



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-1	31610 TYLER 60.0 31603 CANAL TP 60.0 2	Normal	P0	N-0	<100	102.71	<100	<100	<100				Explore potential mitigation
CYVL-T-2	31611 RASN JNT 60.0 31603 CANAL TP 60.0 2	Normal	P0	N-0	<100	111.53	<100	<100	<100				Explore potential mitigation
CYVL-T-3	31722 GLENN 60.0 31733 CAPYSWCH 60.0 3	Normal	P0	N-0	105.48	105.57	107.81	<100	<100				Explore potential mitigation
CYVL-T-4	31733 CAPYSWCH 60.0 31731 CAPAYJCT 60.0 3	Normal	P0	N-0	105.51	105.59	107.83	<100	<100				Explore potential mitigation
CYVL-T-5	31735 CHICO JT 60.0 31738 ANITA 60.0 3	Normal	P0	N-0	117.95	118.34	121.37	<100	<100				Explore potential mitigation
CYVL-T-6	32082 PLFLDJCT 60.0 32092 PLAINFLD 60.0 1	Normal	P0	N-0	108.69	110.08	<100	<100	<100				Explore potential mitigation
CYVL-T-7	32088 VACA-DXN 60.0 32090 WINTERS 60.0 1	Normal	P0	N-0	103.99	104.92	<100	<100	<100				Explore potential mitigation
CYVL-T-8	32342 E.NICOLS 60.0 32344 PLUMAS 60.0 1	Normal	P0	N-0	<100	101.13	<100	<100	<100				Explore potential mitigation
CYVL-T-12	31610 TYLER 60.0 31603 CANAL TP 60.0 2	Normal	P0	N-0	<100	102.71	<100	<100	<100				Explore potential mitigation
CYVL-T-13	31611 RASN JNT 60.0 31603 CANAL TP 60.0 2	Normal	P0	N-0	<100	111.53	<100	<100	<100				Explore potential mitigation
CYVL-T-14	32082 PLFLDJCT 60.0 32092 PLAINFLD 60.0 1	Normal	P0	N-0	108.69	110.08	<100	<100	<100				Explore potential mitigation
CYVL-T-15	32088 VACA-DXN 60.0 32090 WINTERS 60.0 1	Normal	P0	N-0	103.99	104.92	<100	<100	<100				Explore potential mitigation
CYVL-T-28	31610 TYLER 60.0 31603 CANAL TP 60.0 2	Normal	P0	N-0	<100	102.71	<100	<100	<100				Explore potential mitigation
CYVL-T-29	31611 RASN JNT 60.0 31603 CANAL TP 60.0 2	Normal	P0	N-0	<100	111.53	<100	<100	<100				Explore potential mitigation
CYVL-T-30	32082 PLFLDJCT 60.0 32090 WINTERS 60.0 1	Normal	P0	N-0	107.37	108.75	<100	<100	<100				Explore potential mitigation
CYVL-T-31	32082 PLFLDJCT 60.0 32092 PLAINFLD 60.0 1	Normal	P0	N-0	108.69	110.08	<100	<100	<100				Explore potential mitigation
CYVL-T-32	32088 VACA-DXN 60.0 32090 WINTERS 60.0 1	Normal	P0	N-0	103.99	104.92	<100	<100	<100				Explore potential mitigation
CYVL-T-35	32342 E.NICOLS 60.0 32344 PLUMAS 60.0 1	Normal	P0	N-0	<100	101.13	<100	<100	<100				Action Plan
CYVL-T-46	31998 VACA-DIX 115 31997 SCHMLBCH 115 1	P1-2:A4:38:_Vaca - Suisun 115 kV Line	P1	N-1	<100	101.94	113.60	<100	<100				Explore potential mitigation
CYVL-T-47	32088 VACA-DXN 60.0 31998 VACA-DIX 115 5	P1-3:A4:14:_Vaca Dixon 115/60 kV Transformer No. 9	P1	N-1	120.03	122.21	<100	<100	<100				Explore potential mitigation
CYVL-T-49	32342 E.NICOLS 60.0 32212 E.NICOLS 115 2	P1-3:A5:11:_East Nicolaus #3 115/60 kV Transformer	P1	N-1	<100	<100	118.91	<100	<100				Explore potential mitigation



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CYVL-T-50	32342 E.NICOLS 60.0 32212 E.NICOLS 115 3	P1-3:A5:38:_East Nicolaus #2 115/60 kV Transformer	P1	N-1	<100	<100	118.87	<100	<100				Explore potential mitigation
CYVL-T-51	33610 VLLY SPS 60.0 33619 AMFOR_SW 60.0 1	P1-2:A11:69:_Valley Springs-Clay 60 kV Line	P1	N-1	129.61	135.52	125.52	<100	<100				Action Plan
CYVL-T-52	33619 AMFOR_SW 60.0 33616 MARTELL 60.0 1	P1-2:A11:73:_Valley Springs-Clay 60 kV Line	P1	N-1	<100	114.39	<100	<100	<100				Action Plan
CYVL-T-53	33619 AMFOR_SW 60.0 33616 MARTELL 60.0 1	P1-2:A11:74:_Valley Springs-Clay 60 kV Line	P1	N-1	<100	<100	112.77	<100	<100				Action Plan
