB 3	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	126	Sensitivity Only		
	P1-3-A15-8_ KERN PP 230/115kV TB 4+P1-3-A15-9_ KERN PP 230/115kV TB 5	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	137	Sensitivity Only		
	P1-3-A15-7_ KERN PP 230/115kV TB 3+P1-3-A15-8_ KERN PP 230/115kV TB 4	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	137	Sensitivity Only		
	P1-3-A15-7_ KERN PP 230/115kV TB 3+P1-3-A15-9_ KERN PP 230/115kV TB 5	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	137	Sensitivity Only		
Buena Vista-Midway #1 230kV line	Arco-Antelope 70kV line	P0	Base Case	71	76	77	59	64	52	64	64	69	101	Sensitivity Only		
	P2-1-A15-11_ MIDWAY-WHEELER RIDGE #2 230kV [5200] (BUENAVI2-MIDWAY-DBAAH)	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Project: Wheeler Ridge Junction		
	P2-1-A15-2_ BUENAVI2-BITTERWATRSS 230kV [0] No Fault	P2	Bus/Breaker	NA	64	NA	41	NA	NA	NA	NA	14	NA	Project: Wheeler Ridge Junction		
	P2-3-A15-24_ MIDWAY-DBAAH 230kV - Middle Breaker Bay 6	P2	Bus/Breaker	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Project: Wheeler Ridge Junction		
	P2-1-A15-11_ MIDWAY-WHEELER RIDGE #2 230kV [5200] (BUENAVI2-MIDWAY-DBAAH)	P2	Bus/Breaker	108	NA	NA	NA	111	NA	53	102	NA	NA	Project: Wheeler Ridge Junction		
	P2-1-A15-2_ BUENAVI2-BITTERWATRSS 230kV [0] No Fault	P2	Bus/Breaker	99	NA	NA	NA	101	NA	44	92	NA	NA	Project: Wheeler Ridge Junction		
	P2-3-A15-24_ MIDWAY-DBAAH 230kV - Middle Breaker Bay 6	P2	Bus/Breaker	100	NA	NA	NA	101	NA	45	93	NA	NA	Project: Wheeler Ridge Junction		
Buena Vista - Midway #2 230kV line	P2-1-A15-11_ MIDWAY-WHEELER RIDGE #2 230kV [5200] (BUENAVI2-MIDWAY-DBAAH)	P2	Bus/Breaker	99	NA	NA	NA	101	NA	44	92	NA	NA	Project: Wheeler Ridge Junction		
	P1-2-A15-118_ WHEELER-CASALOMA #1 230kV [0]+P1-2-A15-111_ BITTERWATRSS-MIDWAY-D 230kV [0]	P6	N-1-1	<100	<100	<100	<100	<100	151	<100	<100	<100	<100	Sensitivity Only		
	P2-2-A15-23_ MIDWAY-DOBBS Section 2D & MIDWAY-E Section 2E 230kV	P2	Bus/Breaker	117	NA	NA	NA	51	NA	59	40	NA	NA	Project: Wheeler Ridge Junction		
	P1-2-A15-118_ WHEELER-CASALOMA #1 230kV [0]+P1-2-A15-30_ MIDWAY-WHEELER RIDGE #1 230kV [5190]	P6	N-1-1	<100	<100	<100	<100	<100	107	<100	<100	<100	<100	Sensitivity Only		
	P2-1-A15-10_ MIDWAY-WHEELER RIDGE #1 230kV [5190] (BUENAVI1-MIDWAY-DBAAH)	P2	Bus/Breaker	109	NA	NA	NA	111	NA	58	103	NA	NA	Project: Wheeler Ridge Junction		
	P1-2-A15-30_ MIDWAY-WHEELER RIDGE #1 230kV [5190]+P1-2-A15-118_ WHEELER-CASALOMA #1 230kV [0]	P6	N-1-1	<100	<100	<100	<100	107	<100	48	92	<100	<100	Project: Wheeler Ridge Junction		
	P1-2-A15-111_ BITTERWATRSS-MIDWAY-D 230kV [0]+P1-2-A15-118_ WHEELER-CASALOMA #1 230kV [0]	P6	N-1-1	<100	<100	<100	<100	140	<100	<100	<100	<100	<100	Project: Wheeler Ridge Junction		
Midway-Gates 230kV line	P5-5C[DC]A15-7_ MIDWAY 230-115kV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant Battery/Relay	NConv	NA	NA	NA	13	NA	NConv	16	NA	NA	Project:Midway 230-115 battery project		
	Base Case	P0	Base Case	12	41	37	40	60	100	46	45	17	81	Generation re-dispatch		

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Bus/Substation	Area	Division	Voltage PU (Base Scenarios)				Voltage PU (Sensitivity Scenarios)	Project & Potential Mitigation Solutions
			2027 Spring Off-Peak	2030 Summer Off-Peak	2035 Winter Off-Peak	2035 Spring Off-Peak	2027 OP Heavy Renewable & Min Gas Gen	
LAURELES 60.0 kV	Central Coast/Los Padres	Central Coast	0.9784	0.9177	0.9918	1.0072	0.9759	System adjustments or voltage support if needed
DAVIDE 70.0 kV	Central Coast/Los Padres	Los Padres	1.0544	1.0279	1.0451	1.0455	1.0546	System adjustments or voltage support if needed
BRIGHTN 115.0 kV	Central Valley	Sacramento	1.0269	1.0166	1.0765	1.0741	1.0269	System adjustments or voltage support if needed
DAVIS 115.0 kV	Central Valley	Sacramento	1.0193	1.0272	1.0615	1.0618	1.0194	System adjustments or voltage support if needed
GRAND IS 115.0 kV	Central Valley	Sacramento	1.0251	1.0175	1.0774	1.0752	1.0251	System adjustments or voltage support if needed
W.SCRMNO 115.0 kV	Central Valley	Sacramento	1.0217	1.0256	1.0653	1.0649	1.0218	System adjustments or voltage support if needed
WOODLD 115.0 kV	Central Valley	Sacramento	1.0246	1.0327	1.0522	1.0551	1.0247	System adjustments or voltage support if needed
APPLE HL 115.0 kV	Central Valley	Sierra	1.0505	1.0464	1.0535	1.0532	1.0504	System adjustments or voltage support if needed
ATLANTIC 115.0 kV	Central Valley	Sierra	1.0517	1.039	1.0482	1.0505	1.0517	System adjustments or voltage support if needed
BELL PGE 115.0 kV	Central Valley	Sierra	1.035	1.0481	1.0523	1.0512	1.0349	System adjustments or voltage support if needed
BOGUE 115.0 kV	Central Valley	Sierra	1.0448	1.0471	1.0492	1.0562	1.0448	System adjustments or voltage support if needed
DRUMPH1 115.0 kV	Central Valley	Sierra	1.0553	1.0554	1.0576	1.0633	1.0553	System adjustments or voltage support if needed
E.MRYSVE 115.0 kV	Central Valley	Sierra	1.0479	1.0448	1.0565	1.0662	1.0479	System adjustments or voltage support if needed
ELDORAD 115.0 kV	Central Valley	Sierra	1.0521	1.0482	1.0543	1.0527	1.052	System adjustments or voltage support if needed
HIGGINS 115.0 kV	Central Valley	Sierra	1.0407	1.0502	1.0537	1.0553	1.0406	System adjustments or voltage support if needed
HORSESHE 115.0 kV	Central Valley	Sierra	1.04	1.0445	1.0505	1.0478	1.0399	System adjustments or voltage support if needed
PLACER 115.0 kV	Central Valley	Sierra	1.0333	1.0472	1.0516	1.0498	1.0333	System adjustments or voltage support if needed
PLSNT GR 115.0 kV	Central Valley	Sierra	1.0495	1.0403	1.0482	1.0509	1.0495	System adjustments or voltage support if needed
BELLOTA 115.0 kV	Central Valley	Stockton	1.0455	1.0073	1.0473	1.0514	1.0459	System adjustments or voltage support if needed
CLAY 60.0 kV	Central Valley	Stockton	1.0467	1.0346	1.0454	1.0532	1.0466	System adjustments or voltage support if needed
CNTRY CB 60.0 kV	Central Valley	Stockton	1.0412	1.0506	1.0511	1.0481	1.0405	System adjustments or voltage support if needed
FROGTOWN 115.0 kV	Central Valley	Stockton	1.0512	1.0395	1.0415	1.0427	1.0495	System adjustments or voltage support if needed
HAMMER 60.0 kV	Central Valley	Stockton	1.041	1.0507	1.0518	1.0492	1.0403	System adjustments or voltage support if needed
HERDLYN 60.0 kV	Central Valley	Stockton	1.1078	1.0387	1.0539	1.059	1.1097	System adjustments or voltage support if needed
LOCKFORD 115.0 kV	Central Valley	Stockton	1.0464	1.0093	1.0496	1.0537	1.0465	System adjustments or voltage support if needed
MSHR 60V 60.0 kV	Central Valley	Stockton	1.041	1.0463	1.0507	1.0491	1.0403	System adjustments or voltage support if needed
STANISLAUSPH 115.0 kV	Central Valley	Stockton	1.0503	1.045	1.0425	1.0434	1.0485	System adjustments or voltage support if needed
STKTON A 115.0 kV	Central Valley	Stockton	1.0481	1.0062	1.0486	1.0533	1.0484	System adjustments or voltage support if needed
TESLA 115.0 kV	Central Valley	Stockton	1.0456	1.032	1.0507	1.0545	1.0457	System adjustments or voltage support if needed
VILY SPS 60.0 kV	Central Valley	Stockton	1.0424	1.0431	1.0526	1.0467	1.0422	System adjustments or voltage support if needed
MNTA VSA 60.0 kV	Greater Bay Area	De Anza	1.0494	1.0535	1.0533	1.0459	1.0514	System adjustments or voltage support if needed
RIVBANK 115.0 kV	Greater Bay Area	missing	1.0566	1.0103	1.0179	1.047	1.0562	System adjustments or voltage support if needed
DUMBARTN 115.0 kV	Greater Bay Area	Mission	1.0378	1.0465	1.0474	1.051	1.0388	System adjustments or voltage support if needed
EASTSHRE 115.0 kV	Greater Bay Area	Mission	1.0386	1.0506	1.0485	1.0494	1.0397	System adjustments or voltage support if needed
MT EDEN 115.0 kV	Greater Bay Area	Mission	1.0383	1.0506	1.0485	1.0495	1.0394	System adjustments or voltage support if needed
NEWARK D 115.0 kV	Greater Bay Area	Mission	1.0412	1.0399	1.0473	1.0553	1.042	System adjustments or voltage support if needed
AIRWAYS 115.0 kV	Greater Fresno Area	Fresno	1.0426	1.031	1.0416	1.0513	1.0421	System adjustments or voltage support if needed
BIOLA 70.0 kV	Greater Fresno Area	Fresno	1.0369	1.0526	1.0477	1.0489	1.0361	System adjustments or voltage support if needed
BULLARD 115.0 kV	Greater Fresno Area	Fresno	1.0305	1.0415	1.0375	1.0532	1.0301	System adjustments or voltage support if needed
CAL AVE 115.0 kV	Greater Fresno Area	Fresno	1.0578	1.0176	1.0422	1.0451	1.0571	System adjustments or voltage support if needed
CLOVIS-1 115.0 kV	Greater Fresno Area	Fresno	1.0535	1.0262	1.0472	1.0561	1.0533	System adjustments or voltage support if needed
COPPRMNE 70.0 kV	Greater Fresno Area	Fresno	1.0554	1.0202	1.0533	1.0705	1.055	System adjustments or voltage support if needed
CORCORAN 115.0 kV	Greater Fresno Area	Fresno	1.0565	1.0152	1.0467	1.0485	1.043	System adjustments or voltage support if needed
CORCORAN 70.0 kV	Greater Fresno Area	Fresno	1.0692	1.029	1.0586	1.0625	1.0564	System adjustments or voltage support if needed
EXCELSIORSS 115.0 kV	Greater Fresno Area	Fresno	1.0546	1.0406	1.056	1.0597	1.0544	System adjustments or voltage support if needed
GUERNEY 70.0 kV	Greater Fresno Area	Fresno	1.0516	1.07	1.0484	1.0497	1.0512	System adjustments or voltage support if needed
HENRIETTA 70.0 kV	Greater Fresno Area	Fresno	1.0431	1.0539	1.0351	1.0351	1.0428	System adjustments or voltage support if needed
KENTSWSTA 70.0 kV	Greater Fresno Area	Fresno	1.0433	1.0541	1.0362	1.0364	1.0429	System adjustments or voltage support if needed
KERCKH1 115.0 kV	Greater Fresno Area	Fresno	1.0515	1.0272	1.044	1.0552	1.0509	System adjustments or voltage support if needed
KERCKHOFFPH2 115.0 kV	Greater Fresno Area	Fresno	1.0515	1.0272	1.044	1.0552	1.0509	System adjustments or voltage support if needed
KINGSBURGD 115.0 kV	Greater Fresno Area	Fresno	1.0599	1.0189	1.0406	1.0451	1.0583	System adjustments or voltage support if needed
KINGLOBUS 70.0 kV	Greater Fresno Area	Fresno	1.114	0.9761	1.0833	1.0878	1.1123	System adjustments or voltage support if needed
LEMOORE 70.0 kV	Greater Fresno Area	Fresno	1.034	1.0527	1.0262	1.0328	1.0336	System adjustments or voltage support if needed
MALAGA 115.0 kV	Greater Fresno Area	Fresno	1.059	1.0145	1.0372	1.038	1.0585	System adjustments or voltage support if needed
MANCHSTR 115.0 kV	Greater Fresno Area	Fresno	1.0421	1.0263	1.0467	1.0583	1.0416	System adjustments or voltage support if needed
MC CALL 115.0 kV	Greater Fresno Area	Fresno	1.069	1.0173	1.0566	1.0612	1.0683	System adjustments or voltage support if needed
PNEDLE 115.0 kV	Greater Fresno Area	Fresno	1.0304	1.0408	1.0367	1.0523	1.03	System adjustments or voltage support if needed
REEDLEY 115.0 kV	Greater Fresno Area	Fresno	1.0652	1.0141	1.0586	1.0659	1.0646	System adjustments or voltage support if needed
SANGER 115.0 kV	Greater Fresno Area	Fresno	1.0593	1.0209	1.0503	1.0564	1.0587	System adjustments or voltage support if needed

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			Voltage PU (Base Scenarios)				Voltage PU (Sensitivity Scenarios)	
SCHINDLER 115.0 kV	Greater Fresno Area	Fresno	1.0543	1.0408	1.0563	1.0599	1.054	System adjustments or voltage support if needed
SHEPHERD 115.0 kV	Greater Fresno Area	Fresno	1.04	1.0322	1.0394	1.0519	1.0398	System adjustments or voltage support if needed
TVY VILLY 70.0 kV	Greater Fresno Area	Fresno	1.047	1.0211	1.0449	1.053	1.0465	System adjustments or voltage support if needed
WAHTOKE 115.0 kV	Greater Fresno Area	Fresno	1.0679	1.0168	1.0588	1.085	1.0673	System adjustments or voltage support if needed
WAUKENASWSTA 115.0 kV	Greater Fresno Area	Fresno	1.0571	1.0157	1.0462	1.0482	1.0446	System adjustments or voltage support if needed
WOODWARD 115.0 kV	Greater Fresno Area	Fresno	1.0386	1.0338	1.0379	1.0513	1.0384	System adjustments or voltage support if needed
WST FRSD 115.0 kV	Greater Fresno Area	Fresno	1.0574	1.0162	1.0348	1.0348	1.0568	System adjustments or voltage support if needed
ATWATER 115.0 kV	Greater Fresno Area	Yosemite	1.0482	1.0408	1.0362	1.0577	1.048	System adjustments or voltage support if needed
BORDEN 70.0 kV	Greater Fresno Area	Yosemite	1.0831	1.0072	1.0757	1.0929	1.0827	System adjustments or voltage support if needed
CRESSEY 115.0 kV	Greater Fresno Area	Yosemite	1.0477	1.0407	1.037	1.0588	1.0475	System adjustments or voltage support if needed
EL CAPTN 115.0 kV	Greater Fresno Area	Yosemite	1.0477	1.0404	1.0354	1.0568	1.0474	System adjustments or voltage support if needed
GALLO 115.0 kV	Greater Fresno Area	Yosemite	1.0476	1.0404	1.0368	1.0584	1.0474	System adjustments or voltage support if needed
GLASS 70.0 kV	Greater Fresno Area	Yosemite	1.0822	1.0077	1.0773	1.095	1.0818	System adjustments or voltage support if needed
HAMMONDS 115.0 kV	Greater Fresno Area	Yosemite	1.0526	1.0461	1.0499	1.0583	1.0522	System adjustments or voltage support if needed
LIVINGSTN 115.0 kV	Greater Fresno Area	Yosemite	1.0478	1.0407	1.0371	1.0585	1.0476	System adjustments or voltage support if needed
MADERA 70.0 kV	Greater Fresno Area	Yosemite	1.0835	1.009	1.0786	1.0963	1.0831	System adjustments or voltage support if needed
MERCED 115.0 kV	Greater Fresno Area	Yosemite	1.0485	1.0389	1.035	1.0557	1.0483	System adjustments or voltage support if needed
ORO LOMA 115.0 kV	Greater Fresno Area	Yosemite	1.056	1.0337	1.0461	1.055	1.0559	System adjustments or voltage support if needed
PANOCHEI 115.0 kV	Greater Fresno Area	Yosemite	1.0534	1.0531	1.052	1.0602	1.053	System adjustments or voltage support if needed
WILSONPAG 115.0 kV	Greater Fresno Area	Yosemite	1.0495	1.0391	1.0326	1.0534	1.0492	System adjustments or voltage support if needed
ARCATA 60.0 kV	Humboldt	Humboldt	1.0343	1.0362	1.0548	1.0501	1.0348	System adjustments or voltage support if needed
EUREKA 60.0 kV	Humboldt	Humboldt	1.0328	1.0344	1.0478	1.0502	1.0328	System adjustments or voltage support if needed
FAIRHAVN 60.0 kV	Humboldt	Humboldt	1.0345	1.0393	1.0611	1.0511	1.0357	System adjustments or voltage support if needed
HARRIS 60.0 kV	Humboldt	Humboldt	1.0347	1.0325	1.0544	1.0526	1.0349	System adjustments or voltage support if needed
HIMBOBAYPPA 60.0 kV	Humboldt	Humboldt	1.0362	1.0451	1.0456	1.05	1.0361	System adjustments or voltage support if needed
HUMBOLDT 60.0 kV	Humboldt	Humboldt	1.0359	1.0323	1.0547	1.0515	1.0361	System adjustments or voltage support if needed
JANS CRK 60.0 kV	Humboldt	Humboldt	1.0258	1.0308	1.0539	1.051	1.026	System adjustments or voltage support if needed
7STNDRD 115.0 kV	Kern	Kern	1.0481	1.046	1.045	1.0727	1.048	System adjustments or voltage support if needed
KERN OIL 115.0 kV	Kern	Kern	1.0451	1.044	1.0423	1.0704	1.0451	System adjustments or voltage support if needed
KERN PWR 115.0 kV	Kern	Kern	1.0536	NA	NA	NA	1.0535	System adjustments or voltage support if needed
LERDO 115.0 kV	Kern	Kern	1.0424	1.0388	1.04	1.0651	1.0424	System adjustments or voltage support if needed
LIVE OAK 115.0 kV	Kern	Kern	1.0469	1.043	1.0418	1.0699	1.0468	System adjustments or voltage support if needed
MAGUNDEN 115.0 kV	Kern	Kern	1.0387	1.0442	1.0396	1.0702	1.0386	System adjustments or voltage support if needed
STOCKOLE 115.0 kV	Kern	Kern	1.0501	1.0409	1.0474	1.0757	1.0501	System adjustments or voltage support if needed
TEVIS 115.0 kV	Kern	Kern	1.0511	1.0429	1.0482	1.0766	1.051	System adjustments or voltage support if needed
WESTPARK 115.0 kV	Kern	Kern	1.0516	1.0484	1.0474	1.0755	1.0515	System adjustments or voltage support if needed
WITCO_JCT 115.0 kV	Kern	Kern	1.0458	1.0446	1.0424	1.0711	1.0457	System adjustments or voltage support if needed
CARQUINZ 115.0 kV	North Coast/North Bay	North Bay	1.0556	1.0249	1.0575	1.0694	1.056	System adjustments or voltage support if needed
IGNACIO 115.0 kV	North Coast/North Bay	North Bay	1.0565	1.0398	1.0706	1.0679	1.0569	System adjustments or voltage support if needed
LS GLINS 115.0 kV	North Coast/North Bay	North Bay	1.056	1.0404	1.0708	1.0681	1.0564	System adjustments or voltage support if needed
SAN RAFL 115.0 kV	North Coast/North Bay	North Bay	1.055	1.0408	1.071	1.0681	1.0554	System adjustments or voltage support if needed
SILVERDO 115.0 kV	North Coast/North Bay	North Bay	1.0461	1.0497	1.0613	1.0621	1.0454	System adjustments or voltage support if needed
FULTON 115.0 kV	North Coast/North Bay	North Coast	1.0532	1.0457	1.0626	1.0605	1.0535	System adjustments or voltage support if needed
FULTON 60.0 kV	North Coast/North Bay	North Coast	1.0421	1.0453	1.0502	1.0484	1.0424	System adjustments or voltage support if needed
SNTA RSA 115.0 kV	North Coast/North Bay	North Coast	1.0362	1.0394	1.055	1.0532	1.0366	System adjustments or voltage support if needed
BUTTE 115.0 kV	North Valley	North Valley	1.0481	1.0442	1.0472	1.0527	1.0478	System adjustments or voltage support if needed
CASCADE 115.0 kV	North Valley	North Valley	1.0649	1.0386	1.048	1.0337	1.0651	System adjustments or voltage support if needed
COTWDRGE 115.0 kV	North Valley	North Valley	1.0634	NA	NA	NA	1.0635	System adjustments or voltage support if needed
JESSUP 115.0 kV	North Valley	North Valley	1.0615	1.0351	1.0432	1.0357	1.0616	System adjustments or voltage support if needed
NORD 115.0 kV	North Valley	North Valley	1.0473	1.0457	1.0489	1.0544	1.047	System adjustments or voltage support if needed
NOTRDAME 115.0 kV	North Valley	North Valley	1.0478	1.0445	1.0475	1.0529	1.0475	System adjustments or voltage support if needed
ORLAND B 60.0 kV	North Valley	North Valley	1.0477	1.0499	1.0524	1.0502	1.0479	System adjustments or voltage support if needed
PALERMO 115.0 kV	North Valley	North Valley	1.057	1.0548	1.0529	1.0641	1.0569	System adjustments or voltage support if needed
PARADSE 115.0 kV	North Valley	North Valley	1.0498	1.0446	1.0473	1.0527	1.0495	System adjustments or voltage support if needed
SYCAMORE 115.0 kV	North Valley	North Valley	1.0469	1.0456	1.0489	1.0542	1.0466	System adjustments or voltage support if needed
WYANDTTE 115.0 kV	North Valley	North Valley	1.056	1.0557	1.0539	1.0648	1.0559	System adjustments or voltage support if needed

Overloaded Facility		Contingency (All and Worst P6)		Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
						B1 2027-SmP6	B2 2030-SmP6	B3 2035-SmP6	B5 2030-SmOP	B7 2027-SprOP	B8 2035-SprOP	S1 2030-SmP6_HLO AD	S2 2027-SmP6_Hren enable	S3 2027-SprOP_BES S		
19020 BLYTHE	161 24017 BLYTHESC	161 1 1	EST_P1_line_55_Line JHNDMMMD 230.0 to EAGLEMTN 230.0 Circuit 1 AND_EST_P1_line_6_CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE	P6	N-1-1	< 100	NotConv	133.8	< 100	< 100	< 100	NotConv	< 100	< 100	System adjustments after the first contingency	
19041 PARKER	161 19046 BOUSE	161 1 1	EST_P1_line_43_Line N.GILA 500.0 to HDWISH 500.0 Circuit 1 AND_EST_P1_line_A1_Line HASSYAMP 500.0 to N.GILA 500.0 Circuit 1	P6	N-1-1	106.6	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	< 100	Congestion management on 500kV North Gila area system due to high flows	
21072 YUCCA161	161 21059 PILOT_KNB161	161 1 1	EST_P1_line_43_Line N.GILA 500.0 to HDWISH 500.0 Circuit 1 AND_EST_P1_line_A1_Line HASSYAMP 500.0 to N.GILA 500.0 Circuit 1	P6	N-1-1	101.9	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	< 100		
21076 RAMON230	230 24806 MIRAGE	230 1 1	EST_P1_line_82_Line RAMON230 230.0 to DEVERS 230.0 Circuit 1 AND_EST_P1_line_84_Line RAMON230 230.0 to MIRAGE 230.0 Circuit 2	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	109.3	< 100	< 100	< 100	Path 42 RAS	
21279 CYSUB82	92.0 21808 CYSUB161	161 1 1	EST_P1_line_73_Line RAMON230 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_72_Line CYSUB230 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	123.5	< 100	< 100	< 100	132.3	< 100	< 100	123.8	NotConv		
21319 DIXELAN	92.0 21974 RTP1SPSTN	92.0 1 1	EST_P1_line_A3_Line N.GILA 500.0 to HDWISH 500.0 Circuit 1 AND_EST_P1_line_A1_Line HASSYAMP 500.0 to N.GILA 500.0 Circuit 1	P6	N-1-1	115.3	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	Congestion management on 500kV North Gila area system due to high flows	
	21319 DIXELAN	92.0 21974 RTP1SPSTN	92.0 1 1	EST_P1_line_9_Line SERRANO 500.0 to VALLEYSC 500.0 Circuit 1 AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P6	N-1-1	109.1	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
EST_P1_line_72_Line CYSUB230 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_73_Line RAMON230 230.0 to MIRAGE 230.0 Circuit 1				P6	N-1-1	164.8	< 100	< 100	< 100	128.1	< 100	< 100	163.5	NotConv	Path 42 RAS	
21376 RTP2FLP	92.0 21974 RTP1SPSTN	92.0 1 1	EST_P1_line_14_Line DEVERS 500.0 to VALLEYSC 500.0 Circuit 1 AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P6	N-1-1	103.5	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	Congestion management on 500kV North Gila area system due to high flows		
			EST_P1_line_15_Line DEVERS 500.0 to VALLEYSC 500.0 Circuit 2 AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P6	N-1-1	103.5	< 100	< 100	< 100	< 100	< 100	< 100	NotConv		< 100	
21378 RTP2FLP	92.0 21974 RTP1SPSTN	92.0 1 1	EST_P1_line_9_Line SERRANO 500.0 to VALLEYSC 500.0 Circuit 1 AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P6	N-1-1	111.0	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	Congestion management on 500kV North Gila area system due to high flows	
			EST_P1_line_A3_Line N.GILA 500.0 to HDWISH 500.0 Circuit 1 AND_EST_P1_line_A1_Line HASSYAMP 500.0 to N.GILA 500.0 Circuit 1	P6	N-1-1	117.2	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100		
21377 ANZA	92.0 21378 SALTON_CITY	92.0 1 1	EST_P1_line_72_Line CYSUB230 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_73_Line RAMON230 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	166.7	< 100	< 100	< 100	129.3	< 100	< 100	165.5	NotConv	Path 42 RAS	
			EST_P1_line_19_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	N-1-1	< 100	110.5	< 100	NotConv	< 100	< 100	111.2	< 100	< 100	System adjustments after the first contingency	
21378 SALTON_CITY	92.0 21379 DSERT_SHORES	92.0 1 1	EST_P1_line_20_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND_EST_P1_line_19_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P6	N-1-1	< 100	110.5	< 100	NotConv	< 100	< 100	111.2	< 100	< 100		
			EST_P1_line_19_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	N-1-1	< 100	106.9	< 100	NotConv	< 100	< 100	107.6	< 100	< 100		
21378 SALTON_CITY	92.0 21379 DSERT_SHORES	92.0 1 1	EST_P1_line_20_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND_EST_P1_line_19_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P6	N-1-1	< 100	106.9	< 100	NotConv	< 100	< 100	107.6	< 100	< 100		
			EST_P1_line_19_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	N-1-1	< 100	106.9	< 100	NotConv	< 100	< 100	107.6	< 100	< 100		
24084 LITEHPE	230 24091 MESA CAL	230 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	< 100	< 100	< 100	< 100	111.3	< 100	Congestion Management	
24801 DEVERS	500 29252 DVRS_RB_11	500 1 1	EST_P1_line_17_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND_EST_P1_line_70_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6	N-1-1	123.5	< 100	< 100	< 100	< 100	< 100	< 100	179.4	< 100	System adjustments after the first contingency / Reduce high renewable generation output	
			EST_P1_line_17_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P6	N-1-1	128.1	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	IDC CRAS / Congestion management on 500kV North Gila area system due to high flows	
			EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_17_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P3	G-1N-1	111.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	WOOR CRAS	
			EST_P1_gen_02_Gen SENTINEL Block AND_EST_P1_line_17_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P3	G-1N-1	112.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
24801 DEVERS	500 29252 DVRS_RB_11	500 1 1	EST_P1_line_17_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P1	N-1	109.9	< 100	< 100	< 100	< 100	< 100	< 100	149.4	< 100	WOOR CRAS / Reduce High Renewable Generation Output	
			EST_P1_line_16_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P6	N-1-1	124.4	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	IDC CRAS / Congestion management on 500kV North Gila area system due to high flows	
24804 DEVERS	230 24806 MIRAGE	230 1 1	EST_P1_line_23_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 2 AND_EST_P1_line_82_Line RAMON230 230.0 to DEVERS 230.0 Circuit 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	103.4	< 100	< 100	< 100	Path 42 RAS	
25401 EAGLEMTN	230 25405 IRON MTN	230 1 1	EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	112.5	< 100	< 100	< 100	< 100	Byte Energy RAS (Generation Drop)	
			EST_P4_line_05_Julian Hinds- Mirage 230 KV Line & Mirage-Ramon 230 KV Line	P4	Stuck Breaker	< 100	< 100	< 100	< 100	113.2	< 100	< 100	< 100	< 100		
			EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_2_Line BLYTHESC 161.0 to EAGLEMTN 161.0 Circuit 1	P6	N-1-1	119.8	< 100	< 100	< 100	NotConv	< 100	< 100	< 100	< 100		
			EST_P1_tran_85_Trans EAGLEMTN 161.00 to EAGLEMTN 230.00 Circuit SEMTN ST 12.00 AND_EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	119.8	< 100	< 100	< 100	NotConv	< 100	< 100	< 100	< 100		
25405 IRON MTN	230 24019 CAMINO	230 1 1	EST_P1_line_19_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 2	P7	DCTL	< 100	< 100	< 100	< 100	111.8	< 100	< 100	< 100	< 100		
			EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	112.0	< 100	< 100	< 100	< 100		
			EST_P4_line_05_Julian Hinds- Mirage 230 KV Line & Mirage-Ramon 230 KV Line	P4	Stuck Breaker	< 100	< 100	< 100	< 100	112.6	< 100	< 100	< 100	< 100		
			EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_2_Line BLYTHESC 161.0 to EAGLEMTN 161.0 Circuit 1	P6	N-1-1	110.0	< 100	< 100	< 100	NotConv	< 100	< 100	< 100	< 100		
25406 J.HINDS	230 24806 MIRAGE	230 1 1	EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_tran_85_Trans EAGLEMTN 161.00 to EAGLEMTN 230.00 Circuit SEMTN ST 12.00	P6	N-1-1	110.0	< 100	< 100	< 100	NotConv	< 100	< 100	< 100	< 100		
			EST_P1_line_19_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 2	P7	DCTL	< 100	< 100	< 100	< 100	111.5	< 100	< 100	< 100	< 100		
			EST_P1_line_88_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1 AND_EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	< 100	< 100	< 100	< 100	NotConv	< 100	< 100	108.9	< 100	Byte Energy RAS (Generation Drop) / Reduce High Renewable Generation Output	
			EST_P1_line_43_Line EAGLEMTN 230.0 to IRON MTN 230.0 Circuit 1 AND_EST_P1_tran_85_Trans EAGLEMTN 161.00 to EAGLEMTN 230.00 Circuit SEMTN ST 12.00	P6	N-1-1	< 100	< 100	< 100	< 100	136.5	< 100	< 100	< 100	< 100	< 100	
25406 J.HINDS	230 25401 EAGLEMTN	230 1 1	EST_P1_line_50_Line JHNDMMWD 230.0 to EAGLEMTN 230.0 Circuit 1	P1	N-1	137.2	< 100	< 100	< 100	137.6	< 100	< 100	< 100	< 100	Byte Energy RAS (Generation Drop)	
			EST_MWD_Line_5_Line JHNDMMWD - EAGLEMTN 230 KV	P2-1	Line Section w/o Fault	137.2	< 100	< 100	< 100	137.6	< 100	< 100	< 100	< 100		
			EST_MWD_Line_32_CBus-J.HndMMWD J.HndMMWD portion & EAGLEMTN-J.Hnd & Eagle Shunt Reactor	P2-2	Bus Section w/o Fault	137.2	< 100	< 100	< 100	137.6	< 100	< 100	< 100	< 100		
			EST_MWD_Line_34_CBus-EAGLEMTN J.HndEAGLEMTN sub and J.Hnd MWD portion & Eagle Shunt Reactor	P2-2	Bus Section w/o Fault	137.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
25432 GENE LX2	230 25404 GENE BK2	230 2 1	EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_3_CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE	P3	G-1N-1	< 100	< 100	< 100	< 100	108.5	< 100	< 100	< 100	< 100	Congestion Management	
25500 CALCITE	230 24086 LUGO	230 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	< 100	< 100	< 100	103.3	103.3	< 100	Congestion Management	
25512 JHNDMMWD	230 25401 EAGLEMTN	230 1 1	EST_P1_line_19_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	< 100	System adjustments after the first contingency	
			EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1 AND_EST_P1_line_54_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	< 100	< 100	153.0	< 100	< 100	< 100	< 100	< 100	< 100		
			EST_P1_line_54_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 100	< 100	146.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
25512 JHNDMMWD	230 25401 EAGLEMTN	230 1 1	EST_P1_line_49_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	178.1	< 100	< 100	< 100	< 100	System adjustments after the first contingency	
			EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_28_Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1	P3	G-1N-1	< 100	< 100	101.2	< 100	< 100	< 100	< 100	< 100	< 100		< 100