CYVL-T-54	33636 N.HGN JT 60.0 33640 CORRAL 60.0 1	P1-2:A11:72:_Weber - Mormon Jct 60 kV Line	P1	N-1	106.13	105.58	106.34	<100	<100				Action Plan
CYVL-T-55	30330 RIO OSO 230 30335 ATLANTC 230 1	P2-2:A5:4_BUS FAULT AT 30337 GOLDHILL 230.00 Bus 2	P2	Bus	101.35	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: Gold Hill SPS and add 3rd Gold Hill 230/115 kV Transformer or Pine Hill Sub
CYVL-T-56	30330 RIO OSO 230 30348 BRIGHTON 230 1	P2-4:A5:2_RIO OSO 115 kV Bus 1 and 2 - CB 102 Failure	P2	Bus-tie breaker	105.88	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-57	30482 LOCKFORD 230 30500 BELLOTA 230 1	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	112.61	<100	<100	<100	<100				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line
CYVL-T-58	30515 WARNERVL 230 30800 WILSON 230 1	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	<100	<100	<100	102.09	<100				Action plan - Trip Helms pump
CYVL-T-59	31482 PALERMO 115 31506 HONC JT1 115 1	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	126.63	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-60	31962 WDLND_BM 115 31990 DAVIS 115 1	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	161.11	136.84	<100	<100	<100				Explore potential mitigation
CYVL-T-61	31978 DPWT_TP2 115 31984 BRIGHTN 115 1	P2-4:A5:2_RIO OSO 115 kV Bus 1 and 2 - CB 102 Failure	P2	Bus-tie breaker	102.78	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-62	31993 BRKRJCT 115 32001 UCD_TP2 115 1	P2-4:A5:2_RIO OSO 115 kV Bus 1 and 2 - CB 102 Failure	P2	Bus-tie breaker	126.77	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion



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CYVL-T-63	31998 VACA-DIX 115 31997 SCHMLBCH 115 1	P2-3:A4:5:_NON-BUS-TIE BREAKER CB1422 FAILURE AT VACA-DIXON 115kV	P2	Non Bus-tie breaker	<100	101.94	113.64	<100	<100				Explore potential mitigation
CYVL-T-64	32001 UCD_TP2 115 31990 DAVIS 115 1	P2-4:A5:2_RIO OSO 115 kV Bus 1 and 2 - CB 102 Failure	P2	Bus-tie breaker	102.49	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-65	32018 GOLDHILL 115 32231 HORSHE2 115 2	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	105.36	105.21	<100	<100				Explore potential mitigation
CYVL-T-66	32200 PEASE 115 32288 E.MRY J1 115 1	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	129.50	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-67	32206 BOGUE 115 32286 OLIVH J3 115 1	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	116.63	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-68	32208 GLEAF TP 115 32214 RIO OSO 115 1	P2-3:A5:7:_NON-BUS-TIE BREAKER CB132 FAILURE AT BOGUE 115 kV	P2	Non Bus-tie breaker	121.15	<100	<100	<100	<100				Short term: Action Plan
CYVL-T-69	32212 E.NICOLS 115 32214 RIO OSO 115 1	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	103.26	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-70	32214 RIO OSO 115 30330 RIO OSO 230 1	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	101.49	<100	<100	<100	<100				Short term: Action Plan
CYVL-T-71	32214 RIO OSO 115 31986 W.SCRMNO 115 1	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	137.48	118.16	<100	<100	<100				Explore potential mitigation
CYVL-T-72	32214 RIO OSO 115 32225 BRNSWKTP 115 1	P2-3:A5:12:_NON-BUS-TIE BREAKER CB340 FAILURE AT DRUM1 PH 115 kV	P2	Non Bus-tie breaker	<100	110.18	<100	<100	<100				Explore potential mitigation