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				B1_2027-SmP6	B2_2030-SmP6	B3_2035-SmP6	B5_2030-SmOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmP6_HLO AD	S2_2027-SmP6_Hren enable	S3_2027-SprOP_BES S	
	EST_P4_line_05_Julien Hinds- Mirage 230 kV Line & Mirage-Ramon 230 kV Line	P4	Stuck Breaker	144.0	< 100	146.5	< 100	178.1	< 100	< 100	< 100	< 100	Bythe Energy RAS (Generation Drop)
	EST_P1_line_2_Line BLYTHESC 151.0 to ENGLEBTH 151.0 Circuit 1 AND_EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	149.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	EST_P1_line_19_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 2	P7	DCTL	106.9	< 100	< 100	< 100	162.1	< 100	< 100	< 100	< 100	
25512 JHINDMWD 230 25406 JHINDS 230 r1 1	EST_P1_line_54_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 100	< 100	141.1	< 100	< 100	< 100	< 100	< 100	< 100	
	EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	138.7	< 100	< 100	< 100	144.6	< 100	< 100	< 100	< 100	
	EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_27_Line ALBERHL 500.0 to SERRANO 500.0 Circuit 1	P3	G-1/N-1	< 100	< 100	100.7	< 100	< 100	< 100	< 100	< 100	< 100	
	EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_28_Line ALBERHL 500.0 to VALLEYSO 500.0 Circuit 1	P3	G-1/N-1	< 100	< 100	103.0	< 100	< 100	< 100	< 100	< 100	< 100	
	EST_P4_line_05_Julien Hinds- Mirage 230 kV Line & Mirage-Ramon 230 kV Line	P4	Stuck Breaker	138.7	< 100	141.1	< 100	144.6	< 100	< 100	< 100	< 100	
	EST_P1_line_19_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 1 AND_EST_P1_line_20_Line DEVERS 230.0 to MIRAGE 230.0 Circuit 2	P7	DCTL	107.6	< 100	< 100	< 100	131.6	< 100	< 100	< 100	< 100	
29255 DVRS_RB_22 500 24374 REDBLUFF 500 2 1	EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_16_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P3	G-1/N-1	108.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	WOCR CRAS
	EST_P1_gen_02_Gen SENTINEL Block AND_EST_P1_line_16_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P3	G-1/N-1	109.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
Colorado River 1AA or 2AA 500/230 kV	Colorado River 1AA or 2AA 500/230 kV	P1	N-1	123.0	163.8	163.4	153.4	< 100	< 100	163.6	160.0	< 100	
	EST_P1_line_1_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1 AND Colorado River 1AA or 2AA 500/230 kV	P6	N-1-1	< 100	164.9	< 100	156.8	< 100	< 100	165.6	< 100	< 100	
Devers 1AA 500/230 Kv	EST_P1_line_28_Line ALBERHL 500.0 to VALLEYSO 500.0 Circuit 1 AND_EST_P1_tran_85_Tran DEVERS 500.00 to DEVERS 230.00 Circuit 2 DEVERS2T 13.80	P6	N-1-1	< 100	119.6	< 100	157.0	< 100	< 100	118.1	< 100	< 100	System adjustments after the first contingency
Devers 1AA or 2AA 500/230 kV	Devers 1AA or 2AA 500/230 kV	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	111.4	< 100	Congestion Management
Failed to Converge in S2_2027-SmP6_HRenewable case	EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	Congestion management on 500kV North Gila area system due to high flows
	EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	
	EST_P1_gen_02_Gen SENTINEL Block AND_EST_P1_line_A4_Line N.GILA 500.0 to IMPRLVLY 500.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	
Red Bluff 1AA or 2AA 500/230 kV	Red Bluff 1AA or 2AA 500/230 kV	P1	N-1	< 100	129.9	133.1	156.5	< 100	< 100	129.7	152.6	< 100	WOCR CRAS
	Red Bluff 1AA or 2AA 500/230 kV AND_EST_P1_line_2_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1	P6	N-1-1	< 100	< 100	< 100	155.7	< 100	< 100	129.3	< 100	< 100	
	EST_P1_line_19_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND Red Bluff 1AA or 2AA 500/230 kV	P6	N-1-1	< 100	129.3	< 100	155.4	< 100	< 100	129.0	< 100	< 100	
Red Bluff 2AA 500/230 kV	EST_P4_line_06_Colorado River-Red Bluff No.2 500 kV & Red Bluff 500/220 kV 1AA Bank	P4	Stuck Breaker	< 100	129.9	132.9	156.3	< 100	< 100	129.6	152.3	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmP/k	B2_2030-SmP/k	B3_2035-SmP/k	B5_2030-SmOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmP/k_LOAD	S2_2027-SmP/k_Henawable	S3_2027-SprOP_BESS	
BLYTHESC 161 kV	_EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.89	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	Addition of reactive support recommended - First phase of SCE method of service study includes addition of reactive support on distribution side of Blythe substation.
EAGLEMTN 230 kV	_EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
EM LX1 230 kV	_EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Blythe Energy RAS (Generation Drop)
EM LX2 230 kV	_EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
JH LX2 230 kV	_EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	Close distribution capacitor at Eagle Mountain substation pre-contingency
JH LX1 230 kV	_EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP3 115 kV	_EST_P1_line_50_Line JHNDMWD 230.0 to EAGLEMTN 230.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	Per CAISO Procedure 3100B, post-contingency voltage operating range is 0.90-1.07 pu for SCE 115kV buses
BISHOP3 115 kV	_EST_P1_line_51_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
ALTWIND 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TIFFWIND 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BUCKWIND 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BLAST 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
HI DESERT 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
DEVERS 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
EISNOW 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BOTTLE 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BAWIND 115 kV	_EST_P1_tran_84_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 10EVERS1T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
ALTWIND 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TIFFWIND 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BUCKWIND 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BLAST 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
HI DESERT 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
DEVERS 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
EISNOW 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BOTTLE 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BAWIND 115 kV	_EST_P1_tran_85_Trans DEVERS 500.00 to DEVERS 230.0 Circuit 20EVERS2T 13.80	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP3 115 kV	EST_MMWD_Line_5_Line JHNDMWD - EAGLEMTN 230 kV	P2-1	Line Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	Close distribution capacitor at Eagle Mountain substation pre-contingency / Continue to monitor high voltage
JH LX1 230 kV	EST_MMWD_Line_31_CBus JHindsSCE J-Mirage GenTe-Buck Blvd Jh & Eagle Shunt Reactor	P2-2	Bus Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
JH LX2 230 kV	EST_MMWD_Line_31_CBus JHindsSCE J-Mirage GenTe-Buck Blvd Jh & Eagle Shunt Reactor	P2-2	Bus Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	1.05	
BISHOP3 115 kV	EST_MMWD_Line_32_CBus JHindsMWD JHndMWD portion & EagleMTN JHinds Jh & Eagle Shunt Reactor	P2-2	Bus Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP3 115 kV	EST_MMWD_Line_34_CBus05-EagleMTN loss EagleMTN sub and JHnd MWD portion Jh & Eagle Shunt Reactor	P2-2	Bus Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	Per CAISO Procedure 3100B, post-contingency voltage operating range is 0.90-1.07 pu for SCE 115kV buses
BLYTHESC 161 kV	EST_P1_gen_01_Gen MountainView Block AND_EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.89	0.88	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BLYTHESC 161 kV	EST_P1_gen_02_Gen SENTINEL Block AND_EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.9 < V < 1.05	Addition of reactive support recommended - First phase of SCE method of service study includes addition of reactive support on distribution side of Blythe substation
EAGLEMTN 230 kV	_EST_P4_line_05_Julian Hinds-Mirage 230 kV Line & Mirage-Ramon 230 kV Line	P4	Stuck Breaker	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
EM LX1 230 kV	_EST_P4_line_05_Julian Hinds-Mirage 230 kV Line & Mirage-Ramon 230 kV Line	P4	Stuck Breaker	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Blythe Energy RAS (Generation Drop)
EM LX2 230 kV	_EST_P4_line_05_Julian Hinds-Mirage 230 kV Line & Mirage-Ramon 230 kV Line	P4	Stuck Breaker	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
JH LX1 230 kV	EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1 AND_EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P6	N-1-1	0.9 < V < 1.05	0.59	0.59	0.65	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Addition of reactive support recommended - First phase of SCE method of service study includes addition of reactive support on distribution side of Blythe substation
BLYTHESC 161 kV	EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1 AND_EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	P6	N-1-1	0.9 < V < 1.05	0.61	0.63	0.66	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
JH LX1 230 kV	EST_P1_line_68_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1 AND_EST_P1_line_51_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P6	N-1-1	0.68	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.64	0.9 < V < 1.05	
JHNDMWD 230 kV	EST_P1_line_68_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1 AND_EST_P1_line_51_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P6	N-1-1	0.70	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.65	0.9 < V < 1.05	
BLYTHESC 161 kV	EST_P1_line_68_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1 AND_EST_P1_line_51_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P6	N-1-1	0.71	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.66	0.9 < V < 1.05	
EM LX1 230 kV	EST_P1_line_69_Line PARKER 230.0 to GENE 230.0 Circuit 1 AND_EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	Blythe Energy RAS (Generation drop) for 2027 Spring OP / System adjustments after the first contingency for 27 SP
EAGLEMTN 230 kV	EST_P1_line_69_Line PARKER 230.0 to GENE 230.0 Circuit 1 AND_EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P6	N-1-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	
EM LX2 230 kV	EST_P1_line_65_Line JHNDMWD 230.0 to EAGLEMTN 230.0 Circuit 1 AND_EST_P1_line_48_Line EAGLEMTN 230.0 to IRON MTN 230.0 Circuit 1	P6	N-1-1	0.9 < V < 1.05	0.69	0.78	0.69	0.9 < V < 1.05	0.85	0.67	0.9 < V < 1.05	0.9 < V < 1.05	OPT720F
EAGLEMTN 230 kV	EST_P1_line_65_Line JHNDMWD 230.0 to EAGLEMTN 230.0 Circuit 1 AND_EST_P1_line_48_Line EAGLEMTN 230.0 to IRON MTN 230.0 Circuit 1	P6	N-1-1	0.9 < V									

Overloaded Facility	Contingency (All and Worst PE)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)						Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmPfk	B2_2030-SmPfk	B3_2035-SmPfk	B5_2030-SmOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmPfk_HLOAD	S2_2027-SmPfk_Hrenewable	S3_2027-SprOP_BESS	
BLYTHESC 161 kV	.EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	P1	N-1	< 8	9.40	9.82	< 8	< 8	< 8	9.83	< 8	< 8	Blythe Energy RAS (Generation Drop)
EAGLEMTN 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	10.60	< 8	< 8	< 8	< 8	
EM LX1 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	10.60	< 8	< 8	< 8	< 8	
EM LX2 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	10.60	< 8	< 8	< 8	< 8	
IRON MTN 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	10.16	< 8	< 8	< 8	< 8	
JHINDS 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	9.03	< 8	< 8	< 8	< 8	
JH LX1 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	9.05	< 8	< 8	< 8	< 8	
JH LX2 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	9.05	< 8	< 8	< 8	< 8	
JHNDMWD 230 kV	.EST_P1_line_49_Line JHINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	N-1	< 8	< 8	< 8	< 8	9.05	< 8	< 8	< 8	< 8	
EAGLEMTN 230 kV	.EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	< 8	< 8	< 8	8.83	< 8	< 8	8.31	< 8	< 8	Close distribution capacitor at Eagle Mountain substation pre-contingency
EM LX1 230 kV	.EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	< 8	8.06	< 8	9.00	< 8	< 8	8.39	< 8	< 8	
EM LX2 230 kV	.EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	< 8	8.06	< 8	9.00	< 8	< 8	8.57	< 8	< 8	
JHNDMWD 230 kV	.EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	< 8	8.47	< 8	9.40	< 8	< 8	8.84	< 8	< 8	
JH LX1 230 kV	.EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	< 8	8.69	< 8	9.65	< 8	< 8	8.96	< 8	< 8	
JH LX2 230 kV	.EST_P1_line_56_Line JHNDMWD 230.0 to JHINDS 230.0 Circuit r1	P1	N-1	< 8	8.69	< 8	9.65	< 8	< 8	9.23	< 8	< 8	
BLYTHESC 161 kV	.EST_P1_gen_01_Gen MountainView Block AND .EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	P3	G-1/N-1	< 8	9.68	10.24	< 8	< 8	< 8	< 8	< 8	< 8	Addition of reactive support recommended - First phase of SCE method of service study includes addition of reactive support on distribution side of Blythe substation
BLYTHESC 161 kV	.EST_P1_gen_02_Gen SENTINEL Block AND .EST_P1_line_3_Line BLYTHE 161.0 to BLYTHESC 161.0 Circuit 1	P3	G-1/N-1	< 8	10.25	< 8	< 8	< 8	< 8	10.41	< 8	< 8	



Worst Contingency	Category	Category Description	Amount of Load Drop (MW)									Potential Mitigation Solutions
			B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLO AD	S2_2027-SmrPk_Hrenewable	S3_2027-SprOP_BESS	

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



Substation	Load Served (MW)									Potential Mitigation Solutions
	B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_Hrenewable	S3_2027-SprOP_BESS	

No single source substation with more than 100 MW

Overloaded Facility				Contingency (All and Worst P6)				Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
										B1_SCE_27 SP	B2_SCE_30 SP	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5_SCE_30 SmrOP	B6R: 2040 Winter Peak (w/o DMS)	B7_SCE_27 OP	B8R: 2035 Spring Off-Peak (w/o DMS)	S1_SCE_30 SP_HLOAD	S2_SCE_27 SP_HRenew	S3_SCE_27 OP_BES	
24042 ELDORDO	500	26048 MCCULLGH	500 1 1	P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	119.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Revise the Lugo-Victorville RAS along and rely on congestion management to address Eldorado-McCullough 500 kV tie overloads for P1, P2/P4, and P6 contingencies, while incorporating transmission projects to interconnect out-of-state wind resources as they are materialized.			
				GPI_24001_Gen Alamitos Repower AND P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P3	G-1/L-1	< 100	< 100	< 100	121.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P24L_M_P4_0022_Tran LUGO 500.0 to LUGO 230.0 Circuit 2 Line LUGO 500.0 to ELDORDO 500.0 Circuit 1	P2/P4	Internal Breaker Fault /stuck breaker	< 100	< 100	< 100	119.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24074_Line LUGO 500.0 to MOHAVE 500.0 Circuit 1 AND P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P6	overlapping singles	< 100	< 100	123.4	160.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24080_Line MOHAVE 500.0 to ELDORDO 500.0 Circuit 1 AND P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P6	overlapping singles	< 100	< 100	106.2	135.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1 AND P1L_24150_Line ELDORDO2 230.0 to SLOAN CANYON 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	122.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24220_Line MOENKOPI 500.0 to ELDORDO 500.0 Circuit 1 AND P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	122.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
24042 ELDORDO	500	29037 eldor 5i	13.8 5 1	P1L_24228_Line SLOAN_CYN_5 500.0 to ELDORDO 500.0 Circuit 1 AND P1L_GLWP01A_Line H ALLEN 500.0 to SLOAN_CYN_5 500.0 Ckt 1	P6	overlapping singles	< 100	< 100	< 100	117.3	< 100	< 100	< 100	< 100	< 100	< 100	Operation mitigation dropping generation in the NOL area after the first contingency				
24085 LUGO	230	29258 lugo 3i	A A3	P1T_24243_Tran LUGO 500.00 to LUGO 230.00 Circuit 1LUGO 1T 13.80 AND P1T_24244_Tran LUGO 500.00 to LUGO 230.00 Circuit 2LUGO 2T 13.80	P6	overlapping singles	< 100	119.4	162.3	121.8	118.8	< 100	< 100	126.7	126.3	< 100	< 100	Existing HDOP RAS & Mojave Desert RAS dropping generation in the NOL area			
25500 CALCITE	230	24085 LUGO	230 1 1	P1L_24068_Line LUGO 500.0 to VICTORVL 500.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.5	< 100	< 100	< 100	Rely on congestion management and Calcite cRAS to address the P1, P2/P4, P5, and P6 overloads as needed, as generation interconnections continue to materialize in the area.			
				P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1 A	P1	Single Contingency	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.6	< 100	< 100	< 100				
				P1L_24121By_Line PISGAH 230.0 to CALCITE 230.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.9	< 100	< 100	< 100				
				P1L_24122_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P1	Single Contingency	< 100	< 100	< 100	119.4	< 100	110.8	< 100	114.2	< 100	< 100	< 100				
				P24L_M_P4_0009_Line LUGO 230.0 to VICTOR 230.0 Circuit 2 Line LUGO 230.0 to PISGAH 230.0 Circuit 2	P2/P4	Internal Breaker Fault /stuck breaker	< 100	< 100	< 100	119.6	< 100	111.1	< 100	114.5	< 100	< 100	< 100				
				GPI_24007_Gen Huntington Beach Repower AND P1L_24122_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P3	G-1/L-1	< 100	< 100	101.2	121.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				PSL_TL_829_12_PS.2.13b Lugo-Pisgah No 2 230kV	P5	non-redundant component	< 100	< 100	< 100	119.4	< 100	110.8	< 100	114.2	< 100	< 100	< 100				
				P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1 AND P1L_24068_Line LUGO 500.0 to VICTORVL 500.0 Circuit 1	P6	overlapping singles	< 100	< 100	103.3	108.7	< 100	< 100	< 100	115.3	< 100	< 100	< 100				
				P1L_24128_Line ELDORDO 230.0 to CIMA-PISGAH1 230.0 Circuit 1 AND P1L_24122_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	< 100	135.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1 AND P1L_24122_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	109.2	129.6	< 100	< 100	< 100	123.3	< 100	< 100	< 100				
24219 PISGAH	230	24085 LUGO	230 2 1	P1L_24068_Line LUGO 500.0 to VICTORVL 500.0 Circuit 1 AND P1L_24122_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	105.8	127.0	< 100	< 100	< 100	121.7	< 100	< 100	< 100	The P1 and P6 overloads could be mitigated by existing RAS and operational mitigation actions, such as curtailing generation in the SCE Eastern and the DCR1 systems			
				P1L_24121Bx_Line CALCITE 230.0 to LUGO 230.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	108.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24121Bx_Line CALCITE 230.0 to LUGO 230.0 Circuit 1 AND P1L_2439_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	118.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24074_Line LUGO 500.0 to MOHAVE 500.0 Circuit 1 AND P1L_24121Bx_Line CALCITE 230.0 to LUGO 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	116.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24068_Line LUGO 500.0 to VICTORVL 500.0 Circuit 1 AND P1L_24121Bx_Line CALCITE 230.0 to LUGO 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	115.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24121Bx_Line CALCITE 230.0 to LUGO 230.0 Circuit 1 AND P1L_24128_Line ELDORDO 230.0 to CIMA-PISGAH1 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	128.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24121Bx_Line CALCITE 230.0 to LUGO 230.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.6	< 100	< 100	< 100				
				P24L_M_P4_0012b_Line LUGO 230.0 to CALCITE 230.0 Circuit 1 Line LUGO 230.0 to VICTOR 230.0 Circuit 3	P2/P4	Internal Breaker Fault /stuck breaker	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.8	< 100	< 100	< 100				
				P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P1	Single Contingency	110.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	148.6	< 100				
				P1L_241_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	overlapping singles	115.2	< 100	100.7	107.3	106.3	< 100	< 100	< 100	100.5	162.9	< 100				
24801 DEVERS	500	29252 DVRS_RB_11	500 1 1	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	overlapping singles	124.0	106.7	110.2	124.5	121.3	< 100	< 100	< 100	112.2	NotConv	< 100				
				P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_DCR101_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6	overlapping singles	129.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100					
				P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P1	Single Contingency	107.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	144.1	< 100				
				P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND P1L_DCR101_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6	overlapping singles	120.3	105.2	110.2	124.5	119.6	< 100	< 100	< 100	110.8	NotConv	< 100				
				P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1 AND P1L_SDGE10_22536 N.GILA-22360 IMPRVLVLY 500KV & 1	P6	overlapping singles	125.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100					
				P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P1	Single Contingency	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.4	< 100				
				GPI_24001_Gen Alamitos Repower AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P3	G-1/L-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.0	< 100				
29252 DVRS_RB_11	500	29253 DVRS_RB_12	500 1 1	P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_DCR101_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6	overlapping singles	< 100	103.7	108.2	122.3	118.0	< 100	< 100	< 100	109.1	NotConv	< 100				
				P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P1	Single Contingency	109.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	147.1	< 100				
				GPI_24001_Gen Alamitos Repower AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P3	G-1/L-1	111.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	152.0	< 100				
				P1L_24069_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 AND P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2	P6	overlapping singles	112.5	< 100	< 100	100.6	< 100	< 100	< 100	< 100	< 100	151.4	< 100				
				P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_DCR101_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6	overlapping singles	122.7	105.6	110.1	124.4	120.1	< 100	< 100	< 100	111.0	NotConv	< 100				
				P1L_24155_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 2 AND P1L_SDGE10_22536 N.GILA-22360 IMPRVLVLY 500KV & 1	P6	overlapping singles	127.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100					
				P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P1	Single Contingency	107.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	144.0	< 100				
				GPI_24010_Gen Mountainview Block 2 AND P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P3	G-1/L-1	109.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24069_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 AND P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P6	overlapping singles	110.4	< 100	< 100	100.6	< 100	< 100	< 100	< 100	< 100	148.1	< 100				
				P1L_241_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1 AND P1L_24154_Line DEVERS 500.0 to REDBLUFF 500.0 Circuit 1	P6	overlapping singles	111.8	< 100	100.6	107.2	105.0	< 100	< 100	< 100	< 100	157.3	< 100				
25401 EAGLEMTN	230	25405 IRON MTN	230 1 1	P1L_24180_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	Rely on congestion management curtailing generation in the Eastern or reducing import from IID, and along with the Blythe RAS, to eliminate the P1 and P2/P4 overloads, and the P6 overloads could also eliminated by system adjustments curtailing generation in the Eastern area and/or reducing import from IID after the 1st event of P6 contingency			
				P1L_24180_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1 AND P1L_SDGE40_Line IMPRVLVLY 500KV to NSONGS 500 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.6	< 100	< 100	< 100				
				P1L_24112x_Line ALBERHIL 500.0 to SERRANO 500.0 Circuit 1	P1	Single Contingency	< 100	< 100	102.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24112y_Line ALBERHIL 500.0 to VALLEYS 500.0 Circuit 1	P1	Single Contingency	< 100	100.2	105.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_24180_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	Single Contingency	102.1	159.4	159.6	< 100	< 100	145.0	165.9	164.7	159.3	< 100	166.0				
				P24L_M_P4_0051b_Line ALBERHIL 500.0 to SERRANO 500.0 Circuit 1 Tran SERRANO 500.0 to SERRANO_2 230.0 Circuit 3	P2/P4	Internal Breaker Fault /stuck breaker	< 100	< 100	102.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100				
				P1L_241_Line PALOVRDE 500.0 to COLRIVER 500.0 Circuit 1 AND P1L_DCR101_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P6	overlapping singles	< 100	NotConv	120.5	< 100	< 100	< 100	< 100	NotConv	< 100	< 100	< 100				
25512 JHINDMWD	230	25406 J.HINDS	230 r1 1	P1L_24180_Line J.HINDS 230.0 to MIRAGE 230.0 Circuit 1	P1	Single Contingency	< 100														

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)							Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				B1_SCE_27 SP	B2_SCE_30 SP	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5_SCE_30 SmrOP	B6R: 2040 Winter Peak (w/o DMS)	B7_SCE_27 OP	B8R: 2035 Spring Off-Peak (w/o DMS)	S1_SCE_30 SP_HLOAD	S2_SCE_27 SP_HRenew	S3_SCE_27 OP_BES	
30060 MIDWAY 500 24591 MW_VINCNT_11 500 1 1	P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2	P1	Single Contingency	150.2									154.8		1. The P1 overloads with the heavy Path 26 flow from north to south up to the 4000 MW limit (B1/S2) could be eliminated by operational mitigation actions reducing power flow via Path 26. The P1 overload would lead to congestion issue that needs to be assessed in economic study.
	P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2	P1	Single Contingency	149.8									154.5		
24590 MW_VINCNT_12 500 24156 VINCENT 500 1 1	P1L_2408_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 2 AND PIDC_PDCI2_PDCI CONVERTER MONOPOLE #2	P6	overlapping singles	186.2									NotConv		2. The P6 overloads with the heavy Path 26 flow scenarios from north to south up to the 4000 MW limit and (B1/S2) could be eliminated by operational mitigation actions reducing power flow import via Path 26 after the 1st contingency.
	P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P1	Single Contingency	150.9									155.5		
24592 MW_VINCNT_22 500 24156 VINCENT 500 2 1	P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P1	Single Contingency	150.4									155.2		1. The P0 overload with the heavy Path 26 flow from south to north up to the 3000 MW limit (B2/B3/B8/S1) could be eliminated by operational mitigation actions, including reducing power flow via Path 26 and/or dispatching energy storage in charging mode in the Tehachapi area. The P0 overload would lead to congestion issue that needs to be assessed in economic study.
	P1L_2409_Line MIDWAY 500.0 to WIRLWIND 500.0 Circuit 3 AND P1L_2407_Line MIDWAY 500.0 to VINCENT 500.0 Circuit 1	P6	overlapping singles	187.0									NotConv		
30060 MIDWAY 500 24595 MW_WRLWIND_31 500 3 1	N2_1P26_N2S_NoRAS_MIDWAY-Vincent 500kV N-2 W/O Path26 RAS or OP	N2	Credible Common Corridor	114.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	115.9	< 100	2. The credible N-2 overloads for the operating scenarios with heavy Path 26 flow from north to south up to the 4000 MW limit (B1/S2) could be eliminated by the PG&E Path 26 RAS curtailing generation and the SCE Path 26 RAS dropping loads.
	N2_1P26_N2S_NoRAS_MIDWAY-Vincent 500kV N-2 W/O Path26 RAS or OP	N2	Credible Common Corridor	115.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.1	< 100	
24595 MW_WRLWIND_31 500 24594 MW_WRLWIND_32 500 3 1	Base Case	P0	Normal Operation	< 100	118.9	116.4	< 100	< 100	< 100	< 100	102.7	120.8	< 100	< 100	3. The P6 overloads for the operating scenarios with heavy Path 26 flow from north to south up to the 4000 MW limit (B1/S2) could be eliminated by operational mitigation actions reducing power flow import via Path 26 after the 1st contingency.
	N2_1P26_N2S_NoRAS_MIDWAY-Vincent 500kV N-2 W/O Path26 RAS or OP	N2	Credible Common Corridor	107.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.5	< 100	
	N2_4P26_N2S_RAS1_MIDWAY-Vincent 500kV N-2 WITH Path26 N2S RAS	N2	Credible Common Corridor	< 100	NA	NA	< 100	< 100	< 100	< 100	< 100	NA	< 100	< 100	
	N2_5P26_N2S_RAS-OP_MIDWAY-Vincent 500kV N-2 WITH Path26 N2S RAS and OP	P6	overlapping singles	< 100	NA	NA	< 100	< 100	< 100	< 100	< 100	NA	< 100	< 100	
29400 ANTELOPE 500 29401 WINDHUB 500 1 1	P1L_24209_Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	108.1	< 100	< 100	< 100	101.3	< 100	< 100	The P1 and P2/P4 overloads could be eliminated by modifying Tehachapi CRAS to curtail generation in the area.
	P24L_T_P4_017_Windhub 1AA bank and Windhub-Whirlwind 500 kV line	P2/P4	overlapping singles	< 100	< 100	< 100	< 100	108.3	< 100	< 100	< 100	101.5	< 100	< 100	
29402 WIRLWIND 500 29401 WINDHUB 500 1 1	P1L_24207_Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	< 100	107.8	< 100	< 100	< 100	100.9	< 100	< 100	The P6 overloads could be eliminated by operational mitigation actions dispatching available resources after the 1st contingency.
	P24L_T_P4_010_Windhub 4AA bank and Windhub-Antelope 500 kV line	P2/P4	overlapping singles	< 100	< 100	< 100	< 100	108.1	< 100	< 100	< 100	101.0	< 100	< 100	
24086 LUGO 500 24156 VINCENT 500 #1 or #2	P1L_24072_Line LUGO 500.0 to VINCENT 500.0 Circuit 2 or 1 AND P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P6	overlapping singles	117.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	NotConv	< 100	1. The P7 overloads could be eliminated by preemptively dispatching available resources including energy storage resources in the Metro and Eastern areas.
24086 LUGO 500 24092 MIRALOMA 500 #2 or #3	P1L_24070_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3 or 2 AND P1L_24073_Line LUGO 500.0 to RANCHVST 500.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	110.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	2. The P6 overloads might be eliminated by operational mitigation actions as system adjustment dispatching available resources including energy storage and demand response in the Metro and Eastern areas after the 1st contingency.
24086 LUGO 500 24236 RANCHVST 500 1 1	P7L_M_0052_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3	P7	common structure	< 100	< 100	< 100	103.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	3. As an alternative option, advanced power flow control devices could be considered to eliminate the overloads as needed.
24156 VINCENT Sections 1 and 2	P1L_24071_Line LUGO 500.0 to VINCENT 500.0 Circuit 1 AND P1L_24072_Line LUGO 500.0 to VINCENT 500.0 Circuit 2	P6	overlapping singles	108.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.8	< 100	1. The P7 overloads could be eliminated by preemptively dispatching available resources including energy storage resources in the Metro area.
	P7L_M_0052_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3	P7	common structure	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
24092 MIRALOMA 500 24178 mirlom1i 13.8 1 1	P1T_24246_Trans MIRALOMA 500.00 to MIRALOMW 230.00 Circuit 2MIRLOMZT 13.80	P1	Single Contingency	< 100	< 100	< 100	103.1	< 100	< 100	< 100	< 100	< 100	101.7	< 100	The P1 overloads could be eliminated by operational mitigation actions dispatching available resources including energy storage and demand response in the Metro area.
	P1T_24246_Trans MIRALOMA 500.00 to MIRALOMW 230.00 Circuit 2MIRLOMZT 13.80	P1	Single Contingency	< 100	< 100	< 100	104.0	< 100	< 100	< 100	< 100	< 100	103.1	< 100	
24156 VINCENT 500 29518 vinctn1i 13.8 1 1	P1T_24256_Trans VINCENT 500.0 to VINCENT2 230.0 Circuit 4VINCENT4T 13.8	P1	Single Contingency	< 100	< 100	< 100	113.0	< 100	< 100	< 100	< 100	< 100	102.3	< 100	The near-term P6 overloads of Vincent AA banks (B1/S2) could be eliminated by dispatching available resources in the Vincent and Metro areas. The long-term P1, P2, P3, P4, and P6 overloads in the 2040 summer peak scenario (B4) could be eliminated by the following potential mitigation alternatives, either individually or in combination.
	P24L_T_P4_003_Vincent-Whirlwind 500 kV line and Vincent 4AA transformer bank	P2/P4	(blank)	< 100	< 100	< 100	111.4	< 100	< 100	< 100	< 100	< 100	100.8	< 100	
24156 VINCENT 500 29518 vinctn1i 13.8 1 1	GPI_24001_Gen Alamitos Repower AND P1T_24256_Trans VINCENT 500.00 to VINCENT2 230.00 Circuit 4VINCENT4T 13.80	P3	G-1/L-1	< 100	< 100	< 100	115.6	< 100	< 100	< 100	< 100	< 100	105.3	< 100	1. Dispatch available resources including energy storage and demand response in the Vincent and Metro areas
	P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1 AND P1T_24256_Trans VINCENT 500.00 to VINCENT2 230.0 Circuit 4VINCENT4T 13.8	P6	overlapping singles	129.1	< 100	< 100	145.1	112.2	< 100	< 100	< 100	< 100	136.0	< 100	
24156 VINCENT 500 29520 vinctn4i 13.8 4 1	P1T_24255_Trans VINCENT 500.0 to VINCENT2 230.0 Circuit 1VINCENT1T 13.8	P1	Single Contingency	< 100	< 100	< 100	112.5	< 100	< 100	< 100	< 100	< 100	101.8	< 100	2. Eliminate the P2 and P4 contingencies
	GPI_24001_Gen Alamitos Repower AND P1T_24255_Trans VINCENT 500.00 to VINCENT2 230.00 Circuit 1VINCENT1T 13.80	P3	G-1/L-1	< 100	< 100	< 100	115.1	< 100	< 100	< 100	< 100	< 100	104.8	< 100	
24156 VINCENT 500 24190 vinctn2i 13.8 2 1	P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1 AND P1T_24255_Trans VINCENT 500.0 to VINCENT2 230.0 Circuit 1VINCENT1T 13.8	P6	overlapping singles	128.6	< 100	< 100	144.5	111.7	< 100	< 100	< 100	< 100	135.4	< 100	3. Eliminate the 230 kV split bus configuration by upgrading circuit breakers at the Vincent 230 kV substation
	P1T_24290_Trans VINCENT 500.0 to VINCENT 230.0 Circuit 3VINCENT3T 13.8 AND P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P6	overlapping singles	117.4	< 100	< 100	102.9	< 100	< 100	< 100	< 100	< 100	132.0	< 100	
24156 VINCENT 500 241551 vinctn3i 13.8 3 1	P1T_24254_Trans VINCENT 500.0 to VINCENT 230.0 Circuit 2VINCENT2T 13.8 AND P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P6	overlapping singles	115.2	< 100	< 100	101.1	< 100	< 100	< 100	< 100	< 100	129.6	< 100	Add a 4th AA bank to address the long-term P6 overloads of Mesa AA banks (B3B4). The near-term P6 overloads (S2) could be eliminated by dispatching available resources including energy storage and demand response in the Metro area.
	P1T_24262_Trans MESA CAL 500/230 kV AA3 or AA4 AND P1T_24261_Trans MESA CAL 500/230 kV AA2	P6	overlapping singles	114.9	< 100	103.6	122.0	104.6	< 100	< 100	< 100	< 100	119.0	< 100	
24386 MESA CAL 500/230 AA4 or AA3	P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_2428A_Line DELAMA 230.0 to CENTER 230.0 Circuit 1	P6	overlapping singles	110.8	< 100	< 100	113.2	< 100	< 100	< 100	< 100	< 100	112.5	< 100	
	P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2 AND P1L_2428A_Line DELAMA 230.0 to CENTER 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	110.3	119.6	< 100	< 100	< 100	< 100	< 100	103.0	< 100	
24386 MESA CAL 500/230 AA2	P1T_24262_Trans MESA CAL 500/230 kV AA3 AND P1T_24263_Trans MESA CAL 500/230 kV AA4	P6	overlapping singles	103.8	< 100	105.9	117.7	< 100	< 100	< 100	< 100	< 100	109.7	< 100	
	P1T_24255_Trans VINCENT 500.00 to VINCENT2 230.00 Circuit 1VINCENT1T 13.80 AND P1T_24256_Trans VINCENT 500.00 to VINCENT2 230.00 Circuit 4VINCENT4T 13.80	P6	overlapping singles	< 100	< 100	< 100	110.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P1T_24256_Trans VINCENT 500.00 to VINCENT2 230.00 Circuit 4VINCENT4T 13.80 AND P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	< 100	110.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P1L_24076_Line MESA CAL 230.0 to VINCENT2 230.0 Circuit 2 AND P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	104.5	117.0	< 100	< 100	< 100	< 100	< 100	103.4	< 100	
	Base Case	P0	Normal Operation	< 100	< 100	< 100	109.1	< 100	101.5	< 100	< 100	< 100	< 100	< 100	
	P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	112.5	< 100	112.7	< 100	< 100	< 100	< 100	< 100	
	P1T_24261_Trans MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESAZT 13.80	P1	Single Contingency	< 100	< 100	< 100	114.4	< 100	108.5	< 100	< 100	< 100	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				B1_SCE_27 SP	B2_SCE_30 SP	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5_SCE_30 SmrOP	B6R: 2040 Winter Peak (w/o DMS)	B7_SCE_27 OP	B8R: 2035 Spring Off-Peak (w/o DMS)	S1_SCE_30 SP_HLOAD	S2_SCE_27 SP_HRenew	S3_SCE_27 OP_BES		
24393 MESACALS 230 24076 LAGUBELL 230 2 1	P24L_M_P4_0027_Line VINCONT2 230.0 to MESA CAL 230.0 Circuit 1 Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P2/P4	Internal Breaker Fault /stuck breaker	< 100	< 100	< 100	116.3	< 100	116.3	< 100	< 100	< 100	100.0	< 100	The near-term overloads could be eliminated by dispatching available resources including energy storage and demand response in the Metro area. However, various mitigation alternatives should be investigated to address the long-term P0 through P7 overloads in the Metro area without the Del Amo-Mesa-Serrano 500 kV reinforcement project, such as 1. Eliminating the Mesa and Alamos 230 kV split bus configurations by upgrading circuit breakers 2. Upgrade the Laguna Bell 230 kV tie with LADWP by adding a phase-shifting and voltage regulating transformer tie 3. Loop existing 230 kV lines into Lighthouse 230 kV substation, subject to feasibility assessment 4. Upgrading Mesa - Laguna Bell 230 kV Circuit #2, Mesa - Lighthouse, Mesa - Center, and Center - Del Amo 230 kV lines 5. Develop Lighthouse-Mesa-Serrano 500 kV lines and add Lighthouse 500/230 kV substation 6. Explore other innovative and cost-effective solutions	
	GP1_24001_Gen Alamos Repower AND P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P3	G-1/L-1	< 100	< 100	< 100	117.2	< 100	< 100	< 100	< 100	< 100	101.6	< 100		
	GP1_24001_Gen Alamos Repower AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P3	G-1/T-1	< 100	< 100	101.1	117.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	GP1_24004_Gen El Segundo 5, 6 MODULE AND Base Case	P3	G-1/T-1	< 100	< 100	101.4	117.4	< 100	105.6	< 100	< 100	< 100	< 100	< 100		
	GP1_24004_Gen El Segundo 5, 6 MODULE AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P3	G-1/T-1	< 100	< 100	106.3	122.3	< 100	< 100	< 100	< 100	< 100	101.4	< 100		
	GP1_24005_Gen El Segundo 7, 8 MODULE AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P3	G-1/T-1	< 100	< 100	106.3	122.2	< 100	< 100	< 100	< 100	< 100	101.3	< 100		
	GP1_24007_Gen Huntington Beach Repower AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P3	G-1/T-1	< 100	< 100	102.2	118.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	GP1_24015_Gen PEN Plant (SDG&E) AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P3	G-1/T-1	< 100	< 100	< 100	115.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	P1L_24305_Line DELAMO 500.0 to MESA CAL 500.0 Circuit 1 AND P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	NA	NA	< 100	NA	< 100	NA	< 100	< 100	< 100		
	P1L_24305_Line DELAMO 500.0 to MESA CAL 500.0 Circuit 1 AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P6	overlapping singles	< 100	< 100	NA	NA	< 100	NA	< 100	NA	< 100	< 100	< 100		
	P1T_24250_Tran SERRANO 500.00 to SERRANO 230.00 Circuit 2SERRAN2T 13.80 AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P6	overlapping singles	< 100	< 100	101.1	116.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	P1DC_PDC1_PDCI CONVERTER MONOPOLE #1 AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P6	overlapping singles	< 100	< 100	102.0	123.6	< 100	< 100	< 100	< 100	< 100	104.2	< 100		
	P1L_24055_Line HINSON 230.0 to DELAMO 230.0 Circuit 1 AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P6	overlapping singles	< 100	< 100	105.7	121.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80 AND P1L_24284_Line DELAMO 230.0 to CENTER 230.0 Circuit 1	P6	overlapping singles	104.4	< 100	122.2	139.3	103.2	< 100	< 100	< 100	< 100	113.9	< 100		
	P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_24067_Line LITEHIPE 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	114.6	< 100	102.3	134.0	104.4	< 100	< 100	< 100	< 100	117.4	< 100		
	P1L_24061_Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	107.5	< 100	< 100	127.3	< 100	< 100	< 100	< 100	< 100	109.1	< 100		
	P1L_2422_Line CENTER 230.0 to MESACALS 230.0 Circuit 1 AND P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	110.1	< 100	< 100	128.1	< 100	< 100	< 100	< 100	< 100	111.4	< 100		
	P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80 AND P1L_24076_Line MESA CAL 230.0 to VINCONT2 230.0 Circuit 2	P6	overlapping singles	104.3	< 100	111.9	133.0	100.2	< 100	< 100	< 100	< 100	111.7	< 100		
	L_M_P7_0502_Line LAGUBELL 230.0 to MESACAL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	107.5	< 100	< 100	127.3	< 100	133.2	< 100	< 100	< 100	109.2	< 100		
P7L_M_0013A_Line REDONDO 230.0 to MESA CAL 230.0 Circuit 1 Line LAGUBELL 230.0 to MESACAL 230.0 Circuit 1	P7	common structure	< 100	< 100	< 100	112.5	< 100	112.7	< 100	< 100	< 100	< 100	< 100			
24076 LAGUBELL 230 24091 MESA CAL 230 1 1	P7L_M_0014_Line LITEHIPE 230.0 to MESA CAL 230.0 Circuit 1 Line LAGUBELL 230.0 to MESACALS 230.0 Circuit 2	P7	common structure	< 100	< 100	< 100	100.4	< 100	111.4	< 100	< 100	< 100	< 100	< 100		
24084 LITEHIPE 230 24091 MESA CAL 230 1 1	Base Case	P0	Normal Operation	< 100	< 100	< 100	102.4	< 100	107.7	< 100	< 100	< 100	< 100	< 100	The near-term overloads could be eliminated by dispatching available resources including energy storage and demand response in the Metro area. However, various mitigation alternatives should be investigated to address the long-term P0 through P7 overloads in the Metro area without the Del Amo-Mesa-Serrano 500 kV reinforcement project, such as 1. Eliminating the Mesa and Alamos 230 kV split bus configurations by upgrading circuit breakers 2. Upgrade the Laguna Bell 230 kV tie with LADWP by adding a phase-shifting and voltage regulating transformer tie 3. Loop existing 230 kV lines into Lighthouse 230 kV substation, subject to feasibility assessment 4. Upgrading Mesa - Laguna Bell 230 kV Circuit #2, Mesa - Lighthouse, Mesa - Center, and Center - Del Amo 230 kV lines 5. Develop Lighthouse-Mesa-Serrano 500 kV lines and add Lighthouse 500/230 kV substation 6. Explore other innovative and cost-effective solutions	
	PSL_ab_BD_017_Laguna Bell 220 kv North Bus	P5	non-redundant component	< 100	< 100	< 100	100.6	< 100	107.0	< 100	< 100	< 100	< 100	< 100		
	P1L_24055_Line HINSON 230.0 to DELAMO 230.0 Circuit 1 AND P1L_24059_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	113.9	104.7	< 100	< 100	< 100	< 100	< 100	< 100		
	P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2 AND P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	104.4	< 100	< 100	109.8	< 100	< 100	< 100	< 100	< 100	103.1	< 100		
	P1L_24061_Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_24059_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1	P6	overlapping singles	112.2	< 100	< 100	121.0	110.7	< 100	< 100	< 100	< 100	105.8	< 100		
	P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_24061_Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	110.3	< 100	< 100	113.7	101.7	< 100	< 100	< 100	< 100	106.1	< 100		
	P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2	P6	overlapping singles	104.4	< 100	< 100	109.8	< 100	< 100	< 100	< 100	< 100	103.0	< 100		
	L_M_P7_0501B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	112.2	< 100	< 100	121.1	110.8	145.6	< 100	< 100	< 100	105.9	< 100		
	L_M_P7_0502_Line LAGUBELL 230.0 to MESACAL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	110.3	< 100	< 100	113.7	101.7	127.1	< 100	< 100	< 100	106.2	< 100		
	P7L_M_0038_Line HINSON 230.0 to DELAMO 230.0 Circuit 1 Line ALMITOSW 230.0 to LITEHIPE 230.0 Circuit 1	P7	common structure	< 100	< 100	< 100	< 100	< 100	109.4	< 100	< 100	< 100	< 100	< 100		
	GP1_24001_Gen Alamos Repower AND P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2	P3	G-1/L-1	< 100	< 100	< 100	103.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2 AND P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80	P6	overlapping singles	103.4	< 100	< 100	112.4	< 100	< 100	< 100	< 100	< 100	101.9	< 100		
	P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2 AND P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	104.0	< 100	< 100	109.5	< 100	< 100	< 100	< 100	< 100	100.6	< 100		
	24029 DELAMO 230 24021 CENTER 230 1 1	P1L_24063_Line LAGUBELL 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2	P6	overlapping singles	102.3	< 100	109.8	130.8	< 100	< 100	< 100	< 100	< 100	110.8	< 100	
		P1L_2419_Line BARRE 230.0 to LEWIS 230.0 Circuit 1 AND P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	108.9	118.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
		P1T_24261_Tran MESA CAL 500.00 to MESA CAL 230.00 Circuit 2MESA2T 13.80 AND P1L_24132_Line MESACALS 230.0 to LAGUBELL 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	116.6	130.1	< 100	< 100	< 100	< 100	< 100	107.9	< 100	
	24065 HINSON 230 24029 DELAMO 230 1 1	P7L_M_0014_Line LITEHIPE 230.0 to MESA CAL 230.0 Circuit 1 Line LAGUBELL 230.0 to MESACALS 230.0 Circuit 2	P7	common structure	< 100	< 100	< 100	103.5	< 100	107.5	< 100	< 100	< 100	< 100	< 100	The near-term overloads could be eliminated by dispatching available resources including energy storage and demand response in the Metro area. However, various mitigation alternatives should be investigated to address the long-term P0 through P7 overloads in the Metro area without the Del Amo-Mesa-Serrano 500 kV reinforcement project, such as 1. Eliminating the Mesa and Alamos 230 kV split bus configurations by upgrading circuit breakers 2. Upgrade the Laguna Bell 230 kV tie with LADWP by adding a phase-shifting and voltage regulating transformer tie 3. Loop existing 230 kV lines into Lighthouse 230 kV substation, subject to feasibility assessment 4. Upgrading Mesa - Laguna Bell 230 kV Circuit #2, Mesa - Lighthouse, Mesa - Center, and Center - Del Amo 230 kV lines 5. Develop Lighthouse-Mesa-Serrano 500 kV lines and add Lighthouse 500/230 kV substation 6. Explore other innovative and cost-effective solutions
		P1L_24059_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 AND P1L_24067_Line LITEHIPE 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	113.1	105.5	< 100	< 100	< 100	< 100	< 100	< 100	
		P1L_24067_Line LITEHIPE 230.0 to MESA CAL 230.0 Circuit 1 AND P1L_2413x_Line ALMITOSW 230.0 to DELAMO 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	NA	NA	< 100	NA	< 100	NA	< 100	< 100	< 100	
24074 LA FRESA 230 24091 MESA CAL 230 1 1	L_M_P7_0501B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	< 100	< 100	< 100	< 100	< 100	126.7	< 100	< 100	< 100	< 100	< 100	The near-term overloads could be eliminated by dispatching available resources including energy storage and demand response in the Metro area. However, various mitigation alternatives should be investigated to address the long-term P0 through P7 overloads in the Metro area without the Del Amo-Mesa-Serrano 500 kV reinforcement project, such as 1. Eliminating the Mesa and Alamos 230 kV split bus configurations by upgrading circuit breakers 2. Upgrade the Laguna Bell 230 kV tie with LADWP by adding a phase-shifting and voltage regulating transformer tie 3. Loop existing 230 kV lines into Lighthouse 230 kV substation, subject to feasibility assessment 4. Upgrading Mesa - Laguna Bell 230 kV Circuit #2, Mesa - Lighthouse, Mesa - Center, and Center - Del Amo 230 kV lines 5. Develop Lighthouse-Mesa-Serrano 500 kV lines and add Lighthouse 500/230 kV substation 6. Explore other innovative and cost-effective solutions	
	P1L_24059_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 AND P1L_24067_Line LITEHIPE 230.0 to MESA CAL 230.0 Circuit 1	P6	overlapping singles	100.5	< 100	< 100	110.3	100.7	< 100	< 100	< 100	< 100	< 100	< 100		
	P7L_M_0028_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to HINSON 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	< 100	< 100	109.2	< 100	< 100	< 100	< 100	< 100		
24074 LA FRESA 230 24065 HINSON 230 1 1	L_M_P7_0501B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	< 100	< 100	< 100	102.3	< 100	124.9	< 100	< 100	< 100	< 100	< 100	The near-term overloads could be eliminated by dispatching available resources including energy storage and demand response in the Metro area. However, various mitigation	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_SCE_27 SP	B2_SCE_30 SP	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5_SCE_30 SmrOP	B6R: 2040 Winter Peak (w/o DMS)	B7_SCE_27 OP	B8R: 2035 Spring Off-Peak (w/o DMS)	S1_SCE_30 SP_HLOAD	S2_SCE_27 SP_HRenew	S3_SCE_27 OP_BES	
29516 VINCNT2 230 24128 S.CLARA 230 1 1	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV #1 AND P1L_24223 Line BARRE-W 230.0 to ELLIS 230.0 Circuit 2 or 1	P6	overlapping singles	114.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	113.8	< 100	Dispatch available resources including energy storage and demand response in the Ventura area to address the P1 and P7 overloads prior to the P or P7 contingency and eliminate the P6 overloads after the 1st event of P6 contingency. The use of energy storage is subject to verification that it has sufficient MWh capability and can be fully charged when needed. If the energy storage resources in the Ventura area are insufficient or limited to be charged, the needs for upgrading the 230 kV lines will be considered as alternatives. Reconductor with HTLS and/or upgrading terminal equipment as available energy storage resources and demand response are insufficient/limited in the long term cases.
	P1D2C_PDC12_PDC1 CONVERTER MONOPOLE #2 AND P1L_24094_Line PARDEE 230.0 to S.CLARA 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	117.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P7L_M_0059_Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 1 Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 2	P7	common structure	< 100	< 100	< 100	134.6	< 100	119.6	< 100	< 100	< 100	< 100	< 100	
	P7L_V_0054_Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 1 Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 2	P7	common structure	< 100	< 100	< 100	113.3	< 100	113.8	< 100	< 100	< 100	< 100	< 100	
24403 BAILEY 230 24115 PASTORIA 230 1 1	P1L_24093_Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 AND P1L_24100_Line PARDEE 230.0 to WARNE-PSTRIA 230.0 Circuit 1	P6	overlapping singles	136.4	116.4	115.0	< 100	< 100	< 100	< 100	123.9	114.5	< 100	110.9	
24114 PARDEE 230 24128 S.CLARA 230 1 1	P1L_24211_Line VINCENT2 230.0 to S.CLARA 230.0 Circuit 1	P1	Single Contingency	< 100	< 100	< 100	105.4	< 100	105.6	< 100	< 100	< 100	< 100	< 100	
	P1L_24091_Line PARDEE 230.0 to MOORPARK 230.0 Circuit 3 AND P1L_24211_Line VINCENT2 230.0 to S.CLARA 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	128.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P1L_24211_Line VINCENT2 230.0 to S.CLARA 230.0 Circuit 1 AND P1L_24105_Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	104.7	160.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P7L_M_0059_Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 1 Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 2	P7	common structure	< 100	< 100	124.4	183.3 (NotConv in PSLF)	102.3	176.23 (NotConv in PSLF)	< 100	< 100	103.8	110.3	< 100	
24114 PARDEE 230 24155 VINCENT 230 2 1	P7L_T_0064_Line VINCENT2 230.0 to S.CLARA 230.0 Circuit 1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1	P7	common structure	< 100	< 100	< 100	118.2	< 100	110.1	< 100	< 100	< 100	< 100	< 100	
	P1L_24102_Line PARDEE 230.0 to VINCENT2 230.0 Circuit 1 AND P1L_24136_Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	< 100	112.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P7L_T_0064_Line VINCENT2 230.0 to S.CLARA 230.0 Circuit 1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1	P7	common structure	< 100	< 100	< 100	107.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P7L_V_006_Line PARDEE to SYLMAR220 230 ck 1 line PARDEE to SYLMAR220 230 ck 2	P7	common structure	< 100	< 100	< 100	104.0	< 100	110.2	< 100	< 100	< 100	< 100	< 100	
24128 S.CLARA 230 24058 GOLETA 230 Circuit #1 or #2	P1L_24104_Line S.CLARA 230.0 to GOLETA 230.0 Circuit #2 or #1	P1	Single Contingency	< 100	< 100	< 100	117.7	< 100	107.0	< 100	< 100	< 100	< 100	< 100	
	P2L_V_P4_005_Line MOORPARK 230.0 to S.CLARA 230.0 Circuit 2 Line GOLETA 230.0 to S.CLARA 230.0 Circuit #2 or #1	P2/P4	Internal Breaker Fault /stuck breaker	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	PSL_d_TC_075_Goleta - Santa Clara No. 2 220 kv Line (Non Redundant Trip Coil Goleta CBE 542)	P5	non-redundant component	< 100	< 100	< 100	117.7	< 100	107.0	< 100	< 100	< 100	< 100	< 100	
	PSL_d_TC_168_Goleta - Santa Clara No. 2 220 kv Line (Non Redundant Trip Coil Santa Clara CBE 5092)	P5	non-redundant component	< 100	< 100	< 100	111.9	< 100	101.7	< 100	< 100	< 100	< 100	< 100	
24128 S.CLARA 230 24099 MOORPARK 230 1 1	P1L_24106_Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 2 AND P1L_24094_Line PARDEE 230.0 to S.CLARA 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	102.9	169.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P1L_24211_Line VINCENT2 230.0 to S.CLARA 230.0 Circuit 1 AND P1L_24106_Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 2	P6	overlapping singles	< 100	< 100	< 100	153.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P7L_V_002_Line PARDEE to S.CLARA 230 ck 1 line S.CLARA to VINCENT2 230 ck 1	P7	common structure	< 100	< 100	< 100	139.3	< 100	129.0	< 100	< 100	< 100	< 100	< 100	
	P2L_V_P4_006_Line MOORPARK 230.0 to S.CLARA 230.0 Circuit 1 Line GOLETA 230.0 to S.CLARA 230.0 Circuit 1	P2/P4	Internal Breaker Fault /stuck breaker	< 100	< 100	< 100	101.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
24128 S.CLARA 230 24099 MOORPARK 230 2 1	P1L_24094_Line PARDEE 230.0 to S.CLARA 230.0 Circuit 1 AND P1L_24105_Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 1	P6	overlapping singles	< 100	< 100	118.7	195.4	102.0	< 100	< 100	< 100	102.7	< 100	< 100	
	P7L_V_002_Line PARDEE to S.CLARA 230 ck 1 line S.CLARA to VINCENT2 230 ck 1	P7	common structure	< 100	< 100	101.8	160.5	< 100	148.7	< 100	< 100	< 100	< 100	< 100	
	P1L_24112y_Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1	P1	Single Contingency	< 100	105.2	< 100	< 100	< 100	< 100	< 100	< 100	106.3	< 100	< 100	
	P1L_SDGE30RAS0_23310 OCOTILLO-22885 SUNCREST 500KV #1	P1	Single Contingency	< 100	114.7	< 100	< 100	< 100	< 100	< 100	< 100	116.1	< 100	< 100	
22430 SILVERGT 230 22771 BAY BLVD 230 1 1	GP1_24007_Gen Huntington Beach Repower AND P1L_24112y_Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1	P3	G-1IL-1	< 100	108.1	< 100	< 100	< 100	< 100	< 100	< 100	109.2	< 100	< 100	P1, P2/P4, and P7 overloads could be eliminated by re-dispatching generation prior to the P1 contingency, until the completion of previously approved Imperial Valley - North of SONGS 500 kV line project
	GP1_24015_Gen PEN Plant (SDG&E) AND P1L_24112y_Line ALBERHIL 500.0 to VALLEYSC 500.0 Circuit 1	P3	G-1IL-1	< 100	108.2	< 100	< 100	< 100	< 100	< 100	< 100	109.4	< 100	< 100	
	P2L_M_P4_0051b_Line ALBERHIL 500.0 to SERRANO 500.0 Circuit 1 Tran SERRANO 500.0 to SERRANO_2 230.0 Circuit 3	P2/P4	Internal Breaker Fault /stuck breaker	< 100	104.4	< 100	< 100	< 100	< 100	< 100	< 100	105.4	< 100	< 100	
	P7L_M_0005_Line ELLIS 230.0 to SANTIAGO 230.0 Circuit 1 Line ELLIS 230.0 to JOHANNA 230.0 Circuit 1	P7	common structure	< 100	105.6	< 100	< 100	< 100	< 100	< 100	< 100	106.6	< 100	< 100	
	P7L_M_0022_Line S.ONOFFRE 230.0 to SERRANO 230.0 Circuit 1 Line VIEJO 230.0 to CHINO 230.0 Circuit 1	P7	common structure	< 100	104.2	< 100	< 100	< 100	< 100	< 100	< 100	105.2	< 100	< 100	

Note (*): P6 results are reported without System adjustment between the two single P1 events

2025-2026 ISO Reliability Assessment - Study Results

Study Area: SCE Main, covering SCE 500 kV system, and its Metro, EOL, and Ventura 230 kV systems, w/o modeling Del Amo - Mesa - Serrano 500 kV Reinforcement Project

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					B1_SCE_27 SP	B2_SCE_30 SP	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5_SCE_30 SmrOP	B6R: 2040 Winter Peak (w/o DMS)	B7_SCE_27 OP	B8R: 2035 Spring Off-Peak (w/o DMS)	S1_SCE_30 SP_HLOAD	S2_SCE_27SP_HRenew	S3_SCE_27OP_BES	
TROUT CANYON 500 kV	Base Case	P0	Normal Operation	Low Voltage						1.028						
	P1L_GLW02_Line TROUT CANYON 500.0 to	P1	Single Contingency	Low Voltage			0.996									
24086 LUGO 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.038		1.038			1.034						
	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	Low Voltage										0.983		
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.929				0.979		
24092 MIRALOMA 500 kV	Base Case	P0	Normal Operation	Low Voltage			1.034			1.016				1.036		
	P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P1	Single Contingency	Low Voltage						0.981				0.996		
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.841				0.960		
241018 EASLEY 500 kV	Base Case	P0	Normal Operation	Low Voltage										1.021		
	P1L_DCRT01_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P1	Single Contingency	Low Voltage										0.985		
24138 SERRANO 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.038		1.035			1.009				1.029		
	P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P1	Single Contingency	Low Voltage												
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.834				0.956		
24151 VALLEYS 500 kV	Base Case	P0	Normal Operation	Low Voltage						1.024				1.032		
	P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P1	Single Contingency	Low Voltage						0.997						
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.878				0.965		
	P7L_M_0052_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3	P7	common structure	Low Voltage						0.957				0.982		
	P7L_M_0053_Line MIRALOMA 500.0 to SERRANO 500.0 Circuit 1 Line MIRALOMA 500.0 to SERRANO 500.0 Circuit 2	P7	common structure	Low Voltage						0.991						
24156 VINCENT 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.036		1.038							1.030		
	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	Low Voltage										0.989		
	N2_1P26_N2S_NORAS_MIDWAY-Vincent 500kV N-2 W/O Path26 RAS or OP	N2	Credible Common Corridor	Low Voltage	1.002									0.958		
24236 RANCHVST 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.039		1.030			1.017				1.036		
	P1L_24119_Line VINCENT 500.0 to MESA CAL 500.0 Circuit 1	P1	Single Contingency	Low Voltage						0.983				0.995		
	P7L_M_0052_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3	P7	common structure	Low Voltage			0.996			0.945				0.987		
24374 REDBLUFF 500 kV	Base Case	P0	Normal Operation	Low Voltage										1.022		
	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	Low Voltage										0.962		
	P1L_14017_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P1	Single Contingency	Low Voltage										0.984		
24384 EAST TS 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.039		1.036			1.018				1.034		
24385 WEST TS 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.038		1.036			1.018				1.033		
24386 MESA CAL 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.026		1.029			1.012				1.020		
	P1L_24131_Line MESA CAL 500.0 to MIRALOMA 500.0 Circuit 1	P1	Single Contingency	Low Voltage	0.995											
	P7L_M_0052_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3	P7	common structure	Low Voltage			0.998			0.945				0.974		
	L_M_P7_0901B_Line LA FRESA to LAGUBELL 230 kV Circuit 1 and Line LA FRESA to MESA CAL 230 kV Circuit 1	P7	common structure	Low Voltage						0.962						
24573 HAE SVCL 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.020	1.028		1.012	1.032	1.022	1.014		1.030	1.019	1.014	
24801 DEVERS 500 kV	Base Case	P0	Normal Operation	Low Voltage				1.034		1.038				1.023		
	P1L_14017_Line DELANEY 500.0 to CIELO AZUL 500.0 Circuit 1	P1	Single Contingency	Low Voltage										0.978		
24849 DELAMO 500 kV	Base Case	P0	Normal Operation	Low Voltage												
	P1L_24068_Line LUGO 500.0 to VICTORVL 500.0 Circuit 1	P1	Single Contingency	Low Voltage												
	L_M_P7_0901B_Line LA FRESA to LAGUBELL 230 kV Circuit 1 and Line LA FRESA to MESA CAL 230 kV Circuit 1	P7	common structure	Low Voltage												
24900 COLRIVER 500 kV	Base Case	P0	Normal Operation	Low Voltage										1.034		
25660 MIRABLK2 500 kV	Base Case	P0	Normal Operation	Low Voltage	1.040		1.034							1.036		
29400 ANTELOPE 500 kV	Base Case	P0	Normal Operation	Low Voltage										1.037		
29402 WIRLWIND 500 kV	Base Case	P0	Normal Operation	Low Voltage					1.040							
24091 MESA CAL 230 kV	Base Case	P0	Normal Operation	Low Voltage			0.948									
	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.846						
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.707				0.874		
LAGUBELL 230 kV	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.683				0.881		
MESACALS 230 kV	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.696				0.885		
CENTER 230 kV	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.835						
DELAMO 230 kV	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.805						
24128 S.CLARA 230 kV	Base Case	P0	Normal Operation	Low Voltage			0.920									
	P1SVD_24301_SVD S.CLARA 230	P1	Single Contingency	Low Voltage			0.893									
	P7L_V_006_Line PARDEE to SYLMAR220 230 ck 1 Line PARDEE to SYLMAR220 230 ck 2	P7	common structure	Low Voltage			0.663			0.672						
BARRE 230 kV	P7L_M_0059_Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 1 Line S.CLARA 230.0 to MOORPARK 230.0 Circuit 2	P7	common structure	Low Voltage			0.626			0.645				0.853		
	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	Low Voltage										0.885		
	P7L_M_0052_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3	P7	common structure	Low Voltage						0.856						
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.713				0.903		
	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	Low Voltage										0.895		

Low voltage issues under normal conditions and potential voltage instability during single transmission line outages were observed in the SCE 500 kV system with high renewable generation in the near-term (B1/S2) and the long-term (B4), despite most of gas generation and over 2,000 MW of energy storage dispatched in the western LA Basin (Zone 996). In addition, the Southern California Bulk system study with 1-in-5 load level identified high voltage concern at the Mohave 500 kV substation, due to inadequate reactive power regulation.

Steady-state and dynamic reactive power support facilities at various candidate substations or nearby locations will be evaluated to determine optimal siting and Mvar sizing for both near-term and long-term needs. Locations and sizes under consideration include, but are not limited to: Eldorado (900, -300 Mvar), Lugo (1200, -300 Mvar), Vincent (900, -200 Mvar), Devers (600 Mvar), Mesa (900 Mvar), Lighthipe (300 Mvar), and Del Amo (300 Mvar). The technology options could be shunt capacitor/reactor, Static Var Systems including SVC and STARCOM, Synchronizer Condenser, or hybrid. Further evaluation is required to refine these options, confirm feasibility, and ensure compliance with applicable voltage criteria.

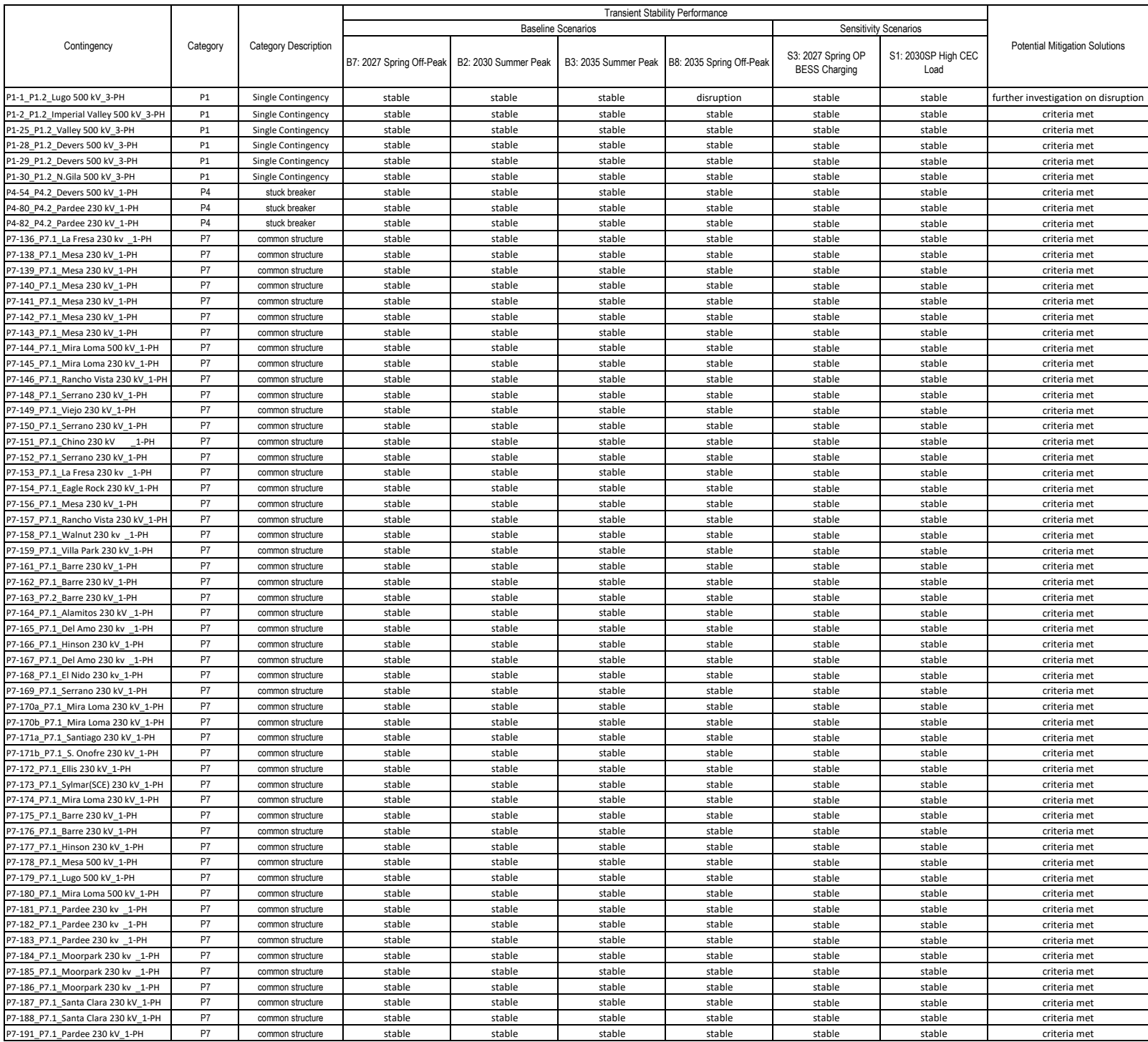
Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					B1_SCE_27 SP	B2_SCE_30 SP	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5_SCE_30 SmrOP	B6R: 2040 Winter Peak (w/o DMS)	B7_SCE_27 OP	B8R: 2035 Spring Off-Peak (w/o DMS)	S1_SCE_30 SP_HLOAD	S2_SCE_27SP_HRenew	S3_SCE_27OP_BES	
BARRE-W 230 kV	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.739						
	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.873						
BAILEY 230 kV	P7L_V_006_line PARDEE to SYLMAR220 230 ck 1 line PARDEE to SYLMAR220 230 ck 2	P7	common structure	Low Voltage			0.865			0.837						
	P7L_V_0054_Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 1 Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 2	P7	common structure	Low Voltage			0.865			0.837						
HINSON 230 kV	P1SVD_24283_SVS DEVERS 500	P1	Single Contingency	Low Voltage						0.885						
	P6L_ab_TL_044_Lightiipe - Alamitos No. 1 230 kv Line	P5	non-redundant component	Low Voltage						0.885						
	P7L_M_0052_Line LUGO 500.0 to MIRALOMA 500.0 Circuit 2 Line LUGO 500.0 to MIRALOMA 500.0 Circuit 3	P7	common structure	Low Voltage						0.819						
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.645				0.884		
	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.711						
LITEHIPE 230 kV	P1SVD_24293_SVD MIRALOMA 500	P1	Single Contingency	Low Voltage						0.890						
	P1SVD_24283_SVS DEVERS 500	P1	Single Contingency	Low Voltage						0.890						
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.654				0.879		
	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.729						
MIRALOME 230 kV	P1L_24112y_Line ALBERHIL 500.0 to VALLEYS 500.0 Circuit 1	P1	Single Contingency	Low Voltage						0.893						
	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.747				0.897		
LCIENEGA 230 kV	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.646						
EL NIDO 230 kV	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.656						
LA FRESA 230 kV	L_M_P7_0901B_Line LA FRESA 230.0 to LAGUBELL 230.0 Circuit 1 Line LA FRESA 230.0 to MESA CAL 230.0 Circuit 1	P7	common structure	Low Voltage						0.659						
SANTIAGO 230 kV	P7L_M_0051_Line MESA CAL 500.0 to VINCENT 500.0 Circuit 1 Line RIOHONDO 230.0 to VINCENT 230.0 Circuit 2	P7	common structure	Low Voltage						0.782						
EAGLOCK 230 kV	P7L_M_0001_PDCI BIPOLE CONVERTERS	P7	common structure	Low Voltage			0.896			0.890						
EDMONSTN 230 kV	P7L_V_0054_Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 1 Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 2	P7	common structure	Low Voltage			0.879			0.866						
PASTORIA 230 kV	P7L_V_0054_Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 1 Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 2	P7	common structure	Low Voltage			0.879			0.868						
SANT CLARA 230 kV	Base Case	P0	Normal Operation	Low Voltage			0.920									
PARDEE 230 kV							0.967									
	P7L_M_0001_PDCI BIPOLE CONVERTERS	P7	common structure	Low Voltage			0.876			0.902						
	P7L_V_0054_Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 1 Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 2	P7	common structure	Low Voltage			0.766			0.777						
MOORPARK 230 kV	Base Case	P0	Normal Operation	Low Voltage			0.955									Add reactive power support facility in the Ventura area at Santa Clara or Goleta (150 ~ 300 Mvar)
	P1DC_PDCI1_PDCI CONVERTER MONOPOLE #1	P1	Single Contingency	Low Voltage			0.888									
	P7L_V_0054_Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 1 Line PARDEE 230.0 to SYLMAR220 230.0 Circuit 2	P7	common structure	Low Voltage			0.719			0.733						
GOLETA 230 kV	Base Case	P0	Normal Operation	Low Voltage			0.868									
	P1L_LDWP07_Line VICTORVL 500.0 to RINALDI 500.0 Ckt 1	P1	Single Contingency	Low Voltage			0.862									
	P7L_V_003_line MOORPARK to S CLARA 230 ck 1 line MOORPARK to S CLARA 230 ck 2	P7	common structure	Low Voltage			0.570			0.574				0.804		
	N2_4P26_N2S_RAS1_MIDWAY-Vincent 500kV N 2 WITH Path26 N2S RAS	N2	Credible Common Coridor	Low Voltage			0.874									

Note (*): Voltage in blank cell is within applicable voltage criteria

Substation	Contingency	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5: 2030 Summer-Off Peak	B6R: 2040 Winter Peak (w/o DMS)	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak (w/o DMS)	S1: 2030SP High CEC Load	S2: 2030SP Heavy Renewable	S3: 2027 Spring OP BESS Charging	
CHINO 230 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.60	< 8	Dynamic reactive power support facilities at one or two locations, such as ±(100~300) Mvar at Mohave or Eldorado 500 kV bus, ±(100~300) Mvar at Lugo 500 kV substation. Further evaluation is required to refine these options, confirm feasibility, and ensure compliance with applicable voltage criteria.
PADUA 230 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.48	< 8	
SANBRDNO 230 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.70	< 8	
SERRANO 230 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.36	< 8	
VILLA PK 230 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.21	< 8	
VSTA 230 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.29	< 8	
MIRALOMW 230 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.37	< 8	
MIRALOMW 500 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.19	< 8	
SERRANO 500 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	8.93	< 8	
VALLEYSC 500 kV	P1L_SDGE10_22536 N.GILA-22360 IMPRLVLY 500KV &1	P1	Single Contingency	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	9.74	< 8	

Study Area: SCE Main, covering SCE 500 kV system, and its Metro, EOL, and Ventura 230 kV systems, w/o modeling Del Amo - Mesa - Serrano 500 kV Reinforcement Project

Transient Stability





Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions	
			B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5: 2030 Summer-Off Peak	B6R: 2040 Winter Peak (w/o DMS)	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak (w/o DMS)	S1: 2030SP High CEC Load	S2: 2030SP Heavy Renewable		S3: 2027 Spring OP BESS Charging