CYVL-T-73	32218 DRUM 115 32220 DTCH FL1 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	219.57	222.75	106.56	<100				Explore potential mitigation
CYVL-T-74	32218 DRUM 115 32244 BRNSWKCP 115 2	P2-2:A5:13_BUS FAULT AT 32232 HIGGINS 115.00	P2	Bus	105.95	117.32	104.76	<100	<100				Explore potential mitigation
CYVL-T-75	32220 DTCH FL1 115 32224 CHCGO PK 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	135.21	136.89	<100	<100				Explore potential mitigation
CYVL-T-76	32224 CHCGO PK 115 32232 HIGGINS 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	160.34	161.11	<100	<100				Explore potential mitigation
CYVL-T-77	32225 BRNSWKTP 115 32222 DTCH FL2 115 1	P2-3:A5:12:_NON-BUS-TIE BREAKER CB340 FAILURE AT DRUM1 PH 115 kV	P2	Non Bus-tie breaker	110.49	129.98	112.22	<100	<100				Explore potential mitigation



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CYVL-T-78	32228 PLACER 115 32238 BELL PGE 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	119.67	122.49	<100	<100				Explore potential mitigation
CYVL-T-79	32228 PLACER 115 32239 FLINT2 115 2	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	112.19	113.02	<100	<100				Explore potential mitigation
CYVL-T-80	32229 HORSHE1 115 32233 NEWCSTL1 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	127.73	125.72	<100	<100				Explore potential mitigation
CYVL-T-81	32231 HORSHE2 115 32235 NEWCSTL2 115 2	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	105.15	105.32	<100	<100				Explore potential mitigation
CYVL-T-82	32232 HIGGINS 115 32238 BELL PGE 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	132.71	134.29	<100	<100				Explore potential mitigation
CYVL-T-83	32233 NEWCSTL1 115 32236 FLINT1 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	116.93	121.48	<100	<100				Explore potential mitigation
CYVL-T-84	32235 NEWCSTL2 115 32239 FLINT2 115 2	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	104.99	105.10	<100	<100				Explore potential mitigation
CYVL-T-85	32236 FLINT1 115 32228 PLACER 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	116.82	121.41	<100	<100				Explore potential mitigation
CYVL-T-86	32250 ELDORAD 115 32481 APLHTAP2 115 2	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	227.72	197.04	189.42	<100	<100				Explore potential mitigation
CYVL-T-87	32255 PLCRVLT1 115 32261 MIZOU_T1 115 1	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	123.81	107.48	103.14	<100	<100				Explore potential mitigation
CYVL-T-88	32261 MIZOU_T1 115 32267 DIMOND_1 115 1	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	104.23	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: Gold Hill SPS and add 3rd Gold Hill 230/115 kV Transformer or Pine Hill Sub
CYVL-T-89	32267 DIMOND_1 115 32262 SHPRING1 115 1	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	104.20	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: Gold Hill SPS and add 3rd Gold Hill 230/115 kV Transformer or Pine Hill Sub
CYVL-T-90	32290 OLIVH J1 115 32214 RIO OSO 115 1	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	103.64	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-91	32290 OLIVH J1 115 32288 E.MRY J1 115 1	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	129.39	<100	<100	<100	<100				Short Term: Sierra Action Plan, Long Term: South of Palermo 115 kV Reinforcement Project and Rio Oso 230 kV BAAH Conversion