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

Substation	Load Served (MW)											Potential Mitigation Solutions
	B1: 2027 Summer Peak	B2: 2030 Summer Peak	B3R: 2035 Summer Peak (w/o DMS)	B4R: 2040 Summer Peak (w/o DMS)	B5: 2030 Summer-Off Peak	B6R: 2040 Winter Peak (w/o DMS)	B7: 2027 Spring Off-Peak	B8R: 2035 Spring Off-Peak (w/o DMS)	S1: 2030SP High CEC Load	S2: 2030SP Heavy Renewable	S3: 2027 Spring OP BESS Charging	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLO AD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS	
24701 KRAMER 230 24601 VICTOR 230 2 1	P1.1_gen_161_Gen RUSH 230.0 to VICTOR 2.4 Unit ID 1 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	108.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Mojave Desert RAS
	P1.1_gen_163_Gen POOLE 230.0 to VICTOR 7.2 Unit ID 1 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	108.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_185_Gen CSA DIAB 4 230.0 to VICTOR 12.47 Unit ID 1 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	108.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_227_Gen COLOSEM 230.0 to VICTOR 13.8 Unit ID 1-3 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	101.4	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_281_Gen SUNRAY2_G 230.0 to VICTOR 0.4 Unit ID 1 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	101.9	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_201_Gen RUSH 230.0 to VICTOR 2.4 Unit ID 1 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	102.8	< 100	< 100	< 100	< 100	< 100	Mojave Desert RAS / Reduce BESS Charging
	line_P5_NOL_TC_004_Kramer - Victor No. 1 220 kV Line	P5	Non-Redundant Relay	109.0	< 100	< 100	103.5	< 100	< 100	< 100	< 100	< 100	
	line_P5_NOL_TC_005_Kramer - Victor No. 2 220 kV Line	P5	Non-Redundant Relay	109.0	< 100	< 100	103.5	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_182_Gen NAVY1_CALGEN 230.0 to VICTOR 13.8 Unit ID 1 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	102.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.0	
	P1.1_gen_192_Gen OXBOW 230.0 to VICTOR 13.8 Unit ID 1 AND P1.2_line_35_Line 230.0 Circuit 1	P3	G-1/N-1	104.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.0	
24701 KRAMER 230 24702 KRAMER 115.0 Transformer Bank 1	P7_6_Line KRAMER - VICTOR 230.0 ck 1 Line KRAMER - VICTOR 230.0 ck 2	P7	DCTL	NotConv	133.2	< 100	129.9	< 100	< 100	137.2	127.0	< 100	Mojave Desert RAS
24701 KRAMER 230 24702 KRAMER 115.0 Transformer Bank 2	P7_6_Line KRAMER - VICTOR 230.0 ck 1 Line KRAMER - VICTOR 230.0 ck 2	P7	DCTL	NotConv	145.0	< 100	138.3	< 100	< 100	146.7	135.3	< 100	
24701 KRAMER 230 24717 COLWATER 230 2 1	P1.2_line_89_Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P1	N-1	< 100	< 100	111.6	< 100	< 100	< 100	< 100	< 100	< 100	Planned Kramer CRAS
	P1.1_gen_308_Gen TOT812_D1_GE 230.0 to KRAMER 34.5 Unit ID 1 AND P1.2_line_89_Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P3	G-1/N-1	< 100	< 100	101.1	< 100	< 100	110.2	< 100	< 100	< 100	
	P1.1_gen_190_Gen COLOSEM 230.0 to KRAMER 13.8 Unit ID 1-3 AND P1.2_line_89_Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P3	G-1/N-1	< 100	< 100	109.5	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_294_Gen SUNRAY2_G 230.0 to KRAMER 0.4 Unit ID 1 AND P1.2_line_89_Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P3	G-1/N-1	< 100	< 100	109.9	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_195_Gen NAVY1_CALGEN 230.0 to KRAMER 13.8 Unit ID 1 AND P1.2_line_89_Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P3	G-1/N-1	< 100	< 100	110.5	< 100	< 100	< 100	< 100	< 100	< 100	
24702 KRAMER 115 24716 COLWATER 115 1 1	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.2	Reduce BESS charging
24716 COLWATER 115 24765 TAP705 115 1 1	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	< 100	< 100	152.9	< 100	< 100	< 100	< 100	< 100	< 100	Planned Kramer CRAS may indirectly mitigate thermal overload - Further investigation needed
24716 COLWATER 115 24774 DUNNSIDE 115 1 1	P7_6_Line KRAMER - VICTOR 230.0 ck 1 Line KRAMER - VICTOR 230.0 ck 2	P7	DCTL	NotConv	< 100	< 100	113.7	< 100	< 100	< 100	105.3	NotConv	Mojave Desert RAS may indirectly mitigate thermal overload - Further investigation needed
	_NOL_line_94_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	< 100	< 100	NotConv	< 100	< 100	NotConv	< 100	< 100	116.5	Planned Kramer CRAS may indirectly mitigate thermal overload - Further investigation needed / Reduce BESS charging
	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.4	Reduce BESS charging
24717 COLWATER 230 24716 COLWATER 115 Transformer Bank	_NOL_line_94_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	162.3	NotConv	NotConv	176.9	< 100	NotConv	NotConv	131.7	109.4	Planned Kramer CRAS / Reduce BESS charging
	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	< 100	< 100	107.1	< 100	< 100	< 100	< 100	< 100	107.7	
24731 INYOKERN 115 24866 TAP189 115 1 1	P1.2_line_86_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	Bishop RAS
	P2_11_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P2-1	Line Section w/o Fault	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
	line_P5_NOL_TC_021_Inyokern - Control - Coso - Haiwee 115 kV Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
	line_P5_TL_NOL_17_P5.b Control-Coso-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
	line_P5_TL_NOL_18_P5.b Control-Coso-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
24759 TORTILLA 115 24765 TAP705 115 1 1	_NOL_line_94_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	104.0	NotConv	NotConv	104.6	< 100	NotConv	NotConv	< 100	< 100	Planned Kramer CRAS may indirectly mitigate thermal overload - Further investigation needed
	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	< 100	< 100	159.1	< 100	< 100	< 100	< 100	< 100	< 100	
24777 BAKER 115 24774 DUNNSIDE 115 1 1	P7_6_Line KRAMER - VICTOR 230.0 ck 1 Line KRAMER - VICTOR 230.0 ck 2	P7	DCTL	NotConv	< 100	< 100	112.9	< 100	< 100	< 100	104.5	NotConv	Mojave Desert RAS may indirectly mitigate thermal overload - Further investigation needed
	_NOL_line_94_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	< 100	< 100	NotConv	< 100	< 100	NotConv	< 100	< 100	117.4	Planned Kramer CRAS may indirectly mitigate thermal overload - Further investigation needed / Reduce BESS charging
	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	118.3	Reduce BESS charging
24777 BAKER 115 24778 MTN PASS 115 1 1	_NOL_line_94_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	< 100	< 100	NotConv	< 100	< 100	NotConv	< 100	< 100	133.6	Planned Kramer CRAS may indirectly mitigate thermal overload - Further investigation needed / Reduce BESS charging
	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	134.6	Reduce BESS charging
	P1.2_line_39_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2	P1	N-1	< 100	< 100	120.7	< 100	< 100	112.7	< 100	< 100	< 100	
	P1.1_gen_218_Gen ALBAG1 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	103.0	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_219_Gen OCASOG2 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	103.0	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_264_Gen DAGGETT2 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	107.3	< 100	< 100	104.0	< 100	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLO AD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS	
24795 SANDLOT 230 24701 KRAMER 230 1 1	P1.1_gen_308_Gen TOT812_D1_GE 34.5 Unit ID 1 AND P1.2_line_39_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	110.4	< 100	< 100	124.5	< 100	< 100	< 100	Planned Kramer CRAS
	P1.1_gen_190_Gen COLOSEM 13.8 Unit ID 1-3 AND P1.2_line_39_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	118.7	< 100	< 100	110.5	< 100	< 100	< 100	
	P1.1_gen_294_Gen SUNRAY2_G 0.4 Unit ID 1 AND P1.2_line_39_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	119.0	< 100	< 100	110.8	< 100	< 100	< 100	
	P1.1_gen_195_Gen NAVY1_CALGEN 13.8 Unit ID 1 AND P1.2_line_39_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	119.6	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_279_Gen RESURGENCE1 13.8 Unit ID 1 AND P1.2_line_39_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	119.7	< 100	< 100	< 100	< 100	< 100	< 100	
	P4_6_Kramer-Victor No. 2 220 kV and Kramer -Coolwater 220 kV - SLG 15 cycle fault at Kramer 220	P4	Stuck Breaker	< 100	< 100	120.2	< 100	< 100	112.4	< 100	< 100	< 100	
	line_P5_NOL_TC_002_Kramer - Cool Water 220 kV Line	P5	Non-Redundant Relay	< 100	< 100	120.7	< 100	< 100	112.7	< 100	< 100	< 100	
24865 TAP188 115 24723 CONTROL 115 1 1	P1.2_line_6_Line INYOKERN 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	100.3	< 100	< 100	< 100	Bishop RAS
	P2_16_Line TAP189 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
	line_P5_NOL_TC_009_Control - Haiwee - Inyokern 115 kV Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
	line_P5_NOL_TC_022_Inyokern - Control - Haiwee 115 kV Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.1	< 100	< 100	< 100	
	line_P5_TL_NOL_19_P5.b Control-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.1	< 100	< 100	< 100	
	line_P5_TL_NOL_7_P5.b Control-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
	line_P5_TL_NOL_8_P5.b Control-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	
	_NOL_line_143_TAP189-Inyokern & Control-TAP189 115 kV line	P7	DCTL	< 100	< 100	< 100	< 100	< 100	100.3	< 100	< 100	< 100	
24866 TAP189 115 24723 CONTROL 115 1 1	P1.2_line_86_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	104.1	< 100	< 100	< 100	Bishop RAS
	P2_11_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P2-1	Line Section w/o Fault	< 100	< 100	< 100	< 100	< 100	104.1	< 100	< 100	< 100	
	P1.1_gen_226_Gen BISHOP3 2.4 Unit ID 1-2 AND P1.2_line_86_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	100.6	< 100	< 100	< 100	
	P1.1_gen_234_Gen BISHOP4 2.4 Unit ID 1-5 AND P1.2_line_86_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	100.6	< 100	< 100	< 100	
	P1.1_gen_273_Gen BISHOP2 2.4 Unit ID 1 AND P1.2_line_86_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	101.3	< 100	< 100	< 100	
	line_P5_NOL_TC_008_Control - Coso - Haiwee - Inyokern 115 kV Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.6	< 100	< 100	< 100	
	line_P5_NOL_TC_021_Inyokern - Control - Coso - Haiwee 115 kV Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	104.1	< 100	< 100	< 100	
	line_P5_TL_NOL_17_P5.b Control-Coso-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	104.1	< 100	< 100	< 100	
	line_P5_TL_NOL_18_P5.b Control-Coso-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	104.1	< 100	< 100	< 100	
	line_P5_TL_NOL_6_P5.b Control-Coso-Haiwee-Inyokern 115 kv Line	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	100.6	< 100	< 100	< 100	
	P1.2_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1 AND P1.2_line_86_Line TAP710 115.0 to INYOKERN 115.0 Circuit 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	135.9	< 100	< 100	< 100	
	_NOL_line_142_TAP188-TAP710-Coso-Inyokern 115 kV T/L	P7	DCTL	< 100	< 100	< 100	< 100	< 100	101.6	< 100	< 100	< 100	
	Base Case	P0	Base Case	< 100	< 100	< 100	< 100	< 100	100.4	< 100	< 100	< 100	Ivanpah-Control TLRR Project Segment 1 will rebuild the 115 kV line before 2035 (ACCC Dove – 144 MVA Normal) / Congestion Management
25500 CALCITE 230 24085 LUGO 230 1 1	P1.2_line_8_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	105.8	< 100	< 100	< 100	Rely on congestion management and Calcite cRAS
	_NOL_line_101_Line ELDORDO 500.0 to LUGO 500.0 Circuit 1 & Line LUGO 500.0 to MOHAVE 500.0 Circuit 1	P6	N-1-1	< 100	< 100	100.5	< 100	< 100	111.5	< 100	< 100	< 100	System adjustments after first contingency
	P1.2_line_10_Line PISGAH 230.0 to CALCITE 230.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	114.6	< 100	< 100	< 100	Planned Calcite CRAS
	P1.2_line_9_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P1	N-1	< 100	< 100	< 100	< 100	< 100	115.9	< 100	< 100	< 100	
	P1.1_gen_258_Gen DAGGETT3 34.5 Unit ID 1 AND P1.2_line_9_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	101.8	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_197_Gen HIBEDST1 20.0 Unit ID 1 AND P1.2_line_9_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	102.3	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_254_Gen All HDPP 15.0 Unit ID 1 AND P1.2_line_9_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	106.7	< 100	< 100	< 100	< 100	< 100	< 100	
	P1.1_gen_220_Gen MOJAVE PRJT 16.8 Unit ID 1 AND P1.2_line_9_Line PISGAH 230.0 to LUGO 230.0 Circuit 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	118.1	< 100	< 100	< 100	
	P4_3_Lugo - Pegah No. 1 220 kV and Lugo - Victor No. 3 220 kV - SLG 15 cycle fault at Lugo 220	P4	Stuck Breaker	< 100	< 100	100.1	< 100	< 100	116.1	< 100	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions	
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable		S3_2027-SprOP_BESS
TORTILLA 115 kV	line_NOL_P1_04_Line COLWATER-Tortilla-Segs2 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Close Capacitors at Tortilla 115kV pre contingency
ACCELERATE 115 kV	line_NOL_P1_04_Line COLWATER-Tortilla-Segs2 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	P12_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	P12_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	P2_6_Line TORTILLA 115.0 to TAP705 115.0 Circuit 1	P2-1	Line Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	P2_6_Line TORTILLA 115.0 to TAP705 115.0 Circuit 1	P2-1	Line Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Future Downs Capacitor will improve low voltage
DOWNNS 115 kV	P11.1_gen_182_Gen NAVY1_CALGEN 13.8 Unit ID 1 AND P12_line_61_Line INYOKERN 115.0 to DOWNNS 115.0 Circuit 1	P3	G-1/N-1	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ROADWAY 115 kV	P1.1_gen_167_Gen BLDMSA1&2 0.9 Unit ID 1 AND P12_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	0.85	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	
HAMLIN 115 kV	P1.1_gen_167_Gen BLDMSA1&2 0.9 Unit ID 1 AND P12_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	0.85	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	Lugo-Victor-Kramer upgrade
HAMLIN 115 kV	P11.1_gen_209_Gen BLDMSA1&2 0.9 Unit ID 1 AND P12_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	
ROADWAY 115 kV	P11.1_gen_209_Gen BLDMSA1&2 0.9 Unit ID 1 AND P12_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	P11.1_gen_233_Gen RESURGENCE2 13.8 Unit ID 1 AND P12_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	System adjustments after first contingency (Close Capacitors at Tortilla 115kV)
ACCELERATE 115 kV	P11.1_gen_233_Gen RESURGENCE2 13.8 Unit ID 1 AND P12_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	P11.1_gen_234_Gen RESURGENCE1 13.8 Unit ID 1 AND P12_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	P11.1_gen_234_Gen RESURGENCE1 13.8 Unit ID 1 AND P12_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	System adjustments after first contingency (Open Shunt Reactor at Inyo 230kV)
INYO 230 kV	P1.1_gen_192_Gen OXBOW 13.80 Unit ID 1 AND P12_line_1_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.90	
INYO 230 kV	P11.1_gen_194_Gen OXBOW G1 13.8 Unit ID 1 AND P12_line_113_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 230 kV	P11.1_gen_212_Gen OXBOW G1 13.8 Unit ID 1 AND P12_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Close in Capacitors at Taortilla 115 kV pre contingency
TORTILLA 115 kV	line_P5_BD_002_Cool Water 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	line_P5_BD_002_Cool Water 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	line_P5_NOL_TC_033_Tortilla - Cool Water - SEGS 2 115 kv Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	line_P5_NOL_TC_033_Tortilla - Cool Water - SEGS 2 115 kv Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	line_P5_TL_NOL_35_P5.b Tortilla-Cool Water-SEGS2 115 kv Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Redundant Protection
ACCELERATE 115 kV	line_P5_TL_NOL_35_P5.b Tortilla-Cool Water-SEGS2 115 kv Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 230 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
DWP INYO 230 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
DOWNNS 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CAL GEN 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Redundant Protection
SEARLES 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
SOUTHBAS 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.76	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.68	0.9 < V < 1.05	0.9 < V < 1.05	
CALCITY 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.77	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.69	0.9 < V < 1.05	0.9 < V < 1.05	
TAP482 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.77	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.69	0.9 < V < 1.05	0.9 < V < 1.05	
TAP481 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.77	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.69	0.9 < V < 1.05	0.9 < V < 1.05	
EDWARDS 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.77	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.69	0.9 < V < 1.05	0.9 < V < 1.05	
HOLGATE 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.77	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.69	0.9 < V < 1.05	0.9 < V < 1.05	
ROCKET TEST 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.85	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.76	0.9 < V < 1.05	0.9 < V < 1.05	System adjustments after first contingency
RP_Kramer_H 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
KRAMER 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.85	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.08	0.76	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	line_P5_BD_004_Tortilla 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	
TORTILLA 115 kV	line_P5_BD_004_Tortilla 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.14	0.9 < V < 1.05	0.9 < V < 1.05	
ACCELERATE 115 kV	P12_line_30_Line KRAMER 115.0 to ACCELERATE 115.0 Circuit 1 AND P13_line_144_Line COLWATER 115.0 to COLWATER 230.0 Circuit 1 COLWATER_1T_12.00	P6	N-1-1	0.9 < V < 1.05	0.80	0.9 < V < 1.05	0.79	0.9 < V < 1.05	0.9 < V < 1.05	0.79	0.9 < V < 1.05	0.9 < V < 1.05	System adjustments after first contingency (Open Shunt Reactor at Inyo 230kV)
INYO 230 kV	P12_line_5_Line TAP710 115.0 to CONTROL 115.0 Circuit 1 AND line_NOL_P1_31_Line INYO 230.0 to DWP INYO 230.0 Circuit 1	P6	N-1-1	0.9 < V < 1.05	0.90	0.89	0.89	0.9 < V < 1.05	0.86	0.90			

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS		
BAKER 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.77	Addition of reactive support recommended
DUNNSIDE 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.73	
BAKER 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.75	
BAKER 115 kV	.NOL_line_97_Line KRAMER - 230.0 to VICTOR 230.0 Circuit 1 & Line KRAMER 230.0 to VICTOR 230.0 Circuit 2	P7	DCTL	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.85	0.9 < V < 1.05		
DUNNSIDE 115 kV	.NOL_line_97_Line KRAMER - 230.0 to VICTOR 230.0 Circuit 1 & Line KRAMER 230.0 to VICTOR 230.0 Circuit 2	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05		
BAKER 115 kV	.NOL_tran_107_Tran LUGO - 500.00 to LUGO 230.00 Circuit 2LUGO 1T 13.80 & Tran LUGO 500.00 to LUGO	P7	DCTL	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05		
DUNNSIDE 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.73	
BAKER 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.75	
BAKER 115 kV	P7_6_Line KRAMER - VICTOR 230.0 ck 1 Line KRAMER - VICTOR 230.0 ck 2	P7	DCTL	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.85	0.9 < V < 1.05		
DUNNSIDE 115 kV	P7_6_Line KRAMER - VICTOR 230.0 ck 1 Line KRAMER - VICTOR 230.0 ck 2	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05		
TORTILLA 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.85	
TAP705 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
SEGS2 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
GALE 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
COLWATER 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
TIEFORT 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
HIDDEN SPRIN 115 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
COLWATER 230 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	
OCASO 230 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	
SANDLOT 230 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	
ALBA 230 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	
TOT981_HV 230 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	
SILVR_SPRNGS 230 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	
CUMBERLAND 230 kV	.NOL_line_94_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to KRAMER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	
TORTILLA 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.82	
TAP705 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
SEGS2 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
GALE 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	Reduce BESS charging
COLWATER 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
TIEFORT 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
HIDDEN SPRIN 115 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.84	
COLWATER 230 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
SILVR_SPRNGS 230 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	
CUMBERLAND 230 kV	.NOL_line_95_Line KRAMER - 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	
TORTILLA 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.82	
TAP705 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
SEGS2 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
GALE 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
COLWATER 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
TIEFORT 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.83	
HIDDEN SPRIN 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.84	
COLWATER 230 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	
SILVR_SPRNGS 230 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	
CUMBERLAND 230 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	
OXBOW B 230 kV	.NOL_line_144_Kramer-Inyokem-Randsburg No.3 & Kramer-Inyokem-Randsburg No.1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05							

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS		
DWP INYO 230 kV	line_NOL_line_144_Kramer-Inyokern-Randsburg No.3 & Kramer-Inyokern-Randsburg No.1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP4 115 kV	line_NOL_P1_03_Line Control N-1: CONTROL- Casa Diablo-Sherwin TAP704 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.07	1.06	1.06	1.06	1.05	1.07	1.06	1.06		
BISHOP3 115 kV	line_NOL_P1_03_Line Control N-1: CONTROL- Casa Diablo-Sherwin TAP704 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.07	1.06		
BSPHYD34 115 kV	line_NOL_P1_03_Line Control N-1: CONTROL- Casa Diablo-Sherwin TAP704 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	1.05	1.06	1.07	1.06		
OXBOW B 115 kV	line_NOL_P1_03_Line Control N-1: CONTROL- Casa Diablo-Sherwin TAP704 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.07		
BISHOP4 115 kV	line_NOL_P1_28_Line CONTROL 115.0 to INYO 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
OXBOW B 115 kV	line_NOL_P1_28_Line CONTROL 115.0 to INYO 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05		
BISHOP4 115 kV	line_NOL_P1_30_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.07	1.06	1.06		
BISHOP3 115 kV	line_NOL_P1_30_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	1.06		
BSPHYD34 115 kV	line_NOL_P1_30_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	1.06		
OXBOW B 115 kV	line_NOL_P1_30_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.07	1.06		
RUSH 115 kV	P1.1_gen_191_Gen MAMMOTH 4.16 Unit ID 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
LEE VINE 115 kV	P1.1_gen_191_Gen MAMMOTH 4.16 Unit ID 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.2_line_3_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.07	1.06	1.06	0.9 < V < 1.05	1.05	1.07	0.9 < V < 1.05	0.9 < V < 1.05		
BSPHYD34 115 kV	P1.2_line_3_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	1.06	1.06	0.9 < V < 1.05	1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05		
OXBOW B 115 kV	P1.2_line_3_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP3 115 kV	P1.2_line_3_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	1.06	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05		
OXBOW B 115 kV	P1.2_line_53_Line CONTROL 115.0 to INYO 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.2_line_54_Line CONTROL 115.0 to INYO 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.2_line_55_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06		
BISHOP3 115 kV	P1.2_line_55_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06		
BSPHYD34 115 kV	P1.2_line_55_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06		
OXBOW B 115 kV	P1.2_line_55_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.06		
BISHOP3 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	0.9 < V < 1.05	0.9 < V < 1.05		
BSPHYD34 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05		
OXBOW B 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP3 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to RUSH 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06		
OXBOW B 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to RUSH 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06		
BSPHYD34 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to RUSH 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06		
BISHOP4 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to RUSH 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06		
BISHOP4 115 kV	P1.2_line_57_Line CSA DIAB 115.0 to RUSH 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP3 115 kV	P1.2_line_60_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.2_line_60_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BSPHYD34 115 kV	P1.2_line_60_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
OXBOW B 115 kV	P1.2_line_60_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.2_line_69_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06		
BISHOP3 115 kV	P1.2_line_69_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.06		
BSPHYD34 115 kV	P1.2_line_69_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.06		
OXBOW B 115 kV	P1.2_line_69_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.07		
BISHOP4 115 kV	P1.3_tran_129_Tran INYO 0.00 115.00 to INYO PS 115.00 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05		
OXBOW B 115 kV	P1.3_tran_129_Tran INYO 0.00 115.00 to INYO PS 115.00 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.3_tran_134_Tran INYO 0.00 115.00 to INYO PS 115.00 Circuit 1	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05		
BISHOP4 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06		
BSPHYD34 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06		
LEE VINE 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06		

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS	
OXBOW B 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	Per CAISO Procedure 3100B, post-contingency voltage is within operating limits
RUSH 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	
BISHOP3 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
LEE VINE 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
BISHOP4 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
BISHOP3 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
BSPHYD34 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
OXBOW B 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.06	
RUSH 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	
RUSH 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.05	1.06	
LEE VINE 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.07	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.07	
OXBOW B 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	1.05	
BISHOP3 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
BSPHYD34 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
BISHOP4 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
BISHOP4 115 kV	P1.4_shunt_203_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
BISHOP4 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
BSPHYD34 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
LEE VINE 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
OXBOW B 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
RUSH 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	
BISHOP3 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
BISHOP3 115 kV	P1.4_shunt_291_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_291_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BSPHYD34 115 kV	P1.4_shunt_291_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_291_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	P1.4_shunt_291_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP3 115 kV	P1.4_shunt_292_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_292_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	0.9 < V < 1.05	0.9 < V < 1.05	
BSPHYD34 115 kV	P1.4_shunt_292_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_292_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	P1.4_shunt_292_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_293_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_293_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
RUSH 115 kV	P1.4_shunt_293_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_294_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP3 115 kV	P1.4_shunt_295_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_295_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BSPHYD34 115 kV	P1.4_shunt_295_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_295_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	P1.4_shunt_295_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
RUSH 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BSPHYD34 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS	
BSPHYD34 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
RUSH 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP3 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
RUSH 115 kV	P1.4_shunt_314_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_314_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
RUSH 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BSPHYD34 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP3 115 kV	P1.4_svd_304_SVD INYO 220	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	P1.4_svd_304_SVD INYO 220	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
BSPHYD34 115 kV	P1.4_svd_304_SVD INYO 220	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	P1.4_svd_304_SVD INYO 220	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
LEE VINE 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
RUSH 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
BISHOP3 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	
BSPHYD34 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	1.06	
OXBOW B 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
BISHOP4 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	1.06	
BISHOP4 115 kV	tran_NOL_P1_68_Tran INYO 115.00 to INYO PS 115.00 Circuit 1 0.00	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
OXBOW B 115 kV	tran_NOL_P1_68_Tran INYO 115.00 to INYO PS 115.00 Circuit 1 0.00	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
SEGS2 115 kV	P2_1_Line COLWATER 115.0 to TAP705 115.0 Circuit 1	P2-1	Line Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TAP705 115 kV	P2_1_Line COLWATER 115.0 to TAP705 115.0 Circuit 1	P2-1	Line Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TORTILLA 115 kV	P2_1_Line COLWATER 115.0 to TAP705 115.0 Circuit 1	P2-1	Line Section w/o Fault	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TAP188 115 kV	P2_12_Line TAP710 115.0 to TAP188 115.0 Circuit 1	P2-1	Line Section w/o Fault	1.06	1.06	1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
BISHOP4 115 kV	P2_8_Line TAP704 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	1.06	1.07	1.06	1.06	1.06	1.05	1.07	1.07	1.06	
BISHOP3 115 kV	P2_8_Line TAP704 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.07	1.06	
BSPHYD34 115 kV	P2_8_Line TAP704 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	1.06	1.06	1.06	1.06	1.06	1.05	1.06	1.07	1.06	
OXBOW B 115 kV	P2_8_Line TAP704 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.07	
OXBOW B 230 kV	P1.1_gen_194_Gen OXBOW G1 13.8 Unit ID 1 AND P1.4_shunt_294_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P3	G-1/N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 230 kV	P1.1_gen_212_Gen OXBOW G1 13.8 Unit ID 1 AND P1.4_shunt_315_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
BISHOP4 115 kV	line_P5_NOL_TC_010_Control - Inyo 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	line_P5_NOL_TC_010_Control - Inyo 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
BISHOP4 115 kV	line_P5_NOL_TC_013_Control - Sherwin - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.07	1.06	1.06	1.06	1.05	1.07	1.07	1.06	
BISHOP3 115 kV	line_P5_NOL_TC_013_Control - Sherwin - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.07	1.06	
BSPHYD34 115 kV	line_P5_NOL_TC_013_Control - Sherwin - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	1.05	1.06	1.07	1.06	
OXBOW B 115 kV	line_P5_NOL_TC_013_Control - Sherwin - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.07	
BISHOP4 115 kV	line_P5_NOL_TC_014_Control - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.07	1.06	1.06	
BISHOP3 115 kV	line_P5_NOL_TC_014_Control - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
BSPHYD34 115 kV	line_P5_NOL_TC_014_Control - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
OXBOW B 115 kV	line_P5_NOL_TC_014_Control - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.07	1.06	
TORTILLA 115 kV	line_P5_NOL_TC_018_Cool Water - SEGS - Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS	
TAP705 115 kV	line_P5_NOL_TC_018_Cool Water - SEGS - Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
SEGS2 115 kV	line_P5_NOL_TC_018_Cool Water - SEGS - Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
BISHOP4 115 kV	line_P5_NOL_TC_020_Inyo - Control 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
OXBOW B 115 kV	line_P5_NOL_TC_020_Inyo - Control 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
TAP189 115 kV	line_P5_NOL_TC_022_Inyokern - Control - Haiwee 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.05	1.05	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
TORTILLA 115 kV	line_P5_TL_NOL_13_P5.b Colwater - SEGS-Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TAP705 115 kV	line_P5_TL_NOL_13_P5.b Colwater - SEGS-Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
SEGS2 115 kV	line_P5_TL_NOL_13_P5.b Colwater - SEGS-Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TORTILLA 115 kV	line_P5_TL_NOL_14_P5.b Colwater - SEGS-Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TAP705 115 kV	line_P5_TL_NOL_14_P5.b Colwater - SEGS-Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
SEGS2 115 kV	line_P5_TL_NOL_14_P5.b Colwater - SEGS-Tortilla 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TAP189 115 kV	line_P5_TL_NOL_19_P5.b Control-Haiwee-Inyokern 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.05	1.05	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
TAP189 115 kV	line_P5_TL_NOL_20_P5.b Control-Haiwee-Inyokern 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.05	1.05	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
TORTILLA 115 kV	line_P5_TL_NOL_36_P5.b Tortilla-Cool Water-SEGS2 115 kv Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TAP705 115 kV	line_P5_TL_NOL_36_P5.b Tortilla-Cool Water-SEGS2 115 kv Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
SEGS2 115 kV	line_P5_TL_NOL_36_P5.b Tortilla-Cool Water-SEGS2 115 kv Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	
TAP188 115 kV	_NOL_line_142_TAP188-TAP710-Coso-Inyokern 115 kV T/L	P7	DCTL	1.06	1.06	1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
DOWN5 115 kV	_NOL_line_144_Kramer-Inyokern-Randsburg No.3 & Kramer-Inyokern-Randsburg No.1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CAL GEN 115 kV	_NOL_line_144_Kramer-Inyokern-Randsburg No.3 & Kramer-Inyokern-Randsburg No.1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
SEARLES 115 kV	_NOL_line_144_Kramer-Inyokern-Randsburg No.3 & Kramer-Inyokern-Randsburg No.1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CAL GEN 115 kV	_NOL_line_95_Line KRAMER 230.0 to COLWATER 230.0 Circuit 2 & Line SANDLOT 230.0 to COLWATER 230.0 Circuit 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CAL GEN 115 kV	P7_2_Line KRAMER - COLWATER 230.0 ck 2 Line SANDLOT - COLWATER 230.0 ck 1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	line_NOL_P1_03_Line Control N-1: CONTROL- Casa Diablo-Sherwin TAP704 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	1.05	1.06	1.06	1.06	
CONTROL 115 kV	line_NOL_P1_03_Line Control N-1: CONTROL- Casa Diablo-Sherwin TAP704 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.07	
INYO PS 115 kV	line_NOL_P1_03_Line Control N-1: CONTROL- Casa Diablo-Sherwin TAP704 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	1.05	1.05	1.05	
CONTROL 115 kV	line_NOL_P1_28_Line CONTROL 115.0 to INYO 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
INYO 115 kV	line_NOL_P1_30_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
CONTROL 115 kV	line_NOL_P1_30_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.07	1.06	
INYO PS 115 kV	line_NOL_P1_30_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.2_line_3_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	1.06	1.06	0.9 < V < 1.05	1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.2_line_3_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
INYO PS 115 kV	P1.2_line_3_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.2_line_53_Line CONTROL 115.0 to INYO 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
INYO 115 kV	P1.2_line_55_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	P1.2_line_55_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.06	
CONTROL 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to RUSH 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
CONTROL 115 kV	P1.2_line_56_Line CSA DIAB 115.0 to RUSH 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	
CONTROL 115 kV	P1.2_line_60_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.2_line_60_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO PS 115 kV	P1.2_line_60_Line CSA DIAB 115.0 to CONTROL 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.2_line_69_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	P1.2_line_69_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.07	
INYO PS 115 kV	P1.2_line_69_Line CONTROL 115.0 to CSA DIAB-SHRWN 115.0 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	1.05	
CONTROL 115 kV	P1.3_tran_129_Tran INYO 115.00 to INYO PS 115.00 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRene wable	S3_2027-SprOP_BEBS	
INYO 115 kV	P1.3_tran_129_Tran INYO 115.00 to INYO PS 115.00 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	Per SOB-17 normal operating voltage is 0.991 - 1.113 p.u.
INYO 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	P1.4_shunt_200_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
INYO 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.07	1.06	
INYO PS 115 kV	P1.4_shunt_201_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	1.05	
INYO 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	
CONTROL 115 kV	P1.4_shunt_202_Line-Shunt CSA DIAB-RUSH CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	1.05	
INYO 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	P1.4_shunt_204_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	P1.4_shunt_291_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.4_shunt_291_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.4_shunt_292_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.4_shunt_292_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.4_shunt_295_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.4_shunt_295_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO PS 115 kV	P1.4_shunt_312_Line-Shunt CONTROL-CSA DIAB CAP 115.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO PS 115 kV	P1.4_shunt_313_Line-Shunt OXBOWB-OXBOWA CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO PS 115 kV	P1.4_shunt_316_Line-Shunt CONTROL-TAP704 CAP 230.0	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	P1.4_svd_304_SVD INYO 220	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO 115 kV	P1.4_svd_304_SVD INYO 220	P1	N-1	0.9 < V < 1.05	1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO PS 115 kV	P1.4_svd_304_SVD INYO 220	P1	N-1	0.9 < V < 1.05	1.06	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	
INYO PS 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	1.06	0.9 < V < 1.05	1.07	0.9 < V < 1.05	1.06	1.06	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
INYO 115 kV	P1.4_svd_325_SVD INYO 220	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	1.06	1.06	
CONTROL 115 kV	tran_NOL_P1_68_Tran INYO 115.00 to INYO PS 115.00 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
INYO 115 kV	tran_NOL_P1_68_Tran INYO 115.00 to INYO PS 115.00 Circuit 1	P1	N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
INYO 115 kV	P2_8_Line TAP704 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	1.06	1.06	1.06	1.06	1.06	1.05	1.06	1.07	1.06	Per SOB-17 normal operating voltage is 1.052 - 1.113 p.u.
CONTROL 115 kV	P2_8_Line TAP704 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.07	
INYO PS 115 kV	P2_8_Line TAP704 115.0 to CONTROL 115.0 Circuit 1	P2-1	Line Section w/o Fault	0.9 < V < 1.05	1.05	1.06	1.05	1.05	0.9 < V < 1.05	1.05	1.05	1.06	
CONTROL 115 kV	line_P5_NOL_TC_010_Control - Inyo 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
INYO 115 kV	line_P5_NOL_TC_013_Control - Sherwin - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	1.05	1.06	1.07	1.06	
CONTROL 115 kV	line_P5_NOL_TC_013_Control - Sherwin - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.07	1.07	
INYO PS 115 kV	line_P5_NOL_TC_013_Control - Sherwin - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	1.05	1.06	1.05	1.05	0.9 < V < 1.05	1.05	1.05	1.06	
INYO 115 kV	line_P5_NOL_TC_014_Control - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.06	1.06	
CONTROL 115 kV	line_P5_NOL_TC_014_Control - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	1.06	1.06	1.06	1.06	1.06	0.9 < V < 1.05	1.06	1.07	1.06	
INYO PS 115 kV	line_P5_NOL_TC_014_Control - Casa Diablo 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	1.06	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
CONTROL 115 kV	line_P5_NOL_TC_020_Inyo - Control 115 kV Line	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	
INYO KERN 115 kV	line_P5_BD_003_Kramer 115 kv East Bus	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
INYO KERN 115 kV	_NOL_line_144_Kramer-Inyokem-Randsburg No.3 & Kramer-Inyokem-Randsburg No.1	P7	DCTL	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewa-ble	S3_2027-SprOP_BESS			
ACCELERATE 115 kV	P1,2_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P1	N-1	< 8	< 8	< 8	11.56	< 8	< 8	< 8	< 8	< 8	< 8	Close capacitors at Tortilla 115kV pre-contingency	
TORTILLA 115 kV	P1,2_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P1	N-1	< 8	< 8	< 8	12.08	< 8	< 8	< 8	< 8	< 8	< 8		
INYO 230 kV	P1,2_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P1	N-1	< 8	< 8	9.55	< 8	< 8	9.08	< 8	< 8	< 8	< 8	Recommended to add RAS/OP to open Inyo 230kV Shunt Reactor with loss of SCE-LADWP tie	
ROADWAY 115 kV	P1,1_gen_167_Gen BLDMSA1&2 0.9 Unit ID 1 AND P1,2_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	13.06	< 8	< 8	< 8	< 8	< 8	< 8	11.40	< 8	< 8		
HAMLIN 115 kV	P1,1_gen_167_Gen BLDMSA1&2 0.9 Unit ID 1 AND P1,2_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	13.06	< 8	< 8	< 8	< 8	< 8	< 8	11.40	< 8	< 8	Lugo-Victor-Kramer upgrade	
HAMLIN 115 kV	P1,1_gen_209_Gen BLDMSA1&2 0.9 Unit ID 1 AND P1,2_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	< 8	9.62	< 8	< 8	< 8	< 8	9.38	< 8	< 8	< 8		
ROADWAY 115 kV	P1,1_gen_209_Gen BLDMSA1&2 0.9 Unit ID 1 AND P1,2_line_23_Line VICTOR 115.0 to ROADWAY 115.0 Circuit 1	P3	G-1/N-1	< 8	9.61	< 8	< 8	< 8	< 8	9.38	< 8	< 8	< 8	System adjustments after first contingency	
DOWNS 115 kV	P1,1_gen_182_Gen NAVY1 CALGEN 13.8 Unit ID 1 AND P1,2_line_61_Line INYOKERN 115.0 to DOWNS 115.0 Circuit 1	P3	G-1/N-1	8.16	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8	< 8		
ACCELERATE 115 kV	P1,1_gen_233_Gen RESURGENCE2 13.8 Unit ID 1 AND P1,2_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	< 8	< 8	< 8	11.81	< 8	< 8	< 8	< 8	< 8	< 8	System adjustments after first contingency / Close capacitors at Tortilla 115kV pre-contingency	
TORTILLA 115 kV	P1,1_gen_233_Gen RESURGENCE2 13.8 Unit ID 1 AND P1,2_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	< 8	< 8	< 8	12.34	< 8	< 8	< 8	< 8	< 8	< 8		
ACCELERATE 115 kV	P1,1_gen_234_Gen RESURGENCE1 13.8 Unit ID 1 AND P1,2_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	< 8	< 8	< 8	12.01	< 8	< 8	< 8	< 8	< 8	< 8	System adjustments after first contingency / Open Shunt Reactor at Inyo 230kV	
TORTILLA 115 kV	P1,1_gen_234_Gen RESURGENCE1 13.8 Unit ID 1 AND P1,2_line_1_Line COLWATER 115.0 to TORTILLA 115.0 Circuit 1	P3	G-1/N-1	< 8	< 8	< 8	12.55	< 8	< 8	< 8	< 8	< 8	< 8		
INYO 230 kV	P1,1_gen_192_Gen OXBOW 13.80 Unit ID 1 AND P1,2_line_1_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	8.45	< 8	< 8	< 8	8.91	< 8	< 8	< 8	8.65	< 8	System adjustments after first contingency / Open Shunt Reactor at Inyo 230kV	
	P1,1_gen_194_Gen OXBOW G1 13.8 Unit ID 1 AND P1,2_line_113_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	< 8	8.97	< 8	8.17	< 8	< 8	8.98	< 8	< 8	< 8		
	P1,1_gen_212_Gen OXBOW G1 13.8 Unit ID 1 AND P1,2_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	< 8	< 8	10.99	< 8	< 8	< 8	< 8	< 8	< 8	< 8		
	P1,1_gen_217_Gen POOLE 7.2 Unit ID 1 AND P1,2_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	< 8	< 8	9.65	< 8	< 8	< 8	< 8	< 8	< 8	< 8		
	P1,1_gen_223_Gen CSA DIAB 4 12.5 Unit ID 1 AND P1,2_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	< 8	< 8	9.80	< 8	< 8	< 8	< 8	< 8	< 8	< 8		
	P1,1_gen_226_Gen BISHOP3 2.4 Unit ID 1-2 AND P1,2_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	< 8	< 8	9.69	< 8	< 8	< 8	< 8	< 8	< 8	< 8		
	P1,1_gen_234_Gen BISHOP4 2.4 Unit ID 1-5 AND P1,2_line_120_Line DWP INYO 230.0 to INYO 230.0 Circuit 1	P3	G-1/N-1	< 8	< 8	9.81	< 8	< 8	< 8	< 8	< 8	< 8	< 8		

Contingency	Category	Category Description	Transient Stability Performance								Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios				
			B2_2030-SmrPk	B3_2035-SmrPk	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S3_2027-SprOP_BESS			
Kramer-Sandlot 230 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Coolwater-Sandlot 230 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer-Coolwater 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer-Tortilla 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer-Accelerate 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Accelerate-Tortilla 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Coolwater-Segs 2-Tortilla 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Ivanpah-Baker-Coolwater-Dunn Siding- Mountain Pass 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer-Inyokern-Randsburg No. 1 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer-Inyokern-Randsburg No. 3 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern-Searles 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern-Downs 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Downs-Searles 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control-Coso-Haiwee-Inyokern 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control-Haiwee-Inyokern 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control-Inyo 115 kv TL (Path 60)	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control-Casa Diablo 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control-Casa Diablo-Sherwin 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control-Silver Peak A 55 kv TL (Path 52)	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control-Silver Peak C 55 kv TL (Path 52)	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Lugo 1AA or 2AA 500230 kv Transformer Bank	P1	N-1	WECC Criteria Not Met	Diverge	No Issues	No Issues	WECC Criteria Not Met	No Issues	Mojave Desert RAS		
Victor 1A, 2A, 3A, or 4A 230115 kv Transformer Bank	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer 1A or 2A 230115 kv Transformer Bank	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Coolwater 1A 230115 kv Transformer Bank	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control 1B or 2B 11555 kv Transformer Bank	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyo - Control 115 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Ivanpah 3A or 4A 230115 kv Transformer Bank	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer-Victor No. 1 230 kv TL	P1	N-1	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	No Issues	No Issues	No Issues	Mojave Desert RAS		
Kramer-Coolwater 230 kv TL	P1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Ivanpah-Baker-Coolwater-Dunn Siding- Mountain Pass 115 kv TL	P2-1	Line Section w/o Fault	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Ivanpah-Baker-Coolwater-Dunn Siding- Mountain Pass 115 kv TL	P2-1	Line Section w/o Fault	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
HDPP Units 1, 2, 3 & ST Generation (POI: Victor 230 kv Bus) out	P3	G-1/N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
HDPP Units 1, 2, 3 & ST Generation (POI: Victor 230 kv Bus) out	P3	G-1/N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
HDPP Units 1, 2, 3 & ST Generation (POI: Victor 230 kv Bus) out	P3	G-1/N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Casa Diablo IV Generation (POI: Casa Diablo 115 kv Bus) out of s	P3	G-1/N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Lugo - Rancho Vista 500 kv and Lugo - Vincent No. 1 500 kv - SLG	P4	Stuck Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Lugo - Victorville 500 kv and Lugo - Vincent No.2 500 kv - SLG 15	P4	Stuck Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Lugo - Pisgah No. 1 220 kv and Lugo - Victor No. 3 220 kv - SLG	P4	Stuck Breaker	WECC Criteria Not Met	No Issues	No Issues	No Issues	No Issues	No Issues	HDPP RAS		
Lugo - Victor No. 4 220 kv and Lugo 2AA Bank - SLG 15 cycle fa	P4	Stuck Breaker	WECC Criteria Not Met	No Issues	No Issues	No Issues	No Issues	No Issues	HDPP RAS		
Kramer - Tortilla 115 kv and Kramer - Inyokern - Randsburg No. 3	P4	Stuck Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Sandlot 220 kv and Coolwater - Sandlot 220 kv - SLG 15	P4	Stuck Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer- Victor No. 2 220 kv and Kramer -Coolwater 220 kv - SLG	P4	Stuck Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Coolwater - Kramer 115 kv and Kramer -Victor 115 kv - SLG 15 c	P4	Stuck Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Sunglen 115 kv and Kramer -Roadway 115 kv - SLG 15 c	P4	Stuck Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control 115 kv East Bus	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Cool Water 115 kv East Bus	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer 115 kv East Bus	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Tortilla 115 kv East Bus	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control 55 kv Bus	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern 115 kv Bus	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
P5.3.13c Kramer 230 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Sandlot 230 kv	P5	Non-Redundant Relay	No Issues	No Issues	WECC Criteria Not Met	No Issues	No Issues	No Issues	Add Redundant Relay		
P5.3.13c Victor 230 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Control 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Cool Water 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Inyokern 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Kramer 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Tortilla 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Victor 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Cool Water 220 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Ivanpah 220 kv	P5	Non-Redundant Relay	No Issues	No Issues	WECC Criteria Not Met	No Issues	No Issues	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Ivanpah 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Roadway 115 kv	P5	Non-Redundant Relay	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Add Redundant Relay		
P5.3.13c Control 55 kv	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - BLM West 220 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Cool Water 220 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - LSP 220 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Victor No. 1 220 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Victor No. 2 220 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Victor - Lugo No. 1 220 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Victor - Lugo No. 2 220 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control - Coso - Haiwee - Inyokern 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control - Haiwee - Inyokern 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control - Inyo 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control No. 1 Transformer	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control No. 3 Transformer	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control - Sherwin - Casa Diablo 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Control - Casa Diablo 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Cool Water - Baker-Dunn Siding-Ivanpah - Mt. Pass 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Cool Water - Gale 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Cool Water - Kramer 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Cool Water - SEGs - Tortilla 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Cool Water - Tiefert 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyo - Control 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern - Control - Coso - Haiwee 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern - Control - Haiwee 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern - Downs 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern - Kramer - Randsburg No. 1 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern - Kramer - Randsburg No. 3 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Inyokern - Searles 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Cool Water 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Inyokern - Randsburg No. 1 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Inyokern - Randsburg No. 3 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Roadway 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Tortilla 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Kramer - Victor 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Tortilla - Kramer 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Victor - Kramer 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
Victor - Roadway 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
P5.b BLM West - Kramer 230 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
P5.b BLM West - Kramer 230 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
P5.b LUZ LSP - Kramer 230 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		
P5.b LUZ LSP - Kramer 230 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation		

Contingency	Category	Category Description	Transient Stability Performance							Potential Mitigation Solutions
			Baseline Scenarios				Sensitivity Scenarios			
			B2_2030-SmrPk	B3_2035-SmrPk	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S3_2027-SprOP_BESS		
P5.b Coso-Halwee-Inyokern - Control 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Coso-Halwee-Inyokern - Control 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Halwee-Inyokern - Control 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Halwee-Inyokern - Control 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Colwater - Baker-Dunn Siding-Ivanpah-Mt. Pass 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Colwater - Baker-Dunn Siding-Ivanpah-Mt. Pass 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer - Colwater 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer - Colwater 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Colwater - SEGs-Tortilla 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Colwater - SEGs-Tortilla 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Colwater - Tiefert 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Colwater - Tiefert 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Coso-Halwee-Control - Inyokern 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Coso-Halwee-Control - Inyokern 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Halwee-Control - Inyokern 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Halwee-Control - Inyokern 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Inyokern - Downs 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Inyokern - Downs 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Inyokern - Downs 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Inyokern-Randsburg No.1 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Inyokern-Randsburg No.1 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Inyokern-Randsburg No.3 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Inyokern-Randsburg No.3 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Inyokern-Searles 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Inyokern-Searles 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Roadway 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Roadway 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Victor 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Victor 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Tortilla-Cool Water-SEG2 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Tortilla-Cool Water-SEG2 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Tortilla 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
P5.b Kramer-Tortilla 115 kv Line	P5	Non-Redundant Relay	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Lugo-Pisgah No. 1 and No. 2 230 kV T/L	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Calotte-Lugo 230 kV T/L and Lugo-TOT1080 230 kV T/L	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Lugo 1AA or 2AA 500/230 kV Transformer Bank and Calotte-Lugo	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Lugo 1AA and 2AA 500/230 kV Transformer Bank	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	Unstable	Mojave Desert RAS	
Coolwater-Segs 2-Tortilla 115 kV T/L and Kramer-Coolwater 230 kV	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Coolwater 1A 230/115 kV Transformer Bank and Kramer-Accelerator 1A 230/115 kV Transformer Bank	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Control-Coso-Halwee-Inyokern 115 kV T/L and Kramer-Inyokern-Randsburg 115 kV T/L	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	Unstable	Bishop RAS	
Kramer 1A or 2A 230/115 kV Transformer Bank and Kramer-Victor 115 kV T/L	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Kramer-Sandiot 230 kV T/L and Coolwater 1A 230/115 kV Transformer Bank	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Ivanpah 3A or 4A 230/115 kV Transformer Bank and Coolwater-Sandiot 230 kV T/L	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Kramer-Victor No. 1 and No. 2 230 kV T/L	P6	N-1-1	Unstable	No Issues	No Issues	No Issues	Unstable	WECC Criteria Not Met	Mojave Desert RAS	
Kramer-Inyokern-Randsburg No. 1 115 kV T/L and Kramer-Inyokern-Randsburg 115 kV T/L (Path 60)	P6	N-1-1	No Issues	No Issues	Unstable	Unstable	No Issues	Unstable	System adjustments after first contingency	
Control-Inyo 115 kV T/L (Path 60) and Control-Coso-Halwee-Inyokern 115 kV T/L	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Lugo - Victor No. 1 and No. 2 230 kV Lines - SLG 15 cycle fault at Victor	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Lugo - Victor No. 3 and No. 4 230 kV Lines - SLG 15 cycle fault at Victor	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Kramer - Victor No. 1 and No. 2 230 kV Lines - SLG 15 cycle fault at Victor	P7	DCTL	Unstable	No Issues	No Issues	No Issues	Unstable	WECC Criteria Not Met	Mojave Desert RAS	
Kramer- Victor 115 kV and Victor - Roadway 115 kV - SLG 15 cycle fault at Victor	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Victor - Roadway No. 1 and No. 2 115 kV - SLG 15 cycle fault at Victor	P7	DCTL	No Issues	No Issues	No Issues	WECC Criteria Not Met	No Issues	No Issues	Planned Kramer CRAS	
Kramer- Victor 115 kV and Kramer - Roadway 115 kV - SLG 15 cycle fault at Victor	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Kramer - Sandiot 230 kV and Kramer - Coolwater 230 kV - SLG 15 cycle fault at Victor	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation	
Coolwater- Sandiot 230 kV and Kramer - Coolwater 230 kV - SLG 15 cycle fault at Victor	P7	DCTL	No Issues	Unstable	No Issues	No Issues	No Issues	No Issues	Planned Kramer CRAS	
Control - Coso - Halwee - Inyokern 115 kV and Control - Halwee - Inyokern 115 kV	P7	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	Unstable	Bishop RAS	



Worst Contingency	Category	Category Description	Amount of Load Drop (MW)									Potential Mitigation Solutions
			B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS	

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

2025-2026 ISO Reliability Assessment - Final Study Results

Study Area: SCE North of Lugo

Single Source Substation with more than 100 MW Load



Substation	Load Served (MW)									Potential Mitigation Solutions
	B1_2027-SmrPk	B2_2030-SmrPk	B3_2035-SmrPk	B5_2030-SmrOP	B7_2027-SprOP	B8_2035-SprOP	S1_2030-SmrPk_HLOAD	S2_2027-SmrPk_HRenewable	S3_2027-SprOP_BESS	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
24087 MAGUNDEN 230 24115 PASTORIA 230 1 1	P6.1.1_162_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 2 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	102.9	< 100	< 100	< 100	< 100	145.0	< 100	147.3	178.8	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_167_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 2 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	129.3	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_168_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 2 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	110.2	< 100	< 100	130.5	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_174_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	114.4	< 100	< 100	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_198_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 2 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	113.7	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_245_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	129.8	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_246_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	110.5	< 100	< 100	130.9	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_252_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	114.8	< 100	< 100	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_276_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	114.1	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
24087 MAGUNDEN 230 24115 PASTORIA 230 2 1	P6.1.1_119_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	114.4	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_245_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	131.2	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_246_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	111.6	< 100	< 100	132.3	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_252_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	116.0	< 100	< 100	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_276_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	115.3	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_83_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 3	P6	N-1-1	103.3	< 100	< 100	< 100	< 100	145.6	< 100	147.9	179.5	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_88_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	130.1	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_89_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	110.8	< 100	< 100	131.3	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_95_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 1 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	115.1	< 100	< 100	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
24087 MAGUNDEN 230 24115 PASTORIA 230 3 1	P6.1.1_82_P6.1.1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 1 Line MAGUNDEN 230.0 to PASTORIA 230.0 Circuit 2	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	102.1	< 100	103.8	125.9	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
24087 MAGUNDEN 230 24153 VESTAL 230 1 1	P6.1.1_321_P6.1.1 Line MAGUNDEN 230.0 to SPRINGVL 230.0 Circuit 1 Line MAGUNDEN 230.0 to VESTAL 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	101.7	< 100	< 100	< 100	System re-dispatch after initial contingency
	P6.1.1_397_P6.1.1 Line MAGUNDEN 230.0 to SPRINGVL 230.0 Circuit 2 Line MAGUNDEN 230.0 to VESTAL 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	101.6	< 100	< 100	< 100	System re-dispatch after initial contingency
	P6.1.1_555_P6.1.1 Line MAGUNDEN 230.0 to VESTAL 230.0 Circuit 2 Line SPRINGVL 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	116.1	< 100	< 100	< 100	System re-dispatch after initial contingency
	P6.1.1_556_P6.1.1 Line MAGUNDEN 230.0 to VESTAL 230.0 Circuit 2 Line SPRINGVL 230.0 to BIG CRK4 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	108.1	< 100	< 100	< 100	System re-dispatch after initial contingency
	P6.1.1_575_P6.1.1 Line MAGUNDEN 230.0 to VESTAL 230.0 Circuit 2 Line BIG CRK4 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	101.9	< 100	< 100	< 100	System re-dispatch after initial contingency
24087 MAGUNDEN 230 24153 VESTAL 230 2 1	P6.1.1_481_P6.1.1 Line MAGUNDEN 230.0 to VESTAL 230.0 Circuit 1 Line SPRINGVL 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	108.0	< 100	< 100	< 100	System re-dispatch after initial contingency
	P6.1.1_482_P6.1.1 Line MAGUNDEN 230.0 to VESTAL 230.0 Circuit 1 Line SPRINGVL 230.0 to BIG CRK4 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	100.7	< 100	< 100	< 100	System re-dispatch after initial contingency
24087 MAGUNDEN 230 24401	P6.1.1_1010_P6.1.1 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	109.0	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_732_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	101.8	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_766_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	110.8	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
ANTELOPE 230 1 1	P6.1.1_768_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	107.8	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_803_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	110.7	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_873_P6.1.1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	112.1	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
24114 PARDEE 230 24115 PASTORIA 230 1 1	P6.1.1_1010_P6.1.1 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	131.3	118.6	121.3	124.4	104.8	149.2	116.0	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_695_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	114.4	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_837_P6.1.1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Line PARDEE 230.0 to BAILEY 230.0 Circuit	P6	N-1-1	125.9	112.1	113.5	120.8	< 100	149.4	109.4	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_873_P6.1.1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	136.0	123.1	125.9	128.9	109.4	154.0	120.5	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_907_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	121.4	107.7	109.2	116.4	< 100	144.8	105.0	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
24114 PARDEE 230 24217 WARNETAP 230 1 1	P1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	114.7	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit 1	P1	N-1	101.7	< 100	< 100	< 100	< 100	114.3	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_1077_P6.1.1 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	115.4	106.4	108.6	110.3	< 100	< 100	104.5	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_2427_P6.1.1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	114.9	< 100	105.6	108.4	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_660_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	103.8	< 100	< 100	< 100	131.5	101.5	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_694_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	132.1	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_732_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	104.5	< 100	< 100	< 100	132.4	102.2	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_767_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PARDEE 230.0 to BAILEY 230.0 Circuit	P6	N-1-1	144.2	128.4	130.0	137.9	112.9	171.1	125.3	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_769_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit	P6	N-1-1	< 100	< 100	103.7	107.9	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_794_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit	P6	N-1-1	112.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
24114 PARDEE 230 24403 BAILEY 230 1 1	P6.1.1_803_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	155.6	140.7	143.8	147.1	125.2	176.1	137.8	< 100	102.0	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_623_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	109.3	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_694_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	108.1	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_695_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	110.1	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_766_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	123.1	109.2	109.2	118.0	< 100	148.3	106.4	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
24115 PASTORIA 230 24217 WARNETAP 230 1 1	P6.1.1_768_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	118.5	104.8	104.9	113.7	< 100	143.7	102.0	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	105.2	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	104.9	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_1077_P6.1.1 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	105.9	< 100	< 100	101.4	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_2427_P6.1.1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	105.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_660_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	121.9	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_694_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	122.6	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_732_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	122.9	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
24115 PASTORIA 230 24217 WARNETAP 230 1 1	P6.1.1_767_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PARDEE 230.0 to BAILEY 230.0 Circuit	P6	N-1-1	134.6	119.1	120.7	128.9	103.8	161.4	116.0	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
	P6.1.1_794_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit	P6	N-1-1	103.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_803_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	145.9	131.4	134.4	137.9	115.9	166.4	128.5	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
24141 SPRINGVL 230 24304 BIG CRK4 230 1 1	line_BCT_P7_02_Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit 1	P7	DCTL	101.1	101.1	102.1	102.4	106.4	111.3	101.0	105.1	103.6	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_1949_P6.1.1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit 2 Line BIG CRK3 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	< 100	< 100	100.3	100.3	103.4	109.9	< 100	102.3	101.8	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_2000_P6.1.1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line BIG CRK3 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	101.1	101.1	102.1	102.4	106.4	111.3	101.0	105.1	103.6	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
24235 RECTOR 230 24303 BIG CRK3 230 2 1	line_BCT_P7_02_Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit 1	P7	DCTL	115.8	115.8	113.8	117.2	115.7	105.3	116.4	115.6	112.2	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_1259_P6.1.1 Line SPRINGVL 230.0 to BIG CRK4 230.0 Circuit 1 Line BIG CRK3 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	100.1	< 100	< 100	< 100	< 100	< 100	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_2000_P6.1.1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line BIG CRK3 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	115.8	115.8	113.8	117.2	115.7	105.3	116.4	115.6	112.2	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
24301 BIG CRK1 230 24235 RECTOR 230 1 1	P6.1.1_1253_P6.1.1 Line SPRINGVL 230.0 to BIG CRK4 230.0 Circuit 1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	110.1	110.4	110.0	112.0	111.5	110.6	110.5	110.9	110.2	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_1259_P6.1.1 Line SPRINGVL 230.0 to BIG CRK4 230.0 Circuit 1 Line BIG CRK3 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	119.6	119.8	119.3	122.4	121.9	120.0	119.9	120.8	119.4	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_1949_P6.1.1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit 2 Line BIG CRK3 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	137.4	137.7	135.6	139.7	136.6	126.1	138.3	136.4	133.8	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_2146_P6.1.1 Line BIG CRK2 230.0 to BIG CRK3 230.0 Circuit 1 Line BIG CRK2 230.0 to BIG CRK8 230.0 Circuit	P6	N-1-1	110.9	111.5	111.2	112.2	111.4	112.1	111.5	112.4	111.4	System re-dispatch after initial contingency
	P6.1.1_2149_P6.1.1 Line BIG CRK2 230.0 to BIG CRK3 230.0 Circuit 1 Line BIG CRK8 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	128.1	128.6	128.2	129.5	128.7	128.9	128.6	129.6	128.5	System re-dispatch after initial contingency
24302 BIG CRK2 230 24303 BIG CRK3 230 1 1	P6.1.1_1999_P6.1.1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line BIG CRK2 230.0 to BIG CRK8 230.0 Circuit	P6	N-1-1	109.6	110.1	109.7	110.6	110.3	110.8	110.0	111.1	110.2	System re-dispatch after initial contingency
	P6.1.1_2002_P6.1.1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line BIG CRK8 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	125.7	126.2	125.8	126.8	126.5	126.7	126.1	127.2	126.3	System re-dispatch after initial contingency
24302 BIG CRK2 230 24305 BIG CRK8 230 1 1	P6.1.1_1998_P6.1.1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line BIG CRK2 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	115.8	116.4	116.0	117.0	116.7	117.1	116.3	117.4	116.5	System re-dispatch after initial contingency
24303 BIG CRK3 230 24235 RECTOR 230 1 1	P6.1.1_1253_P6.1.1 Line SPRINGVL 230.0 to BIG CRK4 230.0 Circuit 1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	124.7	125.1	124.7	126.9	126.3	125.2	125.2	125.6	124.8	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_1254_P6.1.1 Line SPRINGVL 230.0 to BIG CRK4 230.0 Circuit 1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	127.1	127.4	126.9	129.8	130.1	127.5	127.5	128.5	126.9	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_1944_P6.1.1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit 2 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit	P6	N-1-1	144.4	145.0	142.6	146.8	143.5	131.9	145.7	143.5	140.3	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_1950_P6.1.1 Line RECTOR 230.0 to BIG CRK3 230.0 Circuit 2 Line BIG CRK4 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	110.8	111.3	111.0	112.3	111.5	110.9	111.3	111.5	110.7	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
	P6.1.1_2001_P6.1.1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line BIG CRK4 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	112.9	113.4	113.0	114.8	113.8	112.9	113.5	113.7	112.8	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
24305 BIG CRK8 230 24303 BIG CRK3 230 1 1	P6.1.1_1998_P6.1.1 Line BIG CRK1 230.0 to RECTOR 230.0 Circuit 1 Line BIG CRK2 230.0 to BIG CRK3 230.0 Circuit	P6	N-1-1	132.8	133.4	133.0	134.0	133.7	133.9	133.3	134.4	133.4	Existing Big Creek/San Joaquin Valley RAS and/or system redispatch after initial contingency
24402 ANTELOPE 66.0 24401 ANTELOPE 230 1 1	P6.1.2_1108_P6.1.2 Line ANTELOPE 66.0 to PLAINVEW 66.0 Circuit 1 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circu	P6	N-1-1	< 100	< 100	100.3	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after intial contingency and shed load after the second contingency
	P6.2.2_25_P6.2.2 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circuit 2 0.00 Tran ANTELOPE 66.00 to ANTELO	P6	N-1-1	143.9	127.4	175.3	< 100	115.7	< 100	133.2	100.1	111.9	Energizing existing spare transformer after intial contingency and shed load after the second contingency
	P6.1.2_1012_P6.1.2 Line ANTELOPE 66.0 to ROSAMOND 66.0 Circuit eq Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circ	P6	N-1-1	< 100	< 100	102.6	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after intial contingency and shed load after the second contingency
	P6.1.2_1108_P6.1.2 Line ANTELOPE 66.0 to PLAINVEW 66.0 Circuit 1 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circu	P6	N-1-1	< 100	< 100	106.8	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after intial contingency and shed load after the second contingency

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)							Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity		
24402 ANTELOPE 66.0 24401 ANTELOPE 230 2 1	P6.1.2_1276_P6.1.2 Line ROSAMOND 66.0 to R12TAP 66.0 Circuit 1 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circu	P6	N-1-1	< 100	< 100	100.1	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
	P6.1.2_988_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circui	P6	N-1-1	< 100	< 100	100.8	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
	P6.2.2_3_P6.2.2 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circuit 1 0.00 Tran ANTELOPE 66.00 to ANTELOP	P6	N-1-1	144.7	128.1	176.3	< 100	116.3	< 100	133.9	100.8	112.5	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
24402 ANTELOPE 66.0 24401 ANTELOPE 230 4 1	P6.1.2_1010_P6.1.2 Line ANTELOPE 66.0 to ROSAMOND 66.0 Circuit eq Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circ	P6	N-1-1	< 100	< 100	110.1	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
	P6.1.2_1105_P6.1.2 Line ANTELOPE 66.0 to PLAINVEW 66.0 Circuit 1 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circu	P6	N-1-1	< 100	< 100	111.3	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
	P6.1.2_1106_P6.1.2 Line ANTELOPE 66.0 to PLAINVEW 66.0 Circuit 1 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circu	P6	N-1-1	< 100	< 100	114.2	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
	P6.1.2_986_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circui	P6	N-1-1	< 100	< 100	108.4	< 100	< 100	< 100	< 100	< 100	< 100	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
	P6.2.2_1_P6.2.2 Tran ANTELOPE 66.00 to ANTELOPE 230.00 Circuit 1 0.00 Tran ANTELOPE 66.00 to ANTELOP	P6	N-1-1	148.3	129.9	181.1	< 100	116.2	< 100	135.9	105.5	112.0	Energizing existing spare transformer after initial contingency and shed load after the second contingency	
24402 ANTELOPE 66.0 24420 NEENACH 66.0 1 1	P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	146.1	< 100	< 100	< 100	< 100	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency	
	P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY	P6	N-1-1	< 100	< 100	148.0	< 100	< 100	< 100	< 100	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency	
24403 BAILY 230 24115 PASTORIA 230 1 1	P6.1.1_623_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	114.0	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_694_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	112.9	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_695_P6.1.1 Line MAGUNDEN 230.0 to ANTELOPE 230.0 Circuit 2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	114.8	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_766_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	140.0	128.0	132.4	132.1	114.2	154.2	125.5	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_768_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit	P6	N-1-1	135.3	123.4	128.0	127.6	109.6	149.4	120.9	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_769_P6.1.1 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit	P6	N-1-1	103.1	< 100	101.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_839_P6.1.1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit	P6	N-1-1	104.9	< 100	102.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_864_P6.1.1 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit	P6	N-1-1	103.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Existing Pastoria Energy Facility RAS and/or system redispatch after initial contingency
	P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	101.6	110.4	158.4	112.4	< 100	< 100	111.6	105.1	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency
P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY	P6	N-1-1	101.4	110.4	162.5	116.8	< 100	< 100	111.6	106.8	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency	
24420 NEENACH 66.0 24452 TAP 85 66.0 1 1	P6.1.1_2427_P6.1.1 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	112.2	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency
	P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	131.0	139.3	183.6	133.1	< 100	< 100	140.8	135.5	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency
	P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY	P6	N-1-1	130.7	139.3	187.2	136.6	< 100	< 100	140.8	137.1	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency
24435 WESTPAC 66.0 24452 TAP 85 66.0 1 1	P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	107.2	119.9	< 100	< 100	< 100	< 100	120.0	118.6	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency
	P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY	P6	N-1-1	107.0	119.9	< 100	< 100	< 100	< 100	120.0	116.7	< 100	< 100	Split Antelope–Bailey 66 kV System per existing SCE operating procedure after initial contingency
29399 WINDHUB_B 230 29505 windh3i 13.8 3 1	P6.1.2_1330_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	115.4	< 100	< 100	< 100	119.2	< 100	< 100	Tehachapi CRAS
	P6.1.2_1618_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circu	P6	N-1-1	< 100	< 100	122.2	115.6	< 100	< 100	< 100	119.9	< 100	< 100	Tehachapi CRAS
	P6.1.2_1642_P6.1.2 Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	115.3	< 100	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_1666_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circu	P6	N-1-1	< 100	< 100	122.2	115.7	< 100	< 100	< 100	120.3	100.4	< 100	Tehachapi CRAS

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
	P6.1.2_562_P6.1.2 Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	122.1	115.3	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.2.2_172_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Tran WINDHUB 500.00 to WINDH 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	122.1	< 100	< 100	< 100	< 100	119.1	< 100	Tehachapi CRAS
	P6.2.2_173_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Tran WINDHUB 500.00 to WINDH 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	122.1	< 100	< 100	< 100	< 100	119.1	< 100	Tehachapi CRAS
29399 WINDHUB_B 230 29507 windhb4i 13.8 4 1	P6.1.2_1329_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	115.4	< 100	< 100	< 100	119.2	< 100	Tehachapi CRAS
	P6.1.2_1617_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	122.2	115.6	< 100	< 100	< 100	119.9	< 100	Tehachapi CRAS
	P6.1.2_1641_P6.1.2 Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	115.3	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_1665_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	122.2	115.7	< 100	< 100	< 100	120.3	100.4	Tehachapi CRAS
	P6.1.2_561_P6.1.2 Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	122.1	115.3	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.2.2_158_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 3WINDHB3T 13.80 Tran WINDHUB 500.00 to WINDH 500.00 to WINDHUB_B 230.00 Circuit 3WINDHB3T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	122.1	< 100	< 100	< 100	< 100	119.1	< 100	Tehachapi CRAS
	P6.2.2_159_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 3WINDHB3T 13.80 Tran WINDHUB 500.00 to WINDH 500.00 to WINDHUB_B 230.00 Circuit 3WINDHB3T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	122.1	< 100	< 100	< 100	< 100	119.1	< 100	Tehachapi CRAS
29401 WINDHUB 500 29505 windhb3i 13.8 3 1	P3.3_1150_P3.3 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Gen WDT1515_G 0.6 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	115.6	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_10_P6.1.2 Line MAGUNDEN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.7	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6.1.2_1690_P6.1.2 Line BIG SKY 230.0 to NORTH BIGSKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.7	115.6	< 100	< 100	< 100	117.6	< 100	Tehachapi CRAS
	P6.1.2_1714_P6.1.2 Line NORTH BIGSKY 230.0 to POLARIS 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.6	< 100	Tehachapi CRAS
	P6.1.2_1930_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	116.2	< 100	< 100	< 100	117.9	100.5	Tehachapi CRAS
	P6.1.2_346_P6.1.2 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	115.6	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_370_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.7	< 100	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_442_P6.1.2 Line SYC CYN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6.1.2_538_P6.1.2 Line VESTAL 230.0 to ROBOT 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.6	< 100	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_970_P6.1.2 Line ANTELOPE 230.0 to BIG SKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.8	< 100	< 100	< 100	< 100	117.7	< 100	Tehachapi CRAS
	P6.2.2_126_P6.2.2 Tran ANTELOPE 500.00 to ANTELOPE 230.00 Circuit 1ANTELP1T 13.80 Tran WINDHUB 500.00 to WINDH 500.00 to WINDHUB_B 230.00 Circuit 1ANTELP1T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6.2.2_142_P6.2.2 Tran ANTELOPE 500.00 to ANTELOPE 230.00 Circuit 2ANTELP2T 13.80 Tran WINDHUB 500.00 to WINDH 500.00 to WINDHUB_B 230.00 Circuit 2ANTELP2T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6_11011_P6 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Gen ANTLP2_P9_G1 0.6 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.6	< 100	Tehachapi CRAS
	P6_11040_P6 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Gen WDT1515_G 0.6 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	115.6	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P3.3_1035_P3.3 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 3WINDHB3T 13.80 Gen WDT1515_G 0.6 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	115.6	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_1689_P6.1.2 Line BIG SKY 230.0 to NORTH BIGSKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.7	115.6	< 100	< 100	< 100	117.6	< 100	Tehachapi CRAS
	P6.1.2_1713_P6.1.2 Line NORTH BIGSKY 230.0 to POLARIS 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.6	< 100	Tehachapi CRAS
	P6.1.2_1929_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	116.2	< 100	< 100	< 100	117.9	100.5	Tehachapi CRAS
	P6.1.2_345_P6.1.2 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	115.6	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
29401 WINDHUB 500 29507 windhb4i 13.8 4 1	P6.1.2_369_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.7	< 100	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_441_P6.1.2 Line SYC CYN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6.1.2_537_P6.1.2 Line VESTAL 230.0 to ROBOT 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.6	< 100	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_9_P6.1.2 Line MAGUNDEN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.6	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6.1.2_969_P6.1.2 Line ANTELOPE 230.0 to BIG SKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit	P6	N-1-1	< 100	< 100	123.8	< 100	< 100	< 100	< 100	117.7	< 100	Tehachapi CRAS
	P6.2.2_125_P6.2.2 Tran ANTELOPE 500.00 to ANTELOPE 230.00 Circuit 1 ANTELP1T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6.2.2_141_P6.2.2 Tran ANTELOPE 500.00 to ANTELOPE 230.00 Circuit 2 ANTELP2T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.1	Tehachapi CRAS
	P6_10891_P6 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 3 WINDHBT 13.80 Gen ANTLP2_P9_G1 0.6 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.6	< 100	Tehachapi CRAS
	P6_10920_P6 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 3 WINDHBT 13.80 Gen WDT1515_G 0.6 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	115.6	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
29401 WINDHUB 500 29511 windhb1i 13.8 1 1	P3.3_1299_P3.3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 2 WINDHB2T 13.80 Gen EASTWOOD 13.8 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	146.4	Tehachapi CRAS
	P3.3_1351_P3.3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 2 WINDHB2T 13.80 Gen ANTLP2_P9_G1 0.6 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	160.6	< 100	Tehachapi CRAS
	P6.1.2_12_P6.1.2 Line MAGUNDEN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.5	109.1	< 100	< 100	100.3	104.3	< 100	< 100	Tehachapi CRAS
	P6.1.2_1692_P6.1.2 Line BIG SKY 230.0 to NORTH BIGSKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.5	109.1	105.1	< 100	100.3	104.3	160.6	< 100	Tehachapi CRAS
	P6.1.2_1716_P6.1.2 Line NORTH BIGSKY 230.0 to POLARIS 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	160.6	< 100	Tehachapi CRAS
	P6.1.2_1932_P6.1.2 Line TOT915_GSU_H 500.00 to WINDHUB 500.00 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.9	< 100	105.8	< 100	100.4	104.7	161.1	147.0	Tehachapi CRAS
	P6.1.2_348_P6.1.2 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	105.1	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_372_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.5	109.1	< 100	< 100	100.3	104.3	< 100	< 100	Tehachapi CRAS
	P6.1.2_444_P6.1.2 Line SYC CYN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.5	< 100	< 100	< 100	< 100	104.3	< 100	146.4	Tehachapi CRAS
	P6.1.2_540_P6.1.2 Line VESTAL 230.0 to ROBOT 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	109.1	< 100	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6.1.2_780_P6.1.2 Line BIG CRK1 230.0 to EASTWOOD 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	146.4	Tehachapi CRAS
	P6.1.2_972_P6.1.2 Line ANTELOPE 230.0 to BIG SKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	109.2	< 100	< 100	< 100	< 100	160.6	< 100	Tehachapi CRAS
	P6_11178_P6 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 2 WINDHB2T 13.80 Gen MAMOTH2G 13.8 Unit ID 2	P6	N-1-1	< 100	< 100	< 100	105.1	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6_11179_P6 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 2 WINDHB2T 13.80 Gen MAMOTH1G 13.8 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	105.1	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P6_11199_P6 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 2 WINDHB2T 13.80 Gen EASTWOOD 13.8 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	146.4	Tehachapi CRAS
	P6_11243_P6 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 2 WINDHB2T 13.80 Gen TOT896_G2PV 0.6 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	100.3	< 100	< 100	< 100	Tehachapi CRAS
	P3.3_1163_P3.3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 1 WINDHB1T 13.80 Gen MAMOTH2G 13.8 Unit ID 2	P3	G-1/N-1	< 100	< 100	< 100	105.3	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P3.3_1164_P3.3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 1 WINDHB1T 13.80 Gen MAMOTH1G 13.8 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	105.3	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS
	P3.3_1228_P3.3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 1 WINDHB1T 13.80 Gen TOT896_G2PV 0.6 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	100.3	< 100	< 100	< 100	Tehachapi CRAS
	P3.3_1236_P3.3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 1 WINDHB1T 13.80 Gen ANTLP2_P9_G1 0.6 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	160.6	< 100	Tehachapi CRAS