CYVL-T-92	32342 E.NICOLS 60.0 32212 E.NICOLS 115 3	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	<100	100.20	120.49	<100	<100				Explore potential mitigation
CYVL-T-93	32342 E.NICOLS 60.0 32344 PLUMAS 60.0 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	<100	115.40	<100	<100				Explore potential mitigation



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CYVL-T-94	32342 E.NICOLS 60.0 32353 WHTLND1 60.0 1	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<100	<100	66.52	<100	101.48				Explore potential mitigation
CYVL-T-95	32345 BEALE1J2 60.0 32353 WHTLND1 60.0 1	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<100	<100	0.00	<100	109.23				Explore potential mitigation
CYVL-T-96	32412 ATLANTIC 115 32228 PLACER 115 1	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	<100	151.00	157.28	<100	<100				Explore potential mitigation
CYVL-T-98	32481 APLHTAP2 115 32257 PLCRVLT2 115 2	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	227.77	197.04	189.45	<100	<100				Explore potential mitigation
CYVL-T-99	32482 APLHTAP1 115 32255 PLCRVLT1 115 1	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	205.72	178.58	<100	<100	<100				Explore potential mitigation
CYVL-T-100	33500 MELNS JA 115 33509 AVENATP1 115 1	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	114.21	<100	<100	<100	<100				Action Plan. SPS Long term
CYVL-T-101	33509 AVENATP1 115 33514 MANTECA 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	103.19	NConv	108.63	158.26				Action Plan. Concur further investigation required
CYVL-T-102	33511 AVENATP2 115 33514 MANTECA 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<100	NConv	<100	100.77				Action Plan. Concur further investigation required
CYVL-T-103	33516 RPN JNCN 115 33514 MANTECA 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<100	NConv	<100	157.67				Action Plan. Concur further investigation required
CYVL-T-104	33542 LEPRINO 115 33548 TRACY 115 1	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	102.82	<100	<100	<100	<100				Action Plan. SPS Long term
CYVL-T-105	33562 BELLOTA 115 33950 RVRBK TP 115 1	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	118.35	<100	<100	<100	<100				Action Plan. SPS Long term
CYVL-T-106	33610 VLLY SPS 60.0 33619 AMFOR_SW 60.0 1	P2-4:A11:69:_33610 Valley Springs 70 kV CB6222 Internal Breaker Fault	P2	Bus-tie breaker	129.59	127.13	125.40	<100	<100				Action Plan
CYVL-T-107	33619 AMFOR_SW 60.0 33616 MARTELL 60.0 1	P2-4:A11:69:_33610 Valley Springs 70 kV CB6222 Internal Breaker Fault	P2	Bus-tie breaker	116.51	114.27	112.66	<100	<100				Action Plan
CYVL-T-108	33646 MORMON 60.0 33650 WEBER 1 60.0 1	P2-2:A11:23:_30505 Weber 230 kV Bus Section E	P2	Bus	<100	100.61	102.00	<100	<100				Action Plan
CYVL-T-109	33704 STAGG 60.0 33706 CNTRY CB 60.0 1	P2-2:A11:74:_33704 Stagg 60 kV Bus Section D	P2	Bus	117.28	<100	<100	<100	<100				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line
CYVL-T-110	33716 HMMR JCT 60.0 33717 MORADAJT 60.0 1	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	144.51	<100	<100	<100	<100				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line
CYVL-T-111	33717 MORADAJT 60.0 33740 MSHR 60V 60.0 1	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	203.96	<100	<100	<100	<100				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line