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)							Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity		
29401 WINDHUB windhb2i 13.8 2 1	P6.1.2_11_P6.1.2 Line MAGUNDEN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.6	109.1	< 100	< 100	100.3	104.4	< 100	146.0	Tehachapi CRAS	
	P6.1.2_1691_P6.1.2 Line BIG SKY 230.0 to NORTH BIGSKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circu	P6	N-1-1	< 100	104.6	109.1	105.3	< 100	100.3	104.4	160.6	< 100	Tehachapi CRAS	
	P6.1.2_1715_P6.1.2 Line NORTH BIGSKY 230.0 to POLARIS 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	160.6	< 100	Tehachapi CRAS	
	P6.1.2_1931_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circu	P6	N-1-1	< 100	105.0	< 100	106.0	< 100	100.4	104.8	161.1	146.5	Tehachapi CRAS	
	P6.1.2_347_P6.1.2 Line PASTORIA 230.0 to EDMONSTN 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	105.3	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS	
	P6.1.2_371_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.6	109.1	< 100	< 100	100.3	104.4	< 100	< 100	Tehachapi CRAS	
	P6.1.2_443_P6.1.2 Line SYC CYN 230.0 to OMAR 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.6	< 100	< 100	< 100	< 100	104.4	< 100	146.0	Tehachapi CRAS	
	P6.1.2_539_P6.1.2 Line VESTAL 230.0 to ROBOT 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	109.1	< 100	< 100	< 100	< 100	< 100	< 100	Tehachapi CRAS	
	P6.1.2_971_P6.1.2 Line ANTELOPE 230.0 to BIG SKY 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	109.2	< 100	< 100	< 100	< 100	160.6	< 100	Tehachapi CRAS	
	P6.2.2_127_P6.2.2 Tran ANTELOPE 500.00 to ANTELOPE 230.00 Circuit 1ANTELP1T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	146.0	Tehachapi CRAS	
P6.2.2_143_P6.2.2 Tran ANTELOPE 500.00 to ANTELOPE 230.00 Circuit 2ANTELP2T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	146.0	Tehachapi CRAS		
29402 WIRLWIND wirwn1i 13.8 1 1	P6.1.2_1670_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	104.2	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS	
	P6.1.2_1694_P6.1.2 Line BIG SKY 230.0 to NORTH BIGSKY 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.0	< 100	Whirlwind RAS	
	P6.1.2_1934_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	105.0	< 100	< 100	< 100	106.4	< 100	Whirlwind RAS	
	P6.1.2_1935_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	104.9	< 100	< 100	< 100	106.3	< 100	Whirlwind RAS	
	P6.1.2_974_P6.1.2 Line ANTELOPE 230.0 to BIG SKY 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.1	< 100	Whirlwind RAS	
	P6.2.2_222_P6.2.2 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	137.8	179.4	188.6	211.2	< 100	124.0	179.4	215.7	< 100	Whirlwind RAS	
	P6_11520_P6 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Gen WDT1515_G 0.6 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	104.2	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS	
29402 WIRLWIND wirwn3i 13.8 3 1	P6.1.2_1669_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	103.9	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS	
	P6.1.2_1693_P6.1.2 Line BIG SKY 230.0 to NORTH BIGSKY 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	Whirlwind RAS	
	P6.1.2_1717_P6.1.2 Line NORTH BIGSKY 230.0 to POLARIS 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	Whirlwind RAS	
	P6.1.2_1933_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	104.6	< 100	< 100	< 100	106.0	< 100	Whirlwind RAS	
	P6.1.2_1935_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	104.1	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS	
	P6.1.2_973_P6.1.2 Line ANTELOPE 230.0 to BIG SKY 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	Whirlwind RAS	
	P6.2.2_212_P6.2.2 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1WIRLWN1T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	137.8	179.4	188.6	211.3	< 100	124.0	179.4	215.9	< 100	Whirlwind RAS	
	P6_11400_P6 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1WIRLWN1T 13.80 Gen WDT1515_G 0.6 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	103.8	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS	
P3.3_1495_P3.3 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1WIRLWN1T 13.80 Gen WDT1515_G 0.6 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	103.7	< 100	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS	
	P6.1.2_1669_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	103.7	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS	
	P6.1.2_1693_P6.1.2 Line BIG SKY 230.0 to NORTH BIGSKY 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circu	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.5	< 100	Whirlwind RAS	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
29402 WIRLWIND 500 29522 wirlwn4i 13.8 4 1	P6.1.2_1717_P6.1.2 Line NORTH BIGSKY 230.0 to POLARIS 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.5	< 100	Whirlwind RAS
	P6.1.2_1933_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	104.4	< 100	< 100	< 100	105.9	< 100	Whirlwind RAS
	P6.1.2_1934_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	104.1	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS
	P6.1.2_973_P6.1.2 Line ANTELOPE 230.0 to BIG SKY 230.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.5	< 100	Whirlwind RAS
	P6.2.2_211_P6.2.2 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1WIRLWN1T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	137.8	179.4	188.6	211.3	< 100	124.0	179.4	215.9	< 100	Whirlwind RAS
29407 WINDHUB_A 230 29511 windhb1i 13.8 1 1	P6.1.2_1332_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.8	< 100	104.3	< 100	100.3	104.6	155.5	< 100	Tehachapi CRAS
	P6.1.2_1620_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	105.0	107.8	104.5	< 100	< 100	104.8	155.5	140.1	Tehachapi CRAS
	P6.1.2_1644_P6.1.2 Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	155.5	< 100	Tehachapi CRAS
	P6.1.2_1668_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.9	107.8	104.5	< 100	100.3	104.7	155.6	140.2	Tehachapi CRAS
	P6.1.2_1932_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140.1	Tehachapi CRAS
	P6.1.2_564_P6.1.2 Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	104.8	107.7	104.3	< 100	100.3	104.6	155.5	< 100	Tehachapi CRAS
	P6.1.2_780_P6.1.2 Line BIG CRK1 230.0 to EASTWOOD 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140.1	Tehachapi CRAS
	P6.1.2_924_P6.1.2 Line MAMMOTH 230.0 to BIG CRK3 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140.1	Tehachapi CRAS
	P6.2.2_159_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 3WINDHB3T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	107.7	< 100	< 100	100.3	< 100	< 100	< 100	Tehachapi CRAS
	P6.2.2_173_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	104.7	107.7	104.3	< 100	100.3	104.5	< 100	< 100	Tehachapi CRAS
	P3.3_1184_P3.3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 1WINDHB1T 13.80 Gen EASTWOOD 13.8 Unit ID 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140.1	Tehachapi CRAS
	P6.1.2_1331_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	105.0	< 100	104.4	< 100	100.3	104.8	< 100	< 100	Tehachapi CRAS
29407 WINDHUB_A 230 29513 windhb2i 13.8 2 1	P6.1.2_1619_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	105.1	107.8	104.6	< 100	< 100	105.0	155.5	< 100	Tehachapi CRAS
	P6.1.2_1643_P6.1.2 Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	155.5	< 100	Tehachapi CRAS
	P6.1.2_1667_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	105.1	107.8	104.7	< 100	100.3	104.9	155.6	140.2	Tehachapi CRAS
	P6.1.2_1931_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140.2	Tehachapi CRAS
	P6.1.2_563_P6.1.2 Line VINCENT 500.0 to WIRLWIND 500.0 Circuit 3 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	105.0	107.7	104.4	< 100	100.3	104.8	155.5	< 100	Tehachapi CRAS
	P6.1.2_779_P6.1.2 Line BIG CRK1 230.0 to EASTWOOD 230.0 Circuit 1 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140.1	Tehachapi CRAS
	P6.2.2_158_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 3WINDHB3T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	< 100	107.7	< 100	< 100	100.3	< 100	< 100	< 100	Tehachapi CRAS
	P6.2.2_172_P6.2.2 Tran WINDHUB 500.00 to WINDHUB_B 230.00 Circuit 4WINDHB4T 13.80 Tran WINDHUB 500.00 to WINDH	P6	N-1-1	< 100	105.0	107.7	104.4	< 100	100.3	104.8	155.4	< 100	Tehachapi CRAS
	P6_11079_P6 Tran WINDHUB 500.00 to WINDHUB_A 230.00 Circuit 1WINDHB1T 13.80 Gen EASTWOOD 13.8 Unit ID 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	140.1	Tehachapi CRAS
	P6.1.2_1334_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	103.1	< 100	< 100	< 100	106.2	< 100	Whirlwind RAS
	P6.1.2_1335_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.1	< 100	Whirlwind RAS
	P6.1.2_1622_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit	P6	N-1-1	< 100	< 100	< 100	103.2	< 100	< 100	< 100	106.6	< 100	Whirlwind RAS

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)						Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
wirlwn1i 13.8 1 1	P6.1.2_1623_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	103.1	< 100	< 100	< 100	106.5	< 100	Whirlwind RAS
	P6.1.2_1934_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	103.1	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS
	P6.2.2_222_P6.2.2 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1WIRLWN1T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	137.4	176.3	186.0	206.4	< 100	123.6	176.4	212.9	< 100	Whirlwind RAS
29408 WIRLWIND 230 29515 wirlwn3i 13.8 3 1	P6.1.2_1333_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00	P6	N-1-1	< 100	< 100	< 100	102.7	< 100	< 100	< 100	105.8	< 100	Whirlwind RAS
	P6.1.2_1621_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	102.8	< 100	< 100	< 100	106.2	< 100	Whirlwind RAS
	P6.1.2_1623_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	Whirlwind RAS
	P6.1.2_1645_P6.1.2 Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	102.7	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS
	P6.1.2_1669_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	Whirlwind RAS
	P6.1.2_1933_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	102.7	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS
	P6.2.2_212_P6.2.2 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1WIRLWN1T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	137.4	176.4	186.0	206.4	< 100	123.6	176.4	212.9	< 100	Whirlwind RAS
29408 WIRLWIND 230 29522 wirlwn4i 13.8 4 1	P6.1.2_1333_P6.1.2 Line MW_WRLWIND_32 500.0 to WIRLWIND 500.0 Circuit 3 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00	P6	N-1-1	< 100	< 100	< 100	102.6	< 100	< 100	< 100	105.7	< 100	Whirlwind RAS
	P6.1.2_1621_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	102.6	< 100	< 100	< 100	106.0	< 100	Whirlwind RAS
	P6.1.2_1622_P6.1.2 Line ANTELOPE 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	Whirlwind RAS
	P6.1.2_1645_P6.1.2 Line ANTELOPE 500.0 to WIRLWIND 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	102.6	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS
	P6.1.2_1669_P6.1.2 Line WIRLWIND 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.6	< 100	Whirlwind RAS
	P6.1.2_1933_P6.1.2 Line TOT915_GSU_H 500.0 to WINDHUB 500.0 Circuit 1 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 3WIRLWN3T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	< 100	< 100	< 100	102.6	< 100	< 100	< 100	< 100	< 100	Whirlwind RAS
	P6.2.2_211_P6.2.2 Tran WIRLWIND 500.00 to WIRLWIND 230.00 Circuit 1WIRLWN1T 13.80 Tran WIRLWIND 500.00 to WIRLW	P6	N-1-1	137.4	176.4	186.0	206.4	< 100	123.6	176.4	212.9	< 100	Whirlwind RAS

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
					2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity		
ALAMO SC 66 kV	P6.1.1, 942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	High/Low Voltage	0.84	0.75	1.17	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.78	0.75	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 1206_P6.1.2 Line BAILEY 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.16	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 1230_P6.1.2 Line NEENACH 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.17	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 1302_P6.1.2 Line WESTPAC 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 246_P6.1.2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 270_P6.1.2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 294_P6.1.2 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 318_P6.1.2 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 366_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 942_P6.1.2 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 990_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.2.2, 87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY	P6	N-1-1	High/Low Voltage	0.84	0.75	1.18	1.18	0.9 < V < 1.05	0.9 < V < 1.05	0.81	0.75	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6, 10552_P6 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P3.3, 682_P3.3 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P3	G-1N-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 990_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
BAILEY 66 kV	P6.1.1, 2763_P6.1.1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit 1 Line NEENACH 66.0 to TAP 85 66.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.1, 942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	High/Low Voltage	0.83	0.74	1.17	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.77	0.73	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 1206_P6.1.2 Line BAILEY 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.16	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 1230_P6.1.2 Line NEENACH 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.17	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 1302_P6.1.2 Line WESTPAC 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.14	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 246_P6.1.2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.14	1.11	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 270_P6.1.2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 294_P6.1.2 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 366_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.11	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 942_P6.1.2 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.2, 990_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.2.2, 87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY	P6	N-1-1	High/Low Voltage	0.83	0.74	1.19	1.18	0.9 < V < 1.05	0.9 < V < 1.05	0.79	0.73	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6, 10552_P6 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P3.3, 682_P3.3 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P3	G-1N-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
	P6.1.1, 942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.90	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue	
P6.1.2, 990_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran BAILEY 66.0 to BAILEY 230.0 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.11	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue		
P6.2.2, 87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.90	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue		
P6, 10552_P6 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue		
P6.1.1, 2763_P6.1.1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit 1 Line NEENACH 66.0 to TAP 85 66.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue		

Substation		Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
						2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
OSO	66 kV	P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	High/Low Voltage	0.84	0.75	1.17	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.78	0.74	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1206_P6.1.2 Line BAILEY 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.16	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1230_P6.1.2 Line NEENACH 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.17	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1302_P6.1.2 Line WESTPAC 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_246_P6.1.2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_270_P6.1.2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_294_P6.1.2 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_366_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_942_P6.1.2 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_990_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High/Low Voltage	0.84	0.75	1.18	1.18	0.9 < V < 1.05	0.9 < V < 1.05	0.80	0.74	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6_10552_P6 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
TAP 85	66 kV	P3.3_682_P3.3 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P3	G-1/N-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.1_2783_P6.1.1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit 1 Line NEENACH 66.0 to TAP 85 66.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	High/Low Voltage	0.84	0.76	0.9 < V < 1.05	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.79	0.76	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1230_P6.1.2 Line NEENACH 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.17	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1254_P6.1.2 Line NEENACH 66.0 to ALPINE 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1302_P6.1.2 Line WESTPAC 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1566_P6.1.2 Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1590_P6.1.2 Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 2 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_246_P6.1.2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_270_P6.1.2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_318_P6.1.2 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_942_P6.1.2 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High/Low Voltage	0.85	0.76	1.15	1.16	0.9 < V < 1.05	0.9 < V < 1.05	0.81	0.76	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6_10552_P6 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.1_2783_P6.1.1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit 1 Line NEENACH 66.0 to TAP 85 66.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	High/Low Voltage	0.84	0.75	1.17	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.78	0.74	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1206_P6.1.2 Line BAILEY 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.16	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1230_P6.1.2 Line NEENACH 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.17	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1302_P6.1.2 Line WESTPAC 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circu	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue

Substation		Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
						2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
TAP 86	66 kV	P6.1.2_246_P6.1.2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_270_P6.1.2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_294_P6.1.2 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_366_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_942_P6.1.2 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_990_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High/Low Voltage	0.84	0.75	1.18	1.18	0.9 < V < 1.05	0.9 < V < 1.05	0.80	0.74	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
WESTPAC	66 kV	P6_10562_P6 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P3.3_882_P3.3 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P3	G-1/N-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.1_2783_P6.1.1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit 1 Line NEENACH 66.0 to TAP 85 66.0 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	High/Low Voltage	0.85	0.77	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.80	0.76	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1230_P6.1.2 Line NEENACH 66.0 to TAP 85 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.18	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1254_P6.1.2 Line NEENACH 66.0 to ALPINE 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1566_P6.1.2 Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_1590_P6.1.2 Line ANTELOPE 500.0 to VINCENT 500.0 Circuit 2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_246_P6.1.2 Line PARDEE 230.0 to PASTORIA 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_270_P6.1.2 Line PARDEE 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_318_P6.1.2 Line PASTORIA 230.0 to WARNETAP 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_366_P6.1.2 Line PASTORIA 230.0 to PSTRIA 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_942_P6.1.2 Line ANTELOPE 230.0 to PARDEE 230.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.13	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.1.2_990_P6.1.2 Line ANTELOPE 66.0 to NEENACH 66.0 Circuit 1 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.10	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_87_P6.2.2 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 2 0.00 Tran BAILEY 66.00 to BAILEY 230.00 Circuit	P6	N-1-1	High/Low Voltage	0.85	0.77	1.15	1.16	0.9 < V < 1.05	0.9 < V < 1.05	0.82	0.76	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6_10562_P6 Tran BAILEY 66.00 to BAILEY 230.00 Circuit 3 0.00 Gen ALPINE_G 0.3 Unit ID 1	P6	N-1-1	High Voltage	0.9 < V < 1.05	0.9 < V < 1.05	1.15	1.12	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		BAILEY	230 kV	P6.1.1_942_P6.1.1 Line PARDEE 230.0 to BAILEY 230.0 Circuit 1 Line BAILEY 230.0 to PASTORIA 230.0 Circuit	P6	N-1-1	High/Low Voltage	0.82	0.74	1.16	1.14	0.9 < V < 1.05	0.9 < V < 1.05	0.73	0.73
P6.2.2_256_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 1 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6			N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.81	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
BIG CRK1	230 kV	P6.2.2_257_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 1 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_262_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 2 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
BIG CRK2	230 kV	P6.2.2_256_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 1 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.81	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_257_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 1 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
BIG CRK2	230 kV	P6.2.2_262_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 2 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_256_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 1 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.81	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
BIG CRK3	230 kV	P6.2.2_257_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 1 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.83	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
		P6.2.2_262_P6.2.2 Tran RECTOR 66.00 to RECTOR 230.00 Circuit 2 0.00 Tran RECTOR 66.00 to RECTOR 230.00 Circuit	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.86	0.82	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.83	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
					2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer Off-Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	
BIG CRK4 230 kV	P6.2.2, 256, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.80	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 257, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.83	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 262, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 2 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.86	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.83	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
BIG CRK8 230 kV	P6.2.2, 256, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.81	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 257, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 262, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 2 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
EASTWOOD 230 kV	P6.2.2, 256, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.88	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.85	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 257, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.88	0.83	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 262, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 2 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.83	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.85	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
MAMMOTH 230 kV	P6.2.2, 256, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.81	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 257, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 262, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 2 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.87	0.82	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.84	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
RECTOR 230 kV	P6.2.2, 256, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.88	0.79	0.74	0.81	0.9 < V < 1.05	0.9 < V < 1.05	0.80	0.77	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 257, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.88	0.79	0.75	0.81	0.9 < V < 1.05	0.9 < V < 1.05	0.80	0.76	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 262, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 2 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.87	0.79	0.75	0.81	0.9 < V < 1.05	0.9 < V < 1.05	0.81	0.76	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
SPRINGVL 230 kV	P6.2.2, 256, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	0.86	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 257, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.88	0.84	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.85	0.86	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 262, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 2 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.88	0.85	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.87	0.86	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
VESTAL 230 kV	P6.2.2, 256, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.89	0.86	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.87	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 257, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 1 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.89	0.86	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.86	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue
	P6.2.2, 262, P6.2.2 Tran RECTOR to RECTOR 230.00 Circuit 2 Tran RECTOR 66.00 to RECTO	P6	N-1-1	Low Voltage	0.9 < V < 1.05	0.88	0.86	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.87	0.9 < V < 1.05	system adjustments after first contingency mitigates the issue

[illegible]

Contingency	Category	Category Description	Baseline Scenarios										Transfer Stability Performance				Sensitivity Scenarios				Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2038 Summer-Off Peak	2027 Spring On-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity										
Parden-Vincent and Parden-VincezL Fault Location: MAGUENIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Rector SVC and Maguenin-Vesta No. 1 Fault Location: MAGUENIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Rector SVC and Maguenin-Vesta No. 2 Fault Location: MAGUENIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Rector SVC and Maguenin-Springle No. 1 Fault Location: MAGUENIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Rector SVC and Maguenin-Springle No. 2 Fault Location: MAGUENIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Rector SVC and Maguenin-Pastoria No. 1 Fault Location: MAGUENIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Rector SVC and Maguenin-Pastoria No. 2 Fault Location: MAGUENIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Rector SVC and Antelope-Maguennin No. 3 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
ANTELOPE-MAGUENNIN NO. 2 & RECTOR-VISTA NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN-PASTORIA NO. 1 & MAGUENNIN-SPRINGVILLE NO. 1 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
BIG CREEK & SPRINGVILLE & BIG CREEK & RECTOR Fault Location: RECTOR	P6	N-1-1	Unstable	Unstable	Unstable	Unstable	No issues	No issues	No issues	No issues	Unstable	Unstable	No issues	No issues	No issues	No issues	No issues	No issues	Evaluating Big Creek/Sen Jozequin Valley RAS		
BIG CREEK & SPRINGVILLE & BIG CREEK & RECTOR with Intertie Fault Location: RECTOR	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN-SPRINGVILLE NO. 1 & ANTELOPE-MAGUENNIN NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN-SPRINGVILLE NO. 1 & BIG CREEK & SPRINGVILLE Fault Location: MAGUENNIN	P6	N-1-1	No issues	Unstable	No issues	Unstable	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	Unstable	No issues	No issues	No issues	Evaluating Big Creek/Sen Jozequin Valley RAS and/or system redispach after initial contingency		
BAILEY 1& 2x Fault Location: BAILEY	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & RECTOR-VISTA NO. 1 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & MAGUENNIN-PASTORIA NO. 3 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & MAGUENNIN-SPRINGVILLE NO. 1 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & ANTELOPE-MAGUENNIN NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & RECTOR-SPRINGVILLE Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & BIG CREEK & SPRINGVILLE Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & BIG CREEK & RECTOR NO. 1 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & BIG CREEK & RECTOR NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & BIG CREEK & BIG CREEK & Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & RECTOR SVC Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
ANTELOPE-MAGUENNIN NO. 2 & RECTOR-VISTA NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN-PASTORIA NO. 1 & MAGUENNIN-SPRINGVILLE NO. 1 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN OMAR & PASTORIA-LEBEC Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
PASTORIA-LEBEC & MAGUENNIN-SPRINGVILLE NO. 1 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
PASTORIA-LEBEC & MAGUENNIN-SPRINGVILLE NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
PASTORIA-LEBEC & MAGUENNIN-VISTA NO. 1 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
PASTORIA-LEBEC & MAGUENNIN-VISTA NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
PASTORIA-LEBEC & RECTOR-SPRINGVILLE Fault Location: RECTOR	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
PASTORIA-LEBEC & RECTOR-VISTA NO. 1 Fault Location: RECTOR	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
PASTORIA-LEBEC & RECTOR-VISTA NO. 2 Fault Location: RECTOR	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN-SPRINGVILLE NO. 1 & BIG CREEK-SPRINGVILLE Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
MAGUENNIN-SPRINGVILLE NO. 1 & BIG CREEK & SPRINGVILLE Fault Location: MAGUENNIN	P6	N-1-1	No issues	Unstable	No issues	Unstable	No issues	Unstable	No issues	No issues	No issues	No issues	No issues	No issues	Unstable	No issues	No issues	No issues	Evaluating Big Creek/Sen Jozequin Valley RAS and/or system redispach after initial contingency		
MAGUENNIN-SPRINGVILLE NO. 1 & BIG CREEK & RECTOR NO. 2 Fault Location: MAGUENNIN	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
BIG CREEK & SPRINGVILLE & RECTOR-VISTA NO. 1 Fault Location: RECTOR	P6	N-1-1	No issues	No issues	No issues	No issues	No issues	Unstable	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Big Creek 3 - Rector No 2 and Rector - Springle 230 kV	P7	DC/TL	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Big Creek 3 - Rector No 1 and Big Creek - Rector 230 kV	P7	DC/TL	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		
Gregory - Creek and Gregory - Creek 230 kV	P7	DC/TL	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No issues	No Violation		

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)									Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	

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

Substation	Load Served (MW)										Potential Mitigation Solutions
	2026 Summer Peak	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2030 Summer-Off Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 SP Heavy Renewable & Min Gas Gen	2030 SP High CEC Forecast	2027 Spring OP Sensitivity	

No single source substation with more than 100 MW

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22886 SUNCREST 230 22832 SYCAMORE 230 2 1	OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50001_Line ECO-ML 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	106.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on existing TL23040 IV 500kV N-1 RAS to trip renewable generation in the greater Imperial Valley area.
	EA_ALL_Gen EA GEN1 U6/U7/U8/U9/U10 ID 1 AND TL50001_Line ECO-ML 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	104.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL50004_Line IV-ECO 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	103.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50004_Line IV-ECO 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	103.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	EA_ALL_Gen EA GEN1 U6/U7/U8/U9/U10 ID 1 AND TL50004_Line IV-ECO 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	102.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	ML-500-8013_CB MIGUEL 500kV 8013	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	101.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	ML-500-8023_CB MIGUEL 500kV 8023	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	101.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	ML-500-9013_CB MIGUEL 500kV 9013	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	101.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	ECO-500-1T_CB EAST COUNTY 500kV 1T or 1E	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	101.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	ML-500-7013_CB MIGUEL 500kV 7013	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	101.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	ECO-500-4T_CB EAST COUNTY 500kV 4T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	100.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	SX-230-21T_CB SYCAMORE CANYON 230kV 21T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	101.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on existing TL23054/TL23055 RAS to trip generation in the greater Imperial Valley area.
	TL50001_Line ECO-ML 500kV ck 1 AND TL23054_Line SCR-SX 230kV ck 1	P6	N-1-1	127.9	120.9	< 100	< 100	176.3	< 100	< 100	< 100	170.1	100.9	126.5	< 100	On the near term, rely on the existing TL23054/TL23055 RAS, along with the 30-minute short-term emergency ratings of the 230 kV lines (30% higher than their continuous ratings), to allow the market and operators to bring down the overloads that do not exceed 130% for the P6 contingencies within the continuous ratings in 30 minutes as operational mitigation measures. For the contingencies that exceed 130%, the operational mitigations would need to be performed after the first contingency.
	TL50001_Line ECO-ML 500kV ck 1 AND TL23054+RAS_Line SCR-SX 230kV ck 1 + RAS	P6	N-1-1	108.1	101.8	< 100	< 100	142.1	< 100	< 100	< 100	134.8	< 100	107.3	< 100	The system adjustments could involve the reduction of generation output in the greater Imperial Valley area, dispatch conventional gas generation, preferred resources, and battery energy storage in the San Diego area, adjust the Imperial Valley phase shifting transformers, and bypass the series capacitor banks in the 500 kV transmission lines between Hassayampa and North Gila as needed. The ISO approved "Miguel-Sycamore Canyon 230 kV line Loop-in to Suncrest" project (ISD 2032) solves this reliability issue in the long term.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22886 SUNCREST 230 22888 SNCRSMP1 500 1 1	TL50001_Line ECO-ML 500kV ck 1 AND SCR_BK81_Tran SCR 500/230kV ck 2	P6	N-1-1	< 100	< 100	< 100	< 100	129.1	< 100	< 100	< 100	123.7	< 100	< 100	< 100	On the near term, rely on the 30-min emergency ratings of the Suncrest banks (25% higher than their 24-hr ratings). If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. The system adjustments and mitigation solutions would be similar to the ones described above for the TL23054/TL23055 Suncrest – Sycamore Canyon P6 overload issues.
22886 SUNCREST 230 22889 SNCRSMP2 500 2 1	TL50001_Line ECO-ML 500kV ck 1 AND SCR_BK80_Tran SCR 500/230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	129.1	< 100	< 100	< 100	123.7	< 100	< 100	< 100	The ISO approved "Miguel-Sycamore Canyon 230 kV line Loop-in to Suncrest" project (ISD 2032) solves this reliability issue in the long term since it includes a third Suncrest 500/230 kV bank.
22464 MIGUEL 230 22472 MIGUELMP 500 1 1	ML_BK81_Tran ML 500/230kV ck 2	P1	N-1	< 100	< 100	< 100	< 100	109.4	< 100	< 100	< 100	109.9	< 100	< 100	< 100	Rely on existing Miguel BK 80/BK 81 RAS to trip generation in the greater Imperial Valley area.
	OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	115.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	113.6	< 100	< 100	< 100	110.4	< 100	< 100	< 100	
	EA_ALL_Gen EA GEN1 U6/U7/U8/U9/U10 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	112.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	110.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	109.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	109.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	109.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	EC GEN1_Gen EC GEN1 ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	109.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	KU_GEN_Gen KUMEYAAY ID 1 AND ML_BK81_Tran ML 500/230kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.5	< 100	< 100	< 100	
	ML-230-2T_CB MIGUEL 230kV 2T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	108.9	< 100	< 100	< 100	109.2	< 100	< 100	< 100	
	ML_BK81_Tran ML 500/230kV ck 2 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	111.1	107.1	< 100	< 100	154.4	< 100	< 100	< 100	151.6	< 100	112.1	< 100	On the near term, rely on the existing Miguel BK 80/BK 81 RAS (if necessary, the 30-min emergency rating may also be utilized). If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. The system adjustments and mitigation solutions would be similar to the ones described above for the TL23054/TL23055 P6 overload issues.
	ML_BK81+RAS_Tran ML 500/230kV ck 2 + RAS AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	127.0	< 100	< 100	< 100	122.9	< 100	< 100	< 100	The ISO approved "Miguel-Sycamore Canyon 230 kV line Loop-in to Suncrest" project (ISD 2032) solves this reliability issue in the long term since it includes a third Miguel 500/230 kV bank.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22464 MIGUEL 230 22455 ML MP BK81 500 2 1	ML_BK80_Tran ML 500/230kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	108.2	< 100	< 100	< 100	108.7	< 100	< 100	< 100	Rely on existing Miguel BK 80/BK 81 RAS to trip generation in the greater Imperial Valley area.
	OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	113.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	112.3	< 100	< 100	< 100	109.2	< 100	< 100	< 100	
	EA_ALL_Gen EA GEN1 U6/U7/U8/U9/U10 ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	111.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	108.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	108.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	108.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	108.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	EC GEN1_Gen EC GEN1 ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	108.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	KU_GEN_Gen KUMEYAAY ID 1 AND ML_BK80_Tran ML 500/230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.2	< 100	< 100	< 100	
	ML-230-3T_CB MIGUEL 230kV 3T and 3N	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	108.2	< 100	< 100	< 100	108.7	< 100	< 100	< 100	
	ML_BK80_Tran ML 500/230kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	109.8	105.9	< 100	< 100	152.7	< 100	< 100	< 100	149.9	< 100	110.9	< 100	On the near term, rely on the existing Miguel BK 80/BK 81 RAS (if necessary, the 30-min emergency rating may also be utilized). If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. The system adjustments and mitigation solutions would be similar to the ones described above for the TL23054/TL23055 P6 overload issues.
	ML_BK80+RAS_Tran ML 500/230kV ck 1 + RAS AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	125.6	< 100	< 100	< 100	121.6	< 100	< 100	< 100	The ISO approved "Miguel-Sycamore Canyon 230 kV line Loop-in to Suncrest" project (ISD 2032) solves this reliability issue in the long term since it includes a third Miguel 500/230 kV bank.
22356 IMPRLVLY 230 22361 IV BK80 MP 500 1 1	IV_BK81_Tran IV 500/230kV ck 2 AND IV_BK82_Tran IV 500/230kV ck 3	P6	N-1-1	< 100	< 100	< 100	121.9	104.8	< 100	< 100	< 100	< 100	< 100	< 100	104.3	Rely on the 30-min emergency ratings (20% higher than their 24-hr ratings), to allow the market and operators to bring down the overloads that do not exceed 120% for the P6 contingencies within the 24-hr ratings in 30 minutes as operational mitigation measures. For the contingencies that exceed 120%, the operational mitigations would need to be performed after the first contingency.
22356 IMPRLVLY 230 22911 IV BK81 MP 500 2 1	IV_BK80_Tran IV 500/230kV ck 1 AND IV_BK82_Tran IV 500/230kV ck 3	P6	N-1-1	< 100	< 100	< 100	122.2	105.1	< 100	< 100	< 100	< 100	< 100	< 100	104.5	
22356 IMPRLVLY 230 22362 IV BK82 MP 500 3 1	IV_BK80_Tran IV 500/230kV ck 1 AND IV_BK81_Tran IV 500/230kV ck 2	P6	N-1-1	< 100	< 100	< 100	< 100	105.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22355 IMPRLVLY WST 230 22362 IV BK82 MP 500 3 1	IV_BK80_Tran IV 500/230kV ck 1 AND IV_BK81_Tran IV 500/230kV ck 2	P6	N-1-1	< 100	< 100	< 100	124.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.8	The system adjustment would involve the reduction of the resources connected at Imperial Valley 230 kV substation.
	IV-CLR-230_CLR IMPERIAL VALLEY 230KV AND TL23043_Line IV-WCS 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.5	< 100	< 100	< 100	< 100	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLRs will be normally closed.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22356 IMPRLVLY 230 22357 IV PFC1 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	109.8	105.4	< 100	< 100	142.2	< 100	< 100	< 100	136.6	< 100	106.9	< 100	On the near term, rely on existing TL50001 Gen Drop RAS or TL50003 Gen Drop RAS to trip generation in the greater Imperial Valley area. If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. The system adjustments and mitigation solutions would be similar to the ones described above for the TL23054/TL23055 P6 overload issues. On the long term, rely on the ISO approved "Imperial Valley–North of SONGS 500 kV Line and Substation" project (ISD October 2032) along congestion management by reducing generation output in the greater Imperial Valley area and dispatching conventional gas generation, preferred resources, and/or battery energy storage in the San Diego area after the first contingency for the P6 events.
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS	P6	N-1-1	< 100	< 100	< 100	< 100	106.9	< 100	< 100	< 100	102.7	< 100	< 100	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	110.5	< 100	102.4	< 100	< 100	< 100	< 100	< 100	< 100	
22357 IV PFC1 230 22358 IV PFC 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	125.5	121.1	< 100	< 100	160.5	< 100	< 100	< 100	150.1	104.0	122.7	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS	P6	N-1-1	102.9	< 100	< 100	< 100	120.7	< 100	< 100	< 100	116.2	< 100	100.7	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	103.5	123.8	< 100	116.4	< 100	< 100	< 100	< 100	< 100	< 100	
22357 IV PFC1 230 22358 IV PFC 230 2 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	125.5	121.1	< 100	< 100	160.5	< 100	< 100	< 100	150.1	104.0	122.7	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS	P6	N-1-1	102.9	< 100	< 100	< 100	120.7	< 100	< 100	< 100	116.2	< 100	100.7	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	103.5	123.8	< 100	116.4	< 100	< 100	< 100	< 100	< 100	< 100	
22358 IV PFC 230 20118 ROA-230 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	109.7	105.4	< 100	< 100	142.1	< 100	< 100	< 100	136.6	< 100	106.9	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	110.4	< 100	102.3	< 100	< 100	< 100	< 100	< 100	< 100	
22609 OTAYMESA 230 20149 TJI-230 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	139.4	106.1	< 100	< 100	173.6	< 100	111.0	< 100	168.4	117.0	107.8	< 100	Rely on existing 230 kV Otay Mesa Gen Drop RAS.
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS	P6	N-1-1	116.0	< 100	< 100	< 100	134.4	< 100	< 100	< 100	130.4	< 100	< 100	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	100.4	< 100	130.0	< 100	104.2	< 100	< 100	< 100	< 100	
	TL23041_Line SX-OM-ML 230kV ck 1 AND TL23042_Line BB-OM-ML 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	119.1	
	TL23041+23042_Lines SX-OM-ML 230kV ck 1 + BB-OM-ML 230kV ck 1	P7	DCTL	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	119.1	
20102 RUM-230 230 20118 ROA-230 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	113.8	108.1	< 100	< 100	140.9	< 100	< 100	< 100	133.4	< 100	109.2	< 100	On the near term, rely on existing TL50001 Gen Drop RAS or TL50003 Gen Drop RAS to trip generation in the greater Imperial Valley area. If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. The system adjustments and mitigation solutions would be similar to the ones described above for the TL23054/TL23055 P6 overload issues.
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS	P6	N-1-1	< 100	< 100	< 100	< 100	114.7	< 100	< 100	< 100	108.4	< 100	< 100	< 100	
20238 HRA-230 230 20102 RUM-230 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	124.3	< 100	< 100	< 100	108.7	< 100	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
20238 HRA-230 230 20118 ROA-230 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	130.3	< 100	< 100	< 100	116.4	< 100	< 100	< 100	On the long term, the ISO approved "Imperial Valley–North of SONGS 500 kV Line and Substation" project (ISD October 2032) solves this reliability issue.
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS	P6	N-1-1	< 100	< 100	< 100	< 100	104.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
20900 CUC-400 400 20488 CUC-230 230 1 1	OMECEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50001_Line ECO-ML 500kV ck 1	P3	G-1/N-1	< 100	105.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.6	< 100	On the near term, rely on existing TL23040 IV 500kV N-1 RAS to trip renewable generation in the greater Imperial Valley area. If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P3 events. The system adjustments and mitigation solutions would be similar to the ones described above for the TL23054/TL23055 P6 overload issues.
	OMECEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50001+IV_N-1_RAS_Line ECO-ML 500kV ck 1 + TL23040 IV 500kV N-1 RAS	P3	G-1/N-1	< 100	103.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.6	< 100	
	OMECEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50004_Line IV-ECO 500kV ck 1	P3	G-1/N-1	< 100	101.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	OMECEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL50004+IV_N-1_RAS_Line IV-ECO 500kV ck 1 + TL23040 IV 500kV N-1 RAS	P3	G-1/N-1	< 100	100.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	On the long term, the ISO approved "Imperial Valley–North of SONGS 500 kV Line and Substation" project (ISD October 2032) solves this reliability issue.
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	< 100	152.5	< 100	< 100	144.1	< 100	< 100	< 100	< 100	< 100	154.2	< 100	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003+GEN_DROP_RAS_Line OCO-SCR 500kV ck 1 + GEN DROP RAS	P6	N-1-1	< 100	130.4	< 100	< 100	107.1	< 100	< 100	< 100	< 100	< 100	132.1	< 100	On the near term, rely on existing TL50001 Gen Drop RAS or TL50003 Gen Drop RAS to trip generation in the greater Imperial Valley area. If this is not enough to mitigate the overloads, congestion management and additional system adjustments can be used after the first contingency for the P6 events. The system adjustments and mitigation solutions would be similar to the ones described above for the TL23054/TL23055 P6 overload issues.
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	115.4	< 100	< 100	< 100	< 100	< 100	< 100	
20900 CUC-400 400 20488 CUC-230 230 2 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	115.4	< 100	< 100	< 100	< 100	< 100	< 100	On the long term, rely on the ISO approved "Imperial Valley–North of SONGS 500 kV Line and Substation" project (ISD October 2032) along congestion management by reducing generation output in the greater Imperial Valley area and dispatching conventional gas generation, preferred resources, and/or battery energy storage in the San Diego area after the first contingency for the P6 events.
22609 OTAYMESA 230 22466 MLMS3TAP 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1	P6	N-1-1	116.3	< 100	< 100	< 100	< 100	103.8	< 100	< 100	< 100	< 100	< 100	< 100	Rely on existing TL23041/TL23042 RAS to trip generation at Otay Mesa substation. If RAS is not sufficient to mitigate the overloads, rely on congestion management by reducing generation output in Otay Mesa substation after the first contingency for the P6 events.
22609 OTAYMESA 230 22467 MLSXTAP 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL23042_Line BB-OM-ML 230kV ck 1	P6	N-1-1	115.1	< 100	< 100	< 100	< 100	112.1	< 100	< 100	< 100	< 100	< 100	101.3	
22464 MIGUEL 230 22467 MLSXTAP 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL23042_Line BB-OM-ML 230kV ck 1	P6	N-1-1	117.4	< 100	< 100	< 100	102.4	110.9	< 100	< 100	< 100	< 100	100.2	103.5	
	TL50001_Line ECO-ML 500kV ck 1 AND TL23042+RAS_Line BB-OM-ML 230kV ck 1 + RAS	P6	N-1-1	103.7	< 100	< 100	< 100	102.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22771 BAY BLVD 230 22466 MLMS3TAP 230 1 1	TL23041_Line SX-OM-ML 230kV ck 1 AND TL50001_Line ECO-ML 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	107.0	< 100	< 100	< 100	< 100	< 100	< 100	Add a redundant bus differential relay at Mission 230 kV substation.
22500 MISSION 138 22496 MISSION 69.0 1 1	BUS-MS230-NS_MISSION 230 kV N+S BUS	P5	Non-Redundant Relay	< 100	< 100	< 100	109.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22430 SILVERGT 230 22381 VINE SUB 230 1 1	BUS-MS230-NS_MISSION 230 kV N+S BUS	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	106.7	< 100	< 100	< 100	< 100	< 100	< 100	
	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND TL23028_Line SG-MS-OT 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	108.9	< 100	< 100	< 100	< 100	< 100	< 100	Rely on 2-hr short-term emergency rating (29% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustment that can be implemented is to reduce generation output at Otay Mesa substation.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22430 SILVERGT 230 22771 BAY BLVD 230 1 1	TL23023_Line ML-MS 230kV ck 2 AND TL50003_Line OCO-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	110.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND TL23041_Line SX-OM-ML 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	112.5	< 100	< 100	< 100	< 100	< 100	103.6	Rely on 2-hr short-term emergency rating (29% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustment that can be implemented is to reduce generation output at Otay Mesa substation.
	TL23022+23023_Lines ML-MS 230kV ck 1 + ML-MS 230kV ck 2	P7	DCTL	< 100	< 100	< 100	< 100	107.5	100.7	< 100	< 100	< 100	< 100	< 100	< 100	Rely on 2-hr short-term emergency rating (29% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustments that can be implemented are to reduce generation output in the greater Imperial Valley area and dispatch conventional gas generation, preferred resources, and/or battery energy storage in the San Diego area north of the constraint.
22592 OLD TOWN 69.0 22596 OLD TOWN 230 1 1	OT_BK71_Tran OT 230/69kV ck 2	P1	N-1	< 100	< 100	100.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on the 30-min short-term emergency ratings (15% higher than their 24-hr ratings). If the overload persists for more than 30 minutes, then the operators could eliminate the identified thermal overload. The system adjustments that can be implemented is to open TL604 Old Town - Vine or TL613 Old Town - Pacific Beach 69 kV lines to reduce the loading on the remaining transformer.
	OT-230-2S_CB OLD TOWN 230kV 2S	P4	Fault + Stuck Breaker	< 100	< 100	100.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22592 OLD TOWN 69.0 22596 OLD TOWN 230 2 1	OT_BK70_Tran OT 230/69kV ck 1	P1	N-1	< 100	< 100	100.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	The ISO approved "Downtown Reliability Reinforcement" project (ISD 2037) will further reduce the loading of these 230/69 kV transformers due to the Vine substation expansion, that includes a new 230/69 kV transformer.
	OT-230-1N_CB OLD TOWN 230kV 1N	P4	Fault + Stuck Breaker	< 100	< 100	100.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22596 OLD TOWN 230 22504 MISSION 230 1 1	TL23026_Line SG-BB 230kV ck 1 AND TL23028_Line SG-MS-OT 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	113.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on system adjustments by dispatch battery energy storage at Silvergate substation after the first contingency for the P6 event.
22597 OLDTWNTP 230 22504 MISSION 230 1 1	TL23026_Line SG-BB 230kV ck 1 AND TL23027_Line OT-MS 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	115.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22596 OLD TOWN 230 22381 VINE SUB 230 1 1	TL23026_Line SG-BB 230kV ck 1 AND TL23028_Line SG-MS-OT 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	118.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL23020+23042_Lines BB-ML 230kV ck 1 + BB-OM-ML 230kV ck 1	P7	DCTL	< 100	< 100	< 100	106.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on 2-hr short-term emergency rating (29% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustment that can be implemented is to dispatch battery energy storage at Silvergate substation.
22476 MIGUELTP 69.0 22456 MIGUEL 69.0 1 1	TL23020_Line BB-ML 230kV ck 1 AND TL23042_Line BB-OM-ML 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	100.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concern identified in the 2040 Summer Peak case and discuss with the PTO the potential for upgrade solutions.
	TL23020+23042_Lines BB-ML 230kV ck 1 + BB-OM-ML 230kV ck 1	P7	DCTL	< 100	< 100	< 100	100.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22227 ENCINATP 230 22716 SANLUSRY 230 1 1	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND TL23003_Line SA-EA 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	126.4	Rely on existing TL23003/TL23011 RAS to trip generation at Encina substation.
22716 SANLUSRY 230 22232 ENCINA 230 1 1	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND TL23011_Line SA-EA-PEN 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.4	
22716 SANLUSRY 230 24131 S.ONOFRE 230 1 1	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	105.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	EA_ALL_Gen EA GEN1 U6/U7/U8/U9/U10 ID 1 AND TL23007_Line SJC-SO 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	103.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions	
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE		
22844 TALEGA 230 24131 S.ONOFRE 230 1 1	ES_GEN2_Gen CALPK_ES ID 1 AND TL23007_Line SJC-SO 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	100.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	On the 2027 Spring Off Peak sensitivity case, rely on congestion management by limiting the charging of battery energy storage in San Diego area after the first contingency for P3 events.	
	IV_GEN1_ALL_Gen IV GEN1 CT2/CT3/STG ID 1 AND TL23007_Line SJC-SO 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	100.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		On the long term, rely on congestion management by reducing generation output in the greater Imperial Valley area and dispatching conventional gas generation, preferred resources, and/or battery energy storage in the San Diego area after the first contingency for the P3 and P6 events.
	OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL23007_Line SJC-SO 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	102.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL23007_Line SJC-SO 230kV ck 1	P3	G-1/N-1	< 100	< 100	100.9	110.6	< 100	< 100	< 100	< 100	< 100	105.2	< 100	< 100		
	SO_SC_Gen SONGS SC A1 ID 1 AND TL23007_Line SJC-SO 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	101.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	< 100	< 100	< 100	101.6	< 100	< 100	< 100	< 100	< 100	108.3	< 100	< 100	Add a redundant bus differential relay at San Luis Rey 230 kV substation.	
	TL50001_Line ECO-ML 500kV ck 1 AND TL50003-Loop2_Line GR1304_POI-SCR 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	114.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on congestion management by reducing generation output in the greater Imperial Valley area and dispatching conventional gas generation, preferred resources, and/or battery energy storage in the San Diego area after the first contingency for the P6 events.	
	TL23007_Line SJC-SO 230kV ck 1 AND TL50002_Line NG-IV 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.3	< 100	< 100	Rely on congestion management by limiting the charging of battery energy storage in San Diego area after the first contingency for P6 events.
	TL23007+23030_Lines SJC-SO 230kV ck 1 + ES-TA-SJC 230kV ck 1	P7	DCTL	< 100	< 100	< 100	101.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concern identified in the 2040 Summer Peak case and discuss with the PTO the potential for upgrade solutions.
228442 NSONGS 230 228444 NSONGSMP1 500 1 1	NSONGS_BK81_Tran NSONGS 500/230kV ck 2 AND NSONGS_BK82_Tran NSONGS 500/230kV ck 3	P6	N-1-1	< 100	< 100	< 100	103.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on congestion management by dispatching conventional gas generation, preferred resources, and/or battery energy storage in the San Diego area after the first contingency for the P6 events.	
228442 NSONGS 230 228446 NSONGSMP2 500 2 1	NSONGS_BK80_Tran NSONGS 500/230kV ck 1 AND NSONGS_BK82_Tran NSONGS 500/230kV ck 3	P6	N-1-1	< 100	< 100	< 100	103.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
228442 NSONGS 230 228448 NSONGSMP3 500 3 1	NSONGS_BK80_Tran NSONGS 500/230kV ck 1 AND NSONGS_BK81_Tran NSONGS 500/230kV ck 2	P6	N-1-1	< 100	< 100	< 100	103.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100		
22112 CAPSTRNO 138 22396 LAGNA NL 138 1 1	TL13847_Line SJC-LNL 138kV ck 2	P1	N-1	< 100	< 100	< 100	< 100	< 100	102.2	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concerns identified in the 2040 Winter Peak case and discuss with the PTO the potential for upgrade solutions.	
	SJC-138-16T_CB CAPSTRNO 138kV 16T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	< 100	101.9	< 100	< 100	< 100	< 100	< 100	< 100		
22112 CAPSTRNO 138 22396 LAGNA NL 138 2 1	TL13837_Line SJC-LNL 138kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	102.2	< 100	< 100	< 100	< 100	< 100	< 100		
	SJC-138-14T_CB CAPSTRNO 138kV 14T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	< 100	102.4	< 100	< 100	< 100	< 100	< 100	< 100		
22840 TALEGA 138 22720 SANMATEO 138 1 1	TL13831_Line TA-RMV 138kV ck 1 AND TL13836_Line TA-PI 138kV ck 1	P6	N-1-1	< 100	< 100	106.2	115.5	< 100	118.7	< 100	< 100	< 100	< 100	< 100	125.6	For the 2035 Summer Peak, 2040 Summer Peak, and 2040 Winter Peak base cases, rely on congestion management by dispatching Capistrano 138 kV battery energy storage after the first contingency for the P6 event. For the 2035 Summer Peak sensitivity case, rely on congestion management by limiting the dispatch of Talega 138 kV battery energy storage after the first contingency for the P6 event.	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22500 MISSION 138 22120 CARLTNHS 138 1 1	SX_BK60_TransX 230/138kV ck 1 AND TL13811_Line SH-NCM-CC 138kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.8	< 100	< 100	Rely on congestion management by curtailing the charging of Sycamore Canyon 138 kV battery energy storage after the first contingency for the P6 events.
22124 CHCARITA 138 22578 NRTHCTYMTRTP 138 1 1	TL13822_Line MS-CH 138kV ck 1 AND SX_BK60_TransX 230/138kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	130.9	< 100	< 100	
	TL23071_Line SX-PQ 230kV ck 1 AND IV-NSONGS_Line IV-NSONGS 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.3	Rely on congestion management by reducing the discharge of Sycamore Canyon 138 kV battery energy storage after the first contingency for the P6 events.
22831 SYCAMORE 138 22124 CHCARITA 138 1 1	TL23071_Line SX-PQ 230kV ck 1 AND IV-NSONGS_Line IV-NSONGS 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.2	
22192 DOUBLTTP 138 22300 FRIARS 138 1 1	PQ-138-8N_CB PENASQUITOS 138kV 8N	P4	Fault + Stuck Breaker	< 100	< 100	< 100	103.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concerns identified in the 2040 Summer Peak case and discuss with the PTO the potential for upgrade solutions.
	TL13804_Line PQ-EA-BQ 138kV ck 1 AND PQ_BK60_TransPQ 230/138kV ck 1	P6	N-1-1	< 100	< 100	< 100	103.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL23013_Line PQ-OT 230kV ck 1 AND TL23071_Line SX-PQ 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	101.6	Rely on congestion management by reducing the discharge of Silvergate battery energy storage after the first contingency for the P6 event.
22672 PRCTRVLY 138 22460 MIGUEL 138 1 1	ML_BK60_TransML 230/138kV ck 1 AND TL23026_Line SG-BB 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	102.4	< 100	< 100	< 100	< 100	< 100	< 100	Rely on 30-min short-term emergency rating (17% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustment that can be implemented is to reduce the output of Otay Mesa gas generation.
Valley Center System	TL681_Line AS-VC-FE 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Diverge	< 100	< 100	On the near term, limit the charging of Valley Center battery energy storage, mainly outside daylight hours, to avoid the P0 concerns. Additionally, rely on existing Valley Center RAS to further reduce the charging of Valley Center energy storage for the remaining P1, P2 and P6 events. The ISO approved "Valley Center System Improvement" project (ISD 2028) solves this reliability issue in the long term.
22870 VALCNTR 69.0 22012 ASH TP 69.0 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	138.0	< 100	< 100	
	TL688_Line ES-LI 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	162.6	< 100	< 100	
	TL6926_Line RIN-VC 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	160.9	< 100	< 100	
	TL683_Line RIN-LI 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	157.3	< 100	< 100	
	TL637_Line ST-CRE 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	144.7	< 100	< 100	
	ES-69-SW_Bus ESCONDIDO 69kV SW	P2	Bus Section Fault	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	160.6	< 100	< 100	
	LI-69-S_Bus LILAC 69kV S	P2	Bus Section Fault	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	157.9	< 100	< 100	
	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	161.6	< 100	< 100	Add a redundant bus differential relay at San Luis Rey 230 kV substation.
	TL688_Line ES-LI 69kV ck 1 AND TL6932_Line LI-PA 69kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	174.3	< 100	< 100	On the near term, limit the charging of Valley Center battery energy storage, mainly outside daylight hours, to avoid the P0 concerns. Additionally, rely on existing Valley Center RAS to further reduce the charging of Valley Center energy storage for the remaining P1, P2 and P6 events. The ISO approved "Valley Center System Improvement" project (ISD 2028) solves this reliability issue in the long term.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22008 ASH 69.0 22012 ASH TP 69.0 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.0	< 100	< 100	On the near term, limit the charging of Valley Center battery energy storage, mainly outside daylight hours, to avoid the P0 concerns. Additionally, rely on existing Valley Center RAS to further reduce the charging of Valley Center energy storage for the remaining P1, P2, P3, and P6 events. The ISO approved "Valley Center System Improvement" project (ISD 2028) solves this reliability issue in the long term.
	TL688_Line ES-LI 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	127.8	< 100	< 100	
	TL6926_Line RIN-VC 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	125.6	< 100	< 100	
	TL683_Line RIN-LI 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	123.2	< 100	< 100	
	TL689_Line BE-FE-ES 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	115.2	< 100	< 100	
	ES-69-SW_Bus ESCONDIDO 69kV SW	P2	Bus Section Fault	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	127.6	< 100	< 100	
	LI-69-S_Bus LILAC 69kV S	P2	Bus Section Fault	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	124.4	< 100	< 100	
	PALL_BESS_PALL_BESS ID 1 AND TL688_Line ES-LI 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	130.1	< 100	< 100	
	PALL_BESS_PALL_BESS ID 1 AND TL679_Line ES-FE 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	113.5	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL637_Line ST-CRE 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.3	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND TL637_Line ST-CRE 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.1	< 100	< 100	
	BR_U2_Gen BORREGO ID 60 AND TL637_Line ST-CRE 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.0	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND TL679_Line ES-FE 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.9	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL685_Line WR-ST 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.2	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND TL685_Line WR-ST 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.0	< 100	< 100	
	BR_U2_Gen BORREGO ID 60 AND TL685_Line WR-ST 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.9	< 100	< 100	
	OMEC_ALL_Gen OTAYMGT1/GT2/ST1 ID 1 AND TL23072_Line ARR-PEN 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.1	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL679_Line ES-FE 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.5	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND ARR_BK70_Tran ARR 230/69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.6	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6912_Line PN-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.0	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL691_Line MN-PN-AV 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.5	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND ARR_BK70_Tran ARR 230/69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.2	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND TL6912_Line PN-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.2	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND TL50002_Line NG-IV 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.0	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND TL6917_Line CRE-SX 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.0	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL694_Line ME-NORTHVALLEY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.8	< 100	< 100	
	AV_GEN1_Gen AV GEN1 ID 1 AND TL691_Line MN-PN-AV 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.7	< 100	< 100	
	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	120.6	< 100	< 100	Add a redundant bus differential relay at San Luis Rey 230 kV substation.
	TL688_Line ES-LI 69kV ck 1 AND TL6932_Line LI-PA 69kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	136.5	< 100	< 100	On the near term, limit the charging of Valley Center battery energy storage, mainly outside daylight hours, to avoid the P0 concerns mentioned above. Additionally, rely on existing Valley Center RAS to further reduce the charging of Valley Center energy storage for the remaining P1, P2, P3, and P6 events.
22256 ESCNDIDO 69.0 22008 ASH 69.0 2 1	ES-69-SW_Bus ESCONDIDO 69kV SW	P2	Bus Section Fault	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	120.1	< 100	< 100	The ISO approved "Valley Center System Improvement" project (ISD 2028) solves this reliability issue in the long term.
22256 ESCNDIDO 69.0 22404 LILAC 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	126.7	< 100	< 100	Add a redundant bus differential relay at San Luis Rey 230 kV substation.
22404 LILAC 69.0 22624 PALA 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	114.0	< 100	< 100	
22256 ESCNDIDO 69.0 22724 SANMRCOS 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	158.1	158.2	180.1	183.0	136.8	189.6	116.1	< 100	< 100	158.2	161.9	121.7	
22624 PALA 69.0 22508 MNSRATTP 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	< 100	< 100	103.8	105.1	< 100	111.3	< 100	< 100	< 100	< 100	< 100	< 100	
22440 MELROSE 69.0 22442 MELRSETP 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	113.0	110.0	123.5	120.2	< 100	133.1	< 100	< 100	< 100	140.0	112.3	< 100	
22442 MELRSETP 69.0 22724 SANMRCOS 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	203.1	195.7	< 100	< 100	170.1	104.8	154.4	< 100	129.1	228.3	199.2	< 100	
22708 SAN LUIS REY 69.0 22582 OCEAN RANCH 69.0 1 1	TL693_Line ME-SA 69kV ck 1	P1	N-1	< 100	< 100	107.0	103.3	< 100	105.0	< 100	< 100	< 100	130.8	< 100	< 100	For the 2030 Summer Peak cases, rely on congestion management by dispatching Melrose battery energy storage after the first contingency for P3
	TL6912_Line PN-SA 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	119.5	< 100	< 100	
	TL691_Line MN-PN-AV 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	116.5	< 100	< 100	
	PA_GEN1_Gen PA GEN1 ID 1 AND TL693_Line ME-SA 69kV ck 1	P3	G-1/N-1	< 100	100.1	113.6	109.9	< 100	111.6	< 100	< 100	< 100	< 100	103.7	< 100	
	PA_GEN2_Gen PA GEN2 ID 1 AND TL693_Line ME-SA 69kV ck 1	P3	G-1/N-1	< 100	100.1	113.6	109.9	< 100	111.6	< 100	< 100	< 100	< 100	103.7	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22700 SANLUSRY 69.0 22502 COLUMBIANCH 69.0 1 1	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL693_Line ME-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	113.5	109.8	< 100	111.4	< 100	< 100	< 100	137.0	103.2	< 100	events. For the 2035 Summer Peak and 2040 Summer Peak and Winter Peak cases, rely on pre-contingency congestion management to protect against the P1 outage by dispatching Melrose battery energy storage. Furthermore, for P3 events, rely on Avocado battery energy storage after the first contingency. For the 2027 Spring Off-Peak sensitivity case, rely on pre-contingency congestion management to protect against the P1 outages by limiting the charging of Melrose and Avocado battery energy storage. Furthermore, for the P3 and P6 events, rely on additional Avocado battery energy storage charging curtailment after the first contingency.
	ES_GEN2_Gen CALPK_ES ID 1 AND TL693_Line ME-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	109.2	105.5	< 100	107.2	< 100	< 100	< 100	< 100	< 100	< 100	
	PA_GEN1_Gen PA GEN1 ID 1 AND TL680_Line SA-ME-SM 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	100.8	< 100	< 100	< 100	< 100	< 100	< 100	
	PA_GEN2_Gen PA GEN2 ID 1 AND TL680_Line SA-ME-SM 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	100.8	< 100	< 100	< 100	< 100	< 100	< 100	
	TL23014_Line PEN-ES 230kV ck 1 AND TL23015_Line PEN-ES 230kV ck 2	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	112.0	< 100	< 100	
22440 MELROSE 69.0 22708 SANLUSRY 69.0 1 1	TL6966_Line OR-SA 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.9	< 100	< 100	
	TL6979_Line ME-OR 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.3	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6966_Line OR-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	115.3	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6979_Line ME-OR 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.7	< 100	< 100	
22016 AVCADOTP 69.0 22020 AVOCADO 69.0 1 1	TL698_Line AV-MN-PA 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	132.5	< 100	< 100	Rely on existing Avocado RAS that reduces the charging of Avocado battery energy storage.
	PA-69-W_Bus PALA 69kV W	P2	Bus Section Fault	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	132.5	< 100	< 100	
22640 PENDLETN 69.0 22016 AVCADOTP 69.0 1 1	TL694_Line ME-NORTHVALLEY 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.2	< 100	< 100	
	TL6901_Line MN-NORTHVALLEY 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.9	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL694_Line ME-NORTHVALLEY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110.4	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6901_Line MN-NORTHVALLEY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.1	< 100	< 100	
	PA_U1_Gen PALA ID 88 AND TL694_Line ME-NORTHVALLEY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	101.9	< 100	< 100	
22640 PENDLETN 69.0 22708 SANLUSRY 69.0 1 1	TL694_Line ME-NORTHVALLEY 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.8	< 100	< 100	
	TL6901_Line MN-NORTHVALLEY 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	112.7	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL694_Line ME-NORTHVALLEY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	122.2	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6901_Line MN-NORTHVALLEY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.1	< 100	< 100	
	TL6912_Line PN-SA 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.6	< 100	< 100	Rely on pre-contingency congestion management to protect against the P1 outage by limiting the charging of Avocado battery energy storage outside daylight hours. Furthermore, for P3 events, rely on additional Avocado battery energy storage charging curtailment after the first contingency.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22512 MONSRATE 69.0 22528 NORTHVALLEY 69.0 1 1	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6912_Line PN-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.7	< 100	< 100	energy storage charging curtailment after the first contingency.
	ME_BAT_Gen ME GEN 1 ID BS1/BS2 AND TL6912_Line PN-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.0	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL691_Line MN-PN-AV 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	101.6	< 100	< 100	
22528 NORTHVALLEY 69.0 22440 MELROSE 69.0 1 1	TL6912_Line PN-SA 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	111.9	< 100	< 100	
	TL691_Line MN-PN-AV 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.1	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6912_Line PN-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	116.0	< 100	< 100	
	ME_BAT_Gen ME GEN 1 ID BS1/BS2 AND TL6912_Line PN-SA 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	114.3	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL691_Line MN-PN-AV 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.1	< 100	< 100	
	ME_BAT_Gen ME GEN 1 ID BS1/BS2 AND TL691_Line MN-PN-AV 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.5	< 100	< 100	
22256 ESCNDIDO 69.0 22260 ESCNDIDO 230 2 1	ES-230-2N_CB ESCONDIDO 230kV 2N	P4	Fault + Stuck Breaker	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	114.9	< 100	< 100	Limit the charging of battery energy storage installed at Escondido 69 kV substation outside daylight hours to avoid P4 concerns.
22708 SANLUSRY 69.0 22584 OCEANSDE 69.0 1 1	TL690_Line SA-OS-STU-LP 69kV ck 1	P1	N-1	< 100	< 100	106.5	134.8	< 100	110.5	< 100	< 100	< 100	< 100	< 100	106.9	TL690B and TL697 Reconductor project submitted by the PTO in the Request Window.
	TL23007_Line SJC-SO 230kV ck 1 AND TL23052_Line TA-SO 230kV ck 1	P6	N-1-1	< 100	< 100	100.2	117.2	< 100	103.1	< 100	< 100	< 100	< 100	< 100	< 100	
	TL23007+23052_Lines SJC-SO 230kV ck 1 + TA-SO 230kV ck 1	P7	DCTL	< 100	< 100	100.2	117.2	< 100	103.1	< 100	< 100	< 100	< 100	< 100	< 100	
22588 OCNSDETP 69.0 22584 OCEANSDE 69.0 1 1	TL697_Line SA-OS 69kV ck 1	P1	N-1	< 100	< 100	106.3	134.3	< 100	110.0	< 100	< 100	< 100	< 100	< 100	106.5	Add a redundant bus differential relay at San Luis Rey 230 kV substation.
	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	107.0	128.3	143.0	159.0	102.0	138.3	< 100	< 100	< 100	119.9	132.1	< 100	
22588 OCNSDETP 69.0 22808 STUARTTP 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	114.1	148.3	162.6	167.1	< 100	142.8	< 100	< 100	< 100	180.1	155.5	< 100	Rely on existing TL695 at TA overload scheme in the near term.
	TL23007_Line SJC-SO 230kV ck 1 AND TL23052_Line TA-SO 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	106.7	< 100	101.1	< 100	< 100	< 100	108.0	< 100	< 100	
	TL23007+23052_Lines SJC-SO 230kV ck 1 + TA-SO 230kV ck 1	P7	DCTL	< 100	< 100	< 100	106.7	< 100	101.1	< 100	< 100	< 100	108.0	< 100	< 100	Continue to monitor the thermal overload concerns identified in the 2040 Summer Peak and Winter Peak cases and discuss with the PTO the potential for upgrade solutions.
22808 STUARTTP 69.0 22400 LASPULGS 69.0 1 1	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	252.8	102.1	111.7	114.1	< 100	< 100	133.4	< 100	101.9	388.9	107.0	< 100	Add a redundant bus differential relay at San Luis Rey 230 kV substation.
	TL23007_Line SJC-SO 230kV ck 1 AND TL23052_Line TA-SO 230kV ck 1	P6	N-1-1	159.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.5	224.0	< 100	< 100	Rely on existing TL695 at TA overload scheme in the near term.
	TL23007+23052_Lines SJC-SO 230kV ck 1 + TA-SO 230kV ck 1	P7	DCTL	159.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.5	224.0	< 100	< 100	TL690E Stuart Tap-Las Pulgas 69 kV Reconductor project (ISD June 2029) mitigates the overload in the long term.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22604 OTAY 69.0 22616 OTAYLKTP 69.0 1 1	BD_GEN3_Gen CALPK_BD ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	132.8	191.4	128.9	107.5	< 100	< 100	< 100	< 100	< 100	< 100	For the 2030 Summer Peak and 2040 Winter Peak cases, and some contingencies for the 2035 Summer Peak and 2040 Summer Peak cases, rely on 30-min short-term emergency rating (22% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustment that can be implemented is to dispatch Border battery energy storage. For the contingencies that exceed 122% in the 2035 Summer Peak case, rely on congestion management by dispatching Border battery energy storage after the first contingency for P3 events. Continue to monitor the thermal overload concerns identified in the 2040 Summer Peak case and discuss with the PTO the potential for upgrade solutions since energy storage cannot be completely charged to solve the worst P3 contingencies. For the 2030 Summer Off Peak base case, 2027 Spring Off Peak base case and 2027 Summer Peak sensitivity case, rely on congestion management by dispatching additional Border gas generation after the first contingency for P3 events. For the 2035 Spring Off Peak base case and 2027 Spring Off Peak sensitivity case, rely on congestion management by limiting the charging of Border battery energy storage after the first contingency for P3 and P6 events.
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	116.6	174.2	118.2	< 100	123.7	< 100	132.5	146.4	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	116.6	174.2	118.1	< 100	< 100	< 100	< 100	146.4	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL6935_Line BD-BD GEN1&2 69kV ck 1	P3	G-1/N-1	< 100	100.3	121.6	152.2	< 100	111.3	< 100	< 100	< 100	< 100	103.3	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL623_Line OY-IB-SYO 69kV ck 1	P3	G-1/N-1	< 100	< 100	109.2	152.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL6910_Line BD-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	141.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL623_Line OY-IB-SYO 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	141.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL623_Line OY-IB-SYO 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	141.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL6910_Line BD-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	125.5	< 100	< 100	< 100	< 100	104.1	116.6	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL6910_Line BD-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	125.5	< 100	< 100	< 100	< 100	< 100	116.6	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND BD_GEN1_Gen LRKSPBD1 ID 1	P3	G-1-1	< 100	< 100	< 100	117.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND BD_GEN2_Gen LRKSPBD2 ID 1	P3	G-1-1	< 100	< 100	< 100	117.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND BD_GEN3_Gen CALPK_BD ID 1	P3	G-1-1	< 100	< 100	< 100	117.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND BD_GEN3_Gen CALPK_BD ID 1	P3	G-1-1	< 100	< 100	< 100	117.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL6936_Line BD-BD GEN3 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	111.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL6936_Line BD-BD GEN3 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	111.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND BD_GEN2_Gen LRKSPBD2 ID 1	P3	G-1-1	< 100	< 100	< 100	109.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND BD_GEN1_Gen LRKSPBD1 ID 1	P3	G-1-1	< 100	< 100	< 100	109.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND ML_BK70_Tran ML 230/69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND ML_BK71_Tran ML 230/69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	105.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	Q1045_Gen Q1045_GEN ID 1 AND ML_BK70_Tran ML 230/69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.4	< 100	< 100	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
	Q1045_Gen Q1045_GEN ID 1 AND ML_BK71_Tran ML 230/69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.4	< 100	< 100	< 100	< 100	
	Q1045_Gen Q1045_GEN ID 1 AND TL50001_Line ECO-ML 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.6	< 100	< 100	< 100	< 100	
	Q1045_Gen Q1045_GEN ID 1 AND TL50004_Line IV-ECO 500kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.6	< 100	< 100	< 100	< 100	
	Q1045_Gen Q1045_GEN ID 1 AND TL623_Line OY-IB-SYO 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	135.7	< 100	< 100	< 100	< 100	
	ML_BK70_Tran ML 230/69kV ck 1 AND TL23026_Line SG-BB 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.1	< 100	< 100	< 100	< 100	
22616 OTAYLKTP 69.0 22080 BORDERTP 69.0 1 1	TL6964_Line ML-SLT 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.1	< 100	< 100	< 100	< 100	Rely on pre-contingency congestion management to protect against the P1 outage by limiting the charging of Border battery energy storage.
	TL6910_Line BD-SLT 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.6	< 100	< 100	< 100	< 100	
22076 BORDER 69.0 22080 BORDERTP 69.0 1 1	TL6964_Line ML-SLT 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.1	< 100	< 100	< 100	< 100	
	TL6910_Line BD-SLT 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.6	< 100	< 100	< 100	< 100	
22076 BORDER 69.0 22698 SALT CREEK 69.0 1 1	TL649_Line OY-OL-SYO-BD 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.5	< 100	< 100	< 100	< 100	
22456 MIGUEL 69.0 22698 SALT CREEK 69.0 1 1	TL649_Line OY-OL-SYO-BD 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.0	< 100	< 100	< 100	< 100	
22768 BAY BLVD 69.0 22604 OTAY 69.0 1 1	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL646_Line BB-OY 69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	111.3	< 100	< 100	Rely on congestion management by limiting the charging of Otay or Border battery energy storage after the first contingency for P3 events.
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL646_Line BB-OY 69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	111.3	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND TL646_Line BB-OY 69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	100.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on congestion management by dispatching Otay or Border battery energy storage after the first contingency for P3 events.
22768 BAY BLVD 69.0 22604 OTAY 69.0 2 1	TL6964_Line ML-SLT 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	107.1	< 100	< 100	< 100	< 100	Rely on pre-contingency congestion management to protect against the P1 outage by limiting the charging of Otay or Border battery energy storage.
	TL6910_Line BD-SLT 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	106.7	< 100	< 100	< 100	< 100	
	TL645_Line BB-OY 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.2	< 100	102.6	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.8	< 100	< 100	Rely on congestion management by limiting the charging of Otay or Border battery energy storage after the first contingency for P3 events.
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.5	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	117.8	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.5	< 100	< 100	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	100.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on congestion management by dispatching Otay or Border battery energy storage after the first contingency for P3 events.
	OY_GEN_Gen OY GEN ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	106.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22768 BAY BLVD 69.0 22352 IMPRLBCH 69.0 1 1	TL646_Line BB-OY 69kV ck 2	P1	N-1	< 100	< 100	< 100	101.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on 30-min short-term emergency rating (27% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustments that can be implemented are to dispatch battery energy storage at Otay or Border substations. Continue to monitor the thermal overload concerns identified in the 2040 Winter Peak case due TL623 Otay-Imperial Beach-San Ysidro contingency and discuss with the PTO the potential for upgrade solutions.
	TL623_Line OY-IB-SYO 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	100.2	< 100	< 100	< 100	< 100	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND TL646_Line BB-OY 69kV ck 2	P3	G-1/N-1	< 100	< 100	103.6	115.8	< 100	112.0	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL646_Line BB-OY 69kV ck 2	P3	G-1/N-1	< 100	< 100	101.0	113.1	< 100	109.4	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL646_Line BB-OY 69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	110.7	< 100	107.1	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL646_Line BB-OY 69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	110.7	< 100	107.1	< 100	< 100	< 100	< 100	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	107.1	< 100	105.2	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.1	< 100	103.3	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	103.0	< 100	101.3	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL645_Line BB-OY 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	103.0	< 100	101.3	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN1_Gen LRKSPBD1 ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	102.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN2_Gen LRKSPBD2 ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	102.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND TL6964_Line ML-SLT 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	100.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND TL6935_Line BD-BD GEN1&2 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	100.9	< 100	< 100	< 100	< 100	< 100	< 100	
	BD_GEN3_Gen CALPK_BD ID 1 AND TL6935_Line BD-BD GEN1&2 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	100.5	< 100	< 100	< 100	< 100	< 100	< 100	
	OY_GEN_Gen OY GEN ID 1 AND TL649_Line OY-OL-SYO-BD 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	103.9	< 100	< 100	< 100	< 100	< 100	< 100	
22352 IMPRLBCH 69.0 22608 OTAY TP 69.0 1 1	TL647_Line BB-IB 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	101.6	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concern identified in the 2040 Winter Peak case and discuss with the PTO the potential for upgrade solutions.
22740 SANYSYRO 69.0 22608 OTAY TP 69.0 1 1	TL649_Line OY-OL-SYO-BD 69kV ck 1	P1	N-1	< 100	< 100	< 100	103.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	TL623C Reconductor project submitted by the PTO in the Request Window.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22208 EL CAJON 69.0 22408 LOSCOCHS 69.0 1 1	EC-69-S_Bus EL CAJON 69kV S	P2	Bus Section Fault	< 100	< 100	< 100	109.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concern identified in the 2040 Summer Peak case and discuss with the PTO the potential for upgrade solutions.
	EC GEN1_Gen EC GEN1 ID 1 AND TL6985_Line GR- LCS 69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	100.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on congestion management by dispatching El Cajon battery energy storage after the first contingency for the P3 event.
22136 CLAIMNT 69.0 22140 CLARMTTP 69.0 1 1	TL670_Line MS-CM 69kV ck 1	P1	N-1	< 100	< 100	100.0	105.9	< 100	117.9	< 100	< 100	< 100	< 100	< 100	< 100	TL600B Reconductor project submitted by the PTO in the Request Window.
22160 DEL MAR 69.0 22644 PENSQTOS 69.0 2 1	TL6952_Line NCW-PQ 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	114.9	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concerns identified in the 2040 Winter Peak case and discuss with the PTO the potential for upgrade solutions.
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL6952_Line NCW-PQ 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	117.7	< 100	< 100	< 100	< 100	< 100	< 100	
	PEC_ALL_Gen PEN_CT1/CT2/ST ID 1 AND TL610_Line DM-PQ 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	102.8	< 100	< 100	< 100	< 100	< 100	< 100	
22252 ENCINITAS 69.0 22160 DEL MAR 69.0 1 1	TL616_Line SF-ARR-LHM 69kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	107.0	< 100	< 100	< 100	< 100	< 100	< 100	New Penasquitos – Mira Sorrento 69 kV #2 line project submitted by the PTO in the Request Window.
22644 PENSQTOS 69.0 22164 DELMARTP 69.0 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	101.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL662_Line PQ-TP 69kV ck 1	P1	N-1	< 100	< 100	< 100	105.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL6959_Line MTO-PQ 69kV ck 1	P1	N-1	< 100	< 100	< 100	100.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22188 DOUBLTTP 69.0 22164 DELMARTP 69.0 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	101.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL662_Line PQ-TP 69kV ck 1	P1	N-1	< 100	< 100	< 100	105.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL6959_Line MTO-PQ 69kV ck 1	P1	N-1	< 100	< 100	< 100	100.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22331 MIRASNT0 69.0 22644 PENSQTOS 69.0 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	116.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL6943_Line TP-UCM 69kV ck 1	P1	N-1	< 100	< 100	< 100	109.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL6905_Line GE-PQ 69kV ck 2	P1	N-1	< 100	< 100	< 100	108.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22856 TOREYPNS 69.0 22200 DUNHILTP 69.0 1 1	TL662_Line PQ-TP 69kV ck 1	P1	N-1	< 100	< 100	< 100	101.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22856 TOREYPNS 69.0 22864 UCM 69.0 1 1	TL6959_Line MTO-PQ 69kV ck 1	P1	N-1	< 100	< 100	< 100	105.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22200 DUNHILTP 69.0 22188 DOUBLTTP 69.0 1 1	TL662_Line PQ-TP 69kV ck 1	P1	N-1	< 100	< 100	< 100	105.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL6959_Line MTO-PQ 69kV ck 1	P1	N-1	< 100	< 100	< 100	100.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
22644 PENSQTOS 69.0 22444 MESA RIM 69.0 1 1	TL668_Line MRGT-MR 69kV ck 1 AND TL6916_Line SX-SS 69kV ck 1	P6	N-1-1	< 100	< 100	< 100	103.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concerns identified in the 2040 Summer Peak case and discuss with the PTO the potential for upgrade solutions.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22540 NARROWS 69.0 22884 WARNERS 69.0 1 1	Base Case	P0	Base Case	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.7	< 100	< 100	< 100	Rely on congestion management to mitigate the P0 overload by reducing the solar generation output at Borrego 69 kV substation.
	BR_U2_Gen BORREGO ID 60	P1	G-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.7	< 100	< 100	< 100	< 100	Rely on existing TL686 RAS that reduces the solar generation output at Borrego 69 kV substation.
22668 POWAY 69.0 22664 POMERADO 69.0 1 1	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND TL23051_Line SX-ARR 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.8	Rely on 30-min short-term emergency rating (13% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload. The system adjustment that can be implemented is to reduce the dispatch of Pomerado battery energy storage.
	TL23071_Line SX-PQ 230kV ck 1	P1	N-1	< 100	< 100	< 100	108.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	108.1	
	PQ_BK71_Tran PQ 230/69kV ck 2	P1	N-1	< 100	< 100	< 100	106.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	PQ_BK70_Tran PQ 230/69kV ck 1	P1	N-1	< 100	< 100	< 100	106.5	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TL668_Line MRGT-MR 69kV ck 1	P1	N-1	< 100	< 100	< 100	106.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.8	
	MRGT-69_Bus MIRAMAR GT 69kV	P2	Bus Section Fault	< 100	< 100	< 100	108.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	105.1	
	MR-69-W_Bus MIRAMAR 69kV W	P2	Bus Section Fault	< 100	< 100	< 100	106.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT1_Gen MEF MR1 ID 1 AND TL23071_Line SX-PQ 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	116.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	115.0	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND TL23071_Line SX-PQ 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	116.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	114.9	
	MEF_UNIT1_Gen MEF MR1 ID 1 AND PQ_BK71_Tran PQ 230/69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	114.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.4	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND PQ_BK71_Tran PQ 230/69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	114.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.4	
	MEF_UNIT1_Gen MEF MR1 ID 1 AND PQ_BK70_Tran PQ 230/69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	113.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.1	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND PQ_BK70_Tran PQ 230/69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	113.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	103.1	
	EA_ALL_Gen EA GEN1 U6/U7/U8/U9/U10 ID 1 AND TL23071_Line SX-PQ 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	112.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	111.7	
	MEF_UNIT1_Gen MEF MR1 ID 1 AND TL668_Line MRGT-MR 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	108.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.8	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND TL668_Line MRGT-MR 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	108.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on the 30-min short-term emergency rating (20% higher than its normal rating), giving the market and operators enough time to eliminate the identified P1, P2, P3 and P4 thermal overloads.
	MEF_UNIT1_Gen MEF MR1 ID 1 AND MEF_UNIT2_Gen MEF MR2 ID 1	P3	G-1-1	< 100	< 100	< 100	106.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND MEF_UNIT1_Gen MEF MR1 ID 1	P3	G-1-1	< 100	< 100	< 100	106.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	For the 2035 Summer Peak sensitivity case, the system adjustments that can be implemented are to reduce Pomerado and Goalline battery energy storage and/or Sycamore Canyon long duration energy storage.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
22828 SYCAMORE 69.0 22756 SCRIPPS 69.0 1 1	MEF_UNIT1_Gen MEF MR1 ID 1 AND PQ_BK60_Tran PQ 230/138kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	106.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concerns identified in the 2040 Summer Peak case and discuss with the PTO the potential for upgrade solutions.
	MEF_UNIT1_Gen MEF MR1 ID 1 AND TL675_Line PQ-MRM 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	106.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND PQ_BK60_Tran PQ 230/138kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	106.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND TL675_Line PQ-MRM 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	106.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT1_Gen MEF MR1 ID 1 AND TL6906_Line MRM-PQ 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	106.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND TL6906_Line MRM-PQ 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT1_Gen MEF MR1 ID 1 AND TL639_Line SX-EL 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT1_Gen MEF MR1 ID 1 AND TL616_Line SF-ARR-LHM 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND TL639_Line SX-EL 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MEF_UNIT2_Gen MEF MR2 ID 1 AND TL616_Line SF-ARR-LHM 69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	105.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	EA_ALL_Gen EA GEN1 U6/U7/U8/U9/U10 ID 1 AND PQ_BK60_Tran PQ 230/138kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	101.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	MRGT_GEN1_Gen MRGT GEN1 ID 1 AND TL23071_Line SX-PQ 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	112.8	
	MRGT_GEN1_Gen MRGT GEN1 ID 1 AND PQ_BK71_Tran PQ 230/69kV ck 2	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	101.1	
	MRGT_GEN1_Gen MRGT GEN1 ID 1 AND PQ_BK70_Tran PQ 230/69kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.8	
	PQ-138-8N_CB PENASQUITOS 138kV 8N	P4	Fault + Stuck Breaker	< 100	< 100	< 100	106.9	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	For the 2030 Summer Off Peak case, rely on 30-min short-term emergency rating (20% higher than its normal rating), giving the market and operators enough time to eliminate the identified thermal overload by increasing the dispatch of Miramar gas units.
	TL23026_Line SG-BB 230kV ck 1 AND TL23071_Line SX-PQ 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	118.6	105.4	101.5	< 100	< 100	< 100	< 100	< 100	117.6	
	TL23071_Line SX-PQ 230kV ck 1 AND TL668_Line MRGT-MR 69kV ck 1	P6	N-1-1	< 100	< 100	< 100	120.8	< 100	101.7	< 100	< 100	< 100	< 100	< 100	120.9	
	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND TL23071_Line SX-PQ 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	117.0	< 100	102.3	< 100	< 100	< 100	< 100	< 100	121.6	
																Continue to monitor the thermal overload concerns identified in the 2040 Summer Peak and 2040 Winter Peak cases and discuss with the PTO the potential for upgrade solutions.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
19020 BLYTHE 161 19105 GLT TAP 161 1 1	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.7	< 100	< 100	Rely on congestion management by limiting the charging of battery energy storage at Hoodoo Wash substation after the first contingency for the P6 event.
19041 PARKER 161 19046 BOUSE 161 1 1	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	109.6	< 100	< 100	
19041 PARKER 161 19020 BLYTHE 161 1 1	HDW-NG_Line HDW-NG 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	102.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.7	< 100	Rely on congestion management by dispatching battery energy storage at Imperial Valley substation after the first contingency for the P6 event.
19020 BLYTHE 161 21731 VEGA_3_SS 161 1 1	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P1	N-1	< 100	< 100	< 100	104.4	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	IID is planning a new RAS that will drop generation for the loss of the S-LINE or transformation at El Centro substation. This RAS would mitigate the thermal overloads.
	IV-230-19T_CB IMPERIAL VALLEY 230KV 19T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	104.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	161.8	< 100	145.4	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1 AND DEL-CIELO AZUL_Line DELANY-CIELO AZUL 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	114.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	IID is planning a new RAS that will drop generation for the loss of the S-LINE or transformation at El Centro substation. This RAS would mitigate the thermal overloads.
	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1 AND VAL-ALB_Line VAL-ALB 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	112.9	< 100	110.5	< 100	102.6	< 100	< 100	< 100	< 100	
19020 BLYTHE 161 24017 BLYTHESC 161 1 1	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P1	N-1	< 100	< 100	< 100	110.7	< 100	102.0	< 100	< 100	< 100	< 100	< 100	< 100	
	S-LINE2_Line WIXOM_SS-ELCENTSW 230kV ck 1	P1	N-1	< 100	< 100	< 100	107.6	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	IV-NSONGS_Line IV-NSONGS 500kV ck 1	P1	N-1	< 100	< 100	< 100	106.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Rely on pre-contingency congestion management to protect against the P1 outage by reducing generation output at Imperial Valley substation and dispatching conventional gas generation, preferred resources, and battery energy storage in the San Diego area.
	IV_BK82_Tran IV 500/230kV ck 3	P1	N-1	< 100	< 100	< 100	103.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	IV-230-19T_CB IMPERIAL VALLEY 230KV 19T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	109.6	< 100	101.2	< 100	< 100	< 100	< 100	< 100	< 100	IID is planning a new RAS that will drop generation for the loss of the S-LINE or transformation at El Centro substation. This RAS would mitigate the thermal overloads.
	IV-500-8032_CB IMPERIAL VALLEY 500kV 8032	P4	Fault + Stuck Breaker	< 100	< 100	< 100	106.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	Continue to monitor the thermal overload concerns identified in the 2040 Summer Peak case and discuss with the PTO and affected TO the potential for upgrade solutions.
	IV-230-17T_CB IMPERIAL VALLEY 230KV 17T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	103.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	ECO-500-1T_CB EAST COUNTY 500kV 1T or 1E	P4	Fault + Stuck Breaker	< 100	< 100	< 100	102.3	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	125.2	< 100	< 100	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
19045 COOLIDGE 230 19502 ROGSWAPA 230 1 1	HDW-NG_Line HDW-NG 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	101.7	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.3	Rely on congestion management by reducing the generation dispatch of SunZia wind after the first contingency for the P6 events.
	MNKP-ELDR_Line MOENKOPI-ELDORDO 500kV ck 1 AND TL50002_Line NG-IV 500kV ck 1	P6	N-1-1	< 100	100.0	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	100.2	< 100	
21331 EC161_SS 161 21025 ELCENTSW 230 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	102.9	< 100	< 100	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
21331 EC161_SS 161 21059 PILOT_KNB161 161 1 1	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P1	N-1	< 100	< 100	< 100	116.2	< 100	110.6	< 100	124.6	< 100	< 100	< 100	< 100	IID is planning a new RAS that will drop generation for the loss of the S-LINE or transformation at El Centro substation. This RAS would mitigate the thermal overloads.
	S-LINE2_Line WIXOM_SS-ELCENTSW 230kV ck 1	P1	N-1	< 100	< 100	< 100	101.6	< 100	< 100	< 100	117.8	< 100	< 100	< 100	< 100	
	PV_UNIT1_Gen PALOVRD1 ID 1 AND S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P3	G-1/N-1	< 100	< 100	100.7	118.4	< 100	113.6	< 100	126.7	< 100	< 100	< 100	< 100	
	PV_UNIT1_Gen PALOVRD1 ID 1 AND S-LINE2_Line WIXOM_SS-ELCENTSW 230kV ck 1	P3	G-1/N-1	< 100	< 100	< 100	103.8	< 100	< 100	< 100	119.9	< 100	< 100	< 100	< 100	
	IV_GEN1_ALL_Gen IV GEN1 CT2/CT3/STG ID 1 AND S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P3	G-1/N-1	< 100	< 100	100.0	< 100	< 100	112.7	< 100	< 100	< 100	< 100	< 100	< 100	
	IV-230-19T_CB IMPERIAL VALLEY 230KV 19T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	118.8	< 100	112.1	< 100	127.5	< 100	< 100	< 100	< 100	
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	101.1	Diverge	< 100	200.5	< 100	191.5	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1 AND DEL-CIELO AZUL_Line DELANY-CIELO AZUL 500kV ck 1	P6	N-1-1	< 100	< 100	102.4	127.2	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	IID is planning a new RAS that will drop generation for the loss of the S-LINE or transformation at El Centro substation. This RAS would mitigate the thermal overloads.
	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1 AND HDW-NG_Line HDW-NG 500kV ck 1	P6	N-1-1	< 100	< 100	104.4	123.8	< 100	118.4	< 100	131.4	< 100	< 100	< 100	< 100	
21072 YUCCA161 161 21059 PILOT_KNB161 161 1 1	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	121.2	< 100	< 100	Rely on congestion management by limiting the charging of battery energy storage at Hoodoo Wash substation after the first contingency for the P6 event.
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	102.5	< 100	107.5	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
19051 KNOB 161 21059 PILOT_KNB161 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	104.3	< 100	< 100	< 100	< 100	< 100	Diverge	
21072 YUCCA161 161 84846 YUCCA W 69.0 2 1	HDW-NG_Line HDW-NG 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	104.4	< 100	< 100	< 100	< 100	< 100	100.6	< 100	For the 2030 Summer Off Peak case, rely on congestion management by reducing generation output at Hoodoo Wash substation and dispatching conventional gas generation, preferred resources, and battery energy storage in the San Diego area.
	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	116.5	100.9	< 100	For the 2030 Summer Peak sensitivity case, rely on congestion management by dispatching battery energy storage at Imperial Valley substation after the first contingency for the P6 event. For the 2027 Spring Off Peak sensitivity case, rely on congestion management by limiting the charging of battery energy storage at Hoodoo Wash substation after the first contingency for the P6 event.
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	104.9	< 100	108.5	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
21072 YUCCA161 161 84846 YUCCA W 69.0 2 1	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.2	< 100	< 100	Rely on congestion management by limiting the charging of battery energy

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
19105 GLT TAP 161 19051 KNOB 161 1 1	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.4	< 100	< 100	storage at Hoodoo Wash substation after the first contingency for the P6 event.
21331 EC161_SS 161 21334 ECSS_EAST 92.0 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	133.2	< 100	129.3	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLRs will be normally closed.
21047 NILAND161 161 21808 CVSUB161 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	105.8	< 100	115.9	< 100	< 100	< 100	Diverge	
21361 NILAND 92.0 21047 NILAND161 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	< 100	< 100	113.0	< 100	< 100	< 100	Diverge	
21731 VEGA_3_SS 161 21047 NILAND161 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	121.5	< 100	131.5	< 100	< 100	< 100	Diverge	
21204 ARKANSAS_SS 161 21047 NILAND161 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	128.7	< 100	124.0	< 100	< 100	< 100	Diverge	
21204 ARKANSAS_SS 161 21203 ALHAMBRA_SS 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	111.0	< 100	< 100	< 100	< 100	< 100	Diverge	
21331 EC161_SS 161 21203 ALHAMBRA_SS 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	102.5	< 100	< 100	< 100	< 100	< 100	Diverge	
21090 IPP-130-TAP 161 21806 AVE58TP1 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	119.2	< 100	115.4	< 100	< 100	< 100	Diverge	21805 AVE58 161 21806 AVE58TP1 161 1 1
	S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P1	N-1	< 100	< 100	< 100	126.0	< 100	121.7	< 100	130.2	< 100	< 100	< 100	101.5	
	S-LINE2_Line WIXOM_SS-ELCENTSW 230kV ck 1	P1	N-1	< 100	< 100	< 100	112.8	< 100	108.4	< 100	124.1	< 100	< 100	< 100	< 100	
	IV-NSONGS_Line IV-NSONGS 500kV ck 1	P1	N-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	104.4	
	IV-230-19T_CB IMPERIAL VALLEY 230KV 19T	P4	Fault + Stuck Breaker	< 100	< 100	< 100	125.0	< 100	121.0	< 100	129.1	< 100	< 100	< 100	101.1	
	IV-500-8032_CB IMPERIAL VALLEY 500kV 8032	P4	Fault + Stuck Breaker	< 100	< 100	< 100	100.1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	206.2	< 100	192.6	< 100	< 100	< 100	Diverge	
	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	130.0	< 100	127.0	< 100	132.7	< 100	< 100	< 100	108.3	
	NG-IV-2_Line NG-IV 500kV ck 2 AND S-LINE1_Line WIXOM_SS-IV_WST 230kV ck 1	P6	N-1-1	< 100	< 100	< 100	128.3	< 100	124.5	< 100	133.3	< 100	< 100	< 100	< 100	
	IV-NSONGS_Line IV-NSONGS 500kV ck 1 AND IV_BK82_Tran IV 500/230kV ck 3	P6	N-1-1	< 100	< 100	< 100	108.8	< 100	< 100	< 100	< 100	< 100	< 100	< 100	118.3	
21805 AVE58 161 21807 AVE58TP2 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	102.8	< 100	< 100	< 100	< 100	< 100	Diverge	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
21807 AVE58TP2 161 21808 CVSUB161 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	102.6	< 100	< 100	< 100	< 100	< 100	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLRs will be normally closed.
21279 CVSUB92 92.0 21808 CVSUB161 161 1 1	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	< 100	< 100	< 100	Diverge	< 100	107.3	< 100	111.5	< 100	< 100	< 100	Diverge	
	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	102.6	< 100	< 100	Rely on congestion management by limiting the charging of battery energy storage at Hoodoo Wash substation after the first contingency for the P6 event.

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
SUNCREST 500 kV	TL50001_Line ECO-ML 500kV ck 1 AND TL23040_Line OM-TJI 230kV ck 1	P6	N-1-1	0.945 < V < 1.1	0.945 < V < 1.1	0.945 < V < 1.1	0.945 < V < 1.1	0.91	0.945 < V < 1.1	0.945 < V < 1.1	0.945 < V < 1.1	0.87	0.945 < V < 1.1	0.945 < V < 1.1	0.945 < V < 1.1	Rely on congestion management by reducing generation output in the greater Imperial Valley area and dispatching conventional gas generation, preferred resources, and/or battery energy storage in the San Diego area after the first contingency for the P6 event.
SUNCREST 230 kV	TL50001_Line ECO-ML 500kV ck 1 AND TL23040_Line OM-TJI 230kV ck 1	P6	N-1-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
SNCRS SVC HV 230 kV	TL50001_Line ECO-ML 500kV ck 1 AND TL23040_Line OM-TJI 230kV ck 1	P6	N-1-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.90	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
AV GEN_HV 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.79	0.83	0.81	0.79	0.88	0.80	0.88	0.9 < V < 1.05	0.87	0.72	0.81	0.9 < V < 1.05	Add a redundant bus differential relay at San Luis Rey 230 kV substation.
AVOCADO 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.79	0.83	0.81	0.79	0.88	0.80	0.88	0.9 < V < 1.05	0.87	0.72	0.81	0.9 < V < 1.05	
BASILONE 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.88	0.9 < V < 1.05	0.9 < V < 1.05	
LASPULGS 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.86	0.87	0.84	0.82	0.9 < V < 1.05	0.86	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.80	0.86	0.9 < V < 1.05	
LILAC 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	0.9 < V < 1.05	0.9 < V < 1.05	
ME GEN 1 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.77	0.80	0.78	0.76	0.86	0.78	0.87	0.9 < V < 1.05	0.87	0.72	0.79	0.9 < V < 1.05	
MELROSE 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.77	0.80	0.78	0.76	0.86	0.78	0.87	0.9 < V < 1.05	0.87	0.72	0.79	0.9 < V < 1.05	
MONSRATE 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.79	0.83	0.81	0.79	0.89	0.81	0.88	0.9 < V < 1.05	0.88	0.73	0.82	0.9 < V < 1.05	
NORTHVALLEY 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.78	0.81	0.79	0.77	0.87	0.79	0.87	0.9 < V < 1.05	0.87	0.73	0.80	0.9 < V < 1.05	
OCEAN RANCH 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.77	0.80	0.78	0.76	0.86	0.78	0.87	0.9 < V < 1.05	0.87	0.72	0.79	0.9 < V < 1.05	
OCEANSDE 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.78	0.79	0.76	0.74	0.85	0.77	0.88	0.9 < V < 1.05	0.87	0.72	0.78	0.9 < V < 1.05	
PA GEN 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.85	0.9 < V < 1.05	0.89	0.88	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.78	0.90	0.9 < V < 1.05	
PALA 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.85	0.9 < V < 1.05	0.89	0.88	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.78	0.89	0.9 < V < 1.05	
PENDLETN 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.79	0.82	0.80	0.78	0.88	0.80	0.88	0.9 < V < 1.05	0.88	0.74	0.81	0.9 < V < 1.05	
SANLUSRY 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.78	0.80	0.78	0.76	0.86	0.78	0.88	0.9 < V < 1.05	0.87	0.73	0.79	0.9 < V < 1.05	
SANMRCOS 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.89	0.9 < V < 1.05	0.89	0.88	0.9 < V < 1.05	0.89	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.86	0.90	0.9 < V < 1.05	
STUART 69 kV	BUS-SA230-EW_SAN LUIS REY 230 kV E+W BUS	P5	Non-Redundant Relay	0.80	0.81	0.78	0.76	0.87	0.79	0.89	0.9 < V < 1.05	0.89	0.73	0.80	0.9 < V < 1.05	
BORREGO 69 kV	BR_GEN1_Gen BR GEN1 ID 1 AND TL23066_Line IV-DW 230kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	Verify PV resources connected to the distribution system are
	BR_GEN1_Gen BR GEN1 ID 1 AND TL23066_Line IV-DW 230kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND TL50005_Line IV-OCO 500kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND PV_UNIT1_Gen PALOVRD1 ID 1	P3	G-1-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND TL23067_Line DW-DW GEN1 230kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
	BR_GEN1_Gen BR GEN1 ID 1 AND TL23011_Line SA-EA-PEN 230kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	properly regulating voltage. If the distribution connected resources are properly regulating voltage, then rely on system adjustments by charging the Borrego WDAT energy storage after the first contingency for the P3 events.
BR GEN HV 69 kV	BR_GEN1_Gen BR GEN1 ID 1 AND TL23066_Line IV-DW 230kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND TL50005_Line IV-OCO 500kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND PV_UNIT1_Gen PALOVRD1 ID 1	P3	G-1-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND TL23067_Line DW-DW GEN1 230kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND TL23011_Line SA-EA-PEN 230kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
	BR_GEN1_Gen BR GEN1 ID 1 AND TL683_Line RIN-LI 69kV ck 1	P3	G-1/N-1	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	1.05	0.9 < V < 1.05	0.9 < V < 1.05	0.9 < V < 1.05	
ALHAMBRA 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
ALHAMBRA_SS 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
ARKANSAS 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
ARKANSAS_SS 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
AVE58 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.81	0.9 < V < 1.1	0.84	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
CVSUB161 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.83	0.9 < V < 1.1	0.85	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
VEGA_3_SS 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.85	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
NILAND161 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.85	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
BLYTHEAZ 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.83	0.9 < V < 1.1	0.89	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	Rely on congestion management by limiting the charging of battery energy storage in San Diego area after the first contingency for the P6 events.
	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.89	0.9 < V < 1.1	0.9 < V < 1.1	
BLYTHE 161 kV	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.89	0.9 < V < 1.1	0.9 < V < 1.1	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.83	0.9 < V < 1.1	0.89	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
GILA 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.86	0.9 < V < 1.1	0.88	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	Rely on congestion management by limiting the charging of battery energy storage in San Diego area after the first contingency for the P6 events.
	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	
KNOB 161 kV	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.82	0.9 < V < 1.1	0.85	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
KOFA 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.86	0.9 < V < 1.1	0.89	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	Rely on congestion management by limiting the charging of battery energy storage in San Diego area after the first
	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
PILOT_KNB161 161 kV	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	battery energy storage in San Diego area after the first contingency for the P6 events.
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.81	0.9 < V < 1.1	0.84	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.
WLTNMOHK 161 kV	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.85	0.9 < V < 1.1	0.88	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	
	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.86	0.9 < V < 1.1	0.9 < V < 1.1	Rely on congestion management by limiting the charging of battery energy storage in San Diego area after the first contingency for the P6 events.
YUCCA161 161 kV	HAA-HDW_Line HAA-HDW 500kV ck 1 AND HAA-NG_Line HAA-NG 500kV ck 1	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	0.87	0.9 < V < 1.1	0.9 < V < 1.1	
	IV_BK82_Tran IV 500/230kV ck 3 AND IV-CLR-230_CLR IMPERIAL VALLEY 230KV	P6	N-1-1	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	0.9 < V < 1.1	0.81	0.9 < V < 1.1	0.84	0.9 < V < 1.1	0.9 < V < 1.1	0.9 < V < 1.1	Diverge	The revised scope of the "Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers" project (ISD 2035) will mitigate this reliability concern as both CLR's will be normally closed.

Overloaded Facility	Contingency (P1 and P3)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								Post Cont. Voltage Deviation % (Sensitivity Scenarios)				Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	

No P1 and P3 contingency resulted in a voltage deviation above 8%

Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios			
			2030 Summer Peak	2035 Summer Peak	2027 Spring Off-Peak	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	
SA-230 BUS SAN LUIS REY 230kV E+W	P5.5	Non-Redundant Relay	No issues	TPL-001-WECC-CRT-4 WR1 1.4 criteria violation	No issues	TPL-001-WECC-CRT-4 WR1 1.4 criteria violation	No issues	No issues	Add a redundant bus differential relay at San Luis Rey 230 kV substation.
SN-138 BUS SANTEE 138kV E+W	P5.5	Non-Redundant Relay	No issues	No issues	No issues	No issues	No issues	No issues	No violation
SH-138 BUS SHADOWRIDGE 138kV E+W	P5.5	Non-Redundant Relay	No issues	No issues	No issues	No issues	No issues	No issues	No violation
SG-230 BUS SILVERGATE 230kV E+W	P5.5	Non-Redundant Relay	No issues	No issues	No issues	No issues	No issues	No issues	No violation
SX-138 BUS SYCAMORE CANYON 138kV N+S	P5.5	Non-Redundant Relay	No issues	No issues	No issues	No issues	No issues	No issues	No violation
TA-138 BUS TALEGA 138kV E+W	P5.5	Non-Redundant Relay	No issues	No issues	No issues	No issues	No issues	No issues	No violation
TC-138 BUS TELEGRAPH CANYON 138kV N+S	P5.5	Non-Redundant Relay	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at ML 230kV, trip both lines MIGUEL - MISSION 230kV	P7	DCTL	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at SA 230kV, trip TL23002 and TL23010 SANLUSRY - S.ONOFRE 230kV	P7	DCTL	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at SO 230kV, trip both lines S.ONOFRE - SANTIAGO 230kV	P7	DCTL	No issues	-	No issues	No issues	No issues	-	No violation
DLO 3PH Fault at NSONGS 230kV, trip both lines NSONGS - SANTIAGO 230kV	P7	DCTL	-	No issues	-	-	-	No issues	No violation
DLO 3PH Fault at SA 230kV, trip both lines SANLUSRY SC - MISSION 230kV	P7	DCTL	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at OM 230kV, trip MIGUEL - BAY BLVD - OTAYMESA and MIGUEL - SYCAMORE - OTAYMESA 230kV	P7	DCTL	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at ML 230kV, trip MIGUEL - SYCAMORE 230kV and MIGUEL - SYCAMORE - OTAYMESA 230kV	P7	DCTL	No issues	-	No issues	No issues	No issues	-	No violation
DLO 3PH Fault at ML 230kV, trip MIGUEL - SUNCREST 230kV and MIGUEL - SYCAMORE - OTAYMESA 230kV	P7	DCTL	-	No issues	-	-	-	No issues	No violation
DLO 3PH Fault at SA 230kV, trip SANLUSRY - ENCINA 230kV and SANLUSRY - ENCINATP 230kV	P7	DCTL	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at PEN 230kV, trip PEN - ARTESN 230kV and PEN - ENCINATP 230kV	P7	DCTL	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at SCR 230kV, trip both lines SUNCREST - SYCAMORE 230kV	P7	DCTL	No issues	No issues	No issues	No issues	No issues	No issues	No violation
DLO 3PH Fault at NSONGS 230kV, trip two lines S.ONOFRE - NSONGS 230kV	P7	DCTL	-	No issues	-	-	-	No issues	No violation
DLO 3PH Fault at SO 230kV, trip S.ONOFRE - NSONGS ck 3 230kV and S.ONOFRE - SERRANO 230kV ck 1	P7	DCTL	-	No issues	-	-	-	No issues	No violation

Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)												Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	

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

Substation	Load Served (MW)												Potential Mitigation Solutions
	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2030 Summer Off-Peak	2040 Winter Peak	2027 Spring Off-Peak	2035 Spring Off-Peak	2027 Summer Peak Heavy Renewable & Minimum Gas Generation	2027 Spring Off-Peak Storage charging in load pockets	2030 Summer Peak 1-in-20 load forecast	2035 Summer Peak with high South to North power flow from SDG&E to SCE	

No single source substation with more than 100 MW

Overstated Facility	Contingency (All and Worst PE)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Spring Off-Peak	2035 Spring Off-Peak	2040 Winter Peak	2027 SP with Forecasted Load Addition	2030 SP with Forecasted Load Addition	2027 OP BESS Charging	
18022 NVEST 230 180021 DESERT VIEW 230 1 1	P1 2 Line NVEST 230.0 to DESERT VIEW 230.0 Circuit 2	P1	N-1	<100	<100	<100	109.7	<100	<100	<100	<100	<100	<100	<100	Congestion management
18022 NVEST 230 180021 DESERT VIEW 230 2 1	P1 2 Line NVEST 230.0 to DESERT VIEW 230.0 Circuit 2	P1	N-1	<100	<100	<100	109.7	<100	<100	<100	<100	<100	<100	<100	Congestion management
18073 IS TAP 138 18098 SL FLO 138	PA2-32, SLOAN, CYN 5 500.0 to TROUT CANYON 500.0 #1 & SLOAN, CYN 5 500.0 to TROUT CANYON 500.0 #2, BKR SC8112	P4	Stuck Bkr	<100	<100	<100	<100	<100	<100	103.2	123.4	<100	<100	<100	Existing TC RAS
180000 PAHRUMP 230 180007 PAHRUMP 138 1 1	P1 53 PAHR 230PAHR 138 Ch 2+P1 55 GAMES 200GAMES 138 Ch 1	P6	N-1-1	<100	<100	121.0	147.7	<100	<100	<100	133.02	109.0	116.0	<100	Congestion management
180000 PAHRUMP 230 180007 PAHRUMP 138 2 1	P1 52 PAHR 230PAHR 138 Ch 1+P1 55 GAMES 200GAMES 138 Ch 1	P6	N-1-1	<100	<100	<100	130.6	<100	<100	<100	117.08	<100	103.0	<100	Congestion management
180000 SANDY 138 180020 GAMEBIRD 138 1 1	PA2-32, SLOAN, CYN 5 500.0 to TROUT CANYON 500.0 #1 & SLOAN, CYN 5 500.0 to TROUT CANYON 500.0 #2, BKR SC8112	P4	N-1-1	<100	<100	<100	<100	<100	<100	<100	102.8	<100	<100	<100	Existing TC RAS
180020 GAMEBIRD 138 180007 PAHRUMP 138 1 1	P1 41 S, CYN 5, ELD 500 Ch 1+P1 55 GAMES 200GAMES 138 Ch 1	P6	N-1-1	<100	<100	<100	104.2	<100	<100	<100	<100	<100	<100	<100	Existing UVLS scheme
180043 GAMEBIRD 230 180020 GAMEBIRD 138 1 1	P1 53 PAHR 230PAHR 138 Ch 1+P1 53 PAHR 230PAHR 138 Ch 2	P6	N-1-1	<100	<100	<100	106.7	<100	<100	<100	<100	<100	<100	<100	Congestion management
180043 GAMEBIRD 230 180020 GAMEBIRD 138 1 1	PT-1-2, PAHRUMP-WHEELER PASS 1 230 & PAHRUMP-WHEELER PASS 2 230	P7	DCTL	<100	<100	<100	106.7	<100	<100	<100	<100	<100	<100	<100	Existing Gamebird RAS
180043 GAMEBIRD 230 180020 GAMEBIRD 138 1 1	PT-1-6, TROUT CANYON-SLOAN, CYN #1 500 & TROUT CANYON-SLOAN, CYN #2 500	P7	DCTL	<100	<100	106.8	Diverge	<100	<100	<100	<100	<100	<100	<100	Existing TC RAS and congestion management
180301 VEA PST 2 138 18073 IS TAP 138 1 1	PA2-32, SLOAN, CYN 5 500.0 to TROUT CANYON 500.0 #1 & SLOAN, CYN 5 500.0 to TROUT CANYON 500.0 #2, BKR SC8112	P4	Stuck Bkr	<100	<100	106.3	<100	<100	<100	<100	112.5	132.0	<100	<100	Existing TC RAS
180301 VEA PST 2 138 18073 IS TAP 138 1 1	PT-1-4, INNOVATION-DESERT VIEW 1 230 & INNOVATION-DESERT VIEW 2 230	P7	DCTL	<100	<100	<100	Diverge	<100	<100	<100	105.5	<100	<100	<100	Existing Innovation RAS and congestion management
180301 VEA PST 2 138 18073 IS TAP 138 1 1	PT-1-5, NVEST-DESERT VIEW 1 230 & NVEST-DESERT VIEW 2 230	P7	DCTL	<100	<100	<100	Diverge	<100	<100	<100	102.5	<100	<100	<100	Existing Innovation RAS and congestion management
Shon Canyon 500/230 TRF	P1 5 JOE DCTL S, CYN 5 500 Ch 1+P1 41 S, CYN 5, ELD 500 Ch 1	P6	N-1-1	<100	<100	<100	121.4	<100	<100	<100	<100	<100	<100	<100	Congestion management
Trout Canyon 500/230 Ch 1	P1 60 TC 500TC 230 Ch 2+P1 61 TC 500TC 230 Ch 3	P6	N-1-1	<100	<100	<100	135.5	<100	<100	<100	<100	<100	<100	<100	Congestion management
System	P1 111, ELD2, PRIMM 230, CKT 1 +P1 112, ELD2, N/ANPAH 230, CKT 1	P6	N-1-1	Diverge	Diverge	<100	<100	<100	Diverge	<100	Diverge	Diverge	Diverge	<100	Existing Ivapah RAS
System	P1 6, ELD2, S CANYON 230, Ch 1+P1 113, ED 230, CKT 5, ST 13,8	P6	N-1-1	Diverge	Diverge	<100	<100	<100	Diverge	<100	Diverge	Diverge	Diverge	<100	Existing Ivapah RAS



Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Spring Off-Peak	2035 Spring Off-Peak	2040 Winter Peak	2027 SP with Forecasted Load Addition	2030 SP with Forecasted Load Addition	2027 CP BESS Charging	
CHARLSTN, GAMEBIRD, SANDY, THSND AIR 138kV	P1_27_GAMEB_PAHRUMP_138_Ckt_1+P1_55_GAMEB_230GAMEB_138_Ckt_1_	P6	N-1-1	Low Voltage	<0.9	<0.9	<0.9	0.9+P.U.+1.1	0.9+P.U.+1.1	<0.9	0.9+P.U.+1.1	<0.9	<0.9	<0.9	0.9+P.U.+1.1	Existing UVLS scheme
		P4	Stuck Brk	Low Voltage	<0.9	<0.9	<0.9	0.9+P.U.+1.1	0.9+P.U.+1.1	<0.9	0.9+P.U.+1.1	<0.9	<0.9	<0.9	0.9+P.U.+1.1	Existing UVLS scheme
SLOAN, CYN 5 500kV, TROUT CANYON 230kV	P1_5_HAE_SVCL_S_CYN_5_500_Ckt_1+P1_41_S_CYN_5_ELD_500_Ckt_1_	P6	N-1-1	High Voltage	0.9+P.U.+1.1	0.9+P.U.+1.1	0.9+P.U.+1.1	0.9+P.U.+1.1	>1.1	0.9+P.U.+1.1	0.9+P.U.+1.1	0.9+P.U.+1.1	0.9+P.U.+1.1	0.9+P.U.+1.1	>1.1	S.C. reactor (previously approved project)



Substation	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Spring Off-Peak	2035 Spring Off-Peak	2040 Winter Peak	2027 SP with Forecasted Load Addition	2030 SP with Forecasted Load Addition	2027 OP BESS Charging	

No P1 or P3 contingencies resulted in voltage deviation greater than 8%.

Stab	
Stab	



Worst Contingency	Category	Category Description	Amount of Load Drop (MW)											Potential Mitigation Solutions
			2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Spring Off-Peak	2035 Spring Off-Peak	2040 Winter Peak	2027 SP with Forecasted Load Addition	2030 SP with Forecasted Load Addition	2027 OP BESS Charging	

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



Substation	Load Served (MW)											Potential Mitigation Solutions
	2027 Summer Peak	2030 Summer Peak	2035 Summer Peak	2040 Summer Peak	2027 Spring Off-Peak	2030 Spring Off-Peak	2035 Spring Off-Peak	2040 Winter Peak	2027 SP with Forecasted Load Addition	2030 SP with Forecasted Load Addition	2027 OP BESS Charging	

No single source substation with more than 100 MW