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CYVL-T-112	33724 LOCKEFRD 60.0 33739 HNYLNJCT 60.0 1	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	171.15	<100	<100	<100	<100				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line
CYVL-T-113	33738 WATRLJCT 60.0 33740 MSHR 60V 60.0 1	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	171.22	<100	<100	<100	<100				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line
CYVL-T-114	33739 HNYLNJCT 60.0 33738 WATRLJCT 60.0 1	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	171.20	<100	<100	<100	<100				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line
CYVL-T-115	33742 MANTECA 60.0 33514 MANTECA 115 3	P2-2:A11:57:_33528 Kasson 115 kV Bus	P2	Bus	203.76	209.42	217.84	<100	<100				Kasson SPS
CYVL-T-116	33742 MANTECA 60.0 33703 LOUISJCT 60.0 1	P2-2:A11:57:_33528 Kasson 115 kV Bus	P2	Bus	145.88	152.32	161.07	<100	<100				Kasson SPS
CYVL-T-117	33745 LID TAP 60.0 33750 CALVO 60.0 1	P2-2:A11:57:_33528 Kasson 115 kV Bus	P2	Bus	105.01	110.59	118.12	<100	<100				Kasson SPS
CYVL-T-118	33748 MSSDLESW 60.0 33745 LID TAP 60.0 1	P2-2:A11:57:_33528 Kasson 115 kV Bus	P2	Bus	107.74	113.32	120.86	<100	<100				Kasson SPS
CYVL-T-119	33750 CALVO 60.0 33756 KASSON 60.0 1	P2-2:A11:57:_33528 Kasson 115 kV Bus	P2	Bus	100.20	105.79	113.35	<100	<100				Kasson SPS
CYVL-T-120	33900 DONNELLS 115 34058 DONNELLS 13.8 1	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	108.90	<100	<100	<100	<100				Action Plan. SPS Long term
CYVL-T-121	33912 SPRNG GJ 115 33914 MI-WUK 115 1	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	117.50	<100	<100	<100	<100				Action Plan. SPS Long term
CYVL-T-122	33916 CURTISS 115 33917 FBERBORD 115 1	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	109.24	<100	<100	<100	<100				Action Plan. SPS Long term
CYVL-T-123	33932 MELONES 115 33934 TULLOCH 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	137.50	NConv	173.64	271.85				Explore potential mitigation
CYVL-T-124	33932 MELONES 115 33936 MELNS JB 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	130.85	NConv	138.01	205.04				Explore potential mitigation
CYVL-T-125	33936 MELNS JB 115 33947 RIVRBKJT 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	142.66	NConv	123.30	170.77				Explore potential mitigation
CYVL-T-126	33947 RIVRBKJT 115 33951 VLYHMTP1 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	142.30	NConv	123.01	170.71				Explore potential mitigation
CYVL-T-127	33950 RVRBK TP 115 33934 TULLOCH 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	119.71	NConv	148.12	259.50				Explore potential mitigation
CYVL-T-128	33951 VLYHMTP1 115 33517 RPNJN2 115 1	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	109.88	NConv	112.30	161.61				Explore potential mitigation
CYVL-T-129	34012 GUSTN JT 60.0 34014 NEWMAN 60.0 1	P2-2:A12:3:_34009 Q539SS 60 kV Bus	P2	Bus	116.05	119.80	127.18	<100	<100				Explore potential mitigation



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-130	31263 LWRLAKEJ 115 31225 HGHLNDJ1 115 1	P2-1:A2:13:_INDIN VL-CORTINA #1 115 kV	P2-1	Line section w/o fault	123.21	117.28	111.35	<100	<100				Explore potential mitigation
CYVL-T-131	32057 HUSTD 60.0 32063 ARBJCT 60.0 2	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	137.59	142.28	148.83	<100	<100				Explore potential mitigation
CYVL-T-132	32063 ARBJCT 60.0 32061 ARBALT 60.0 2	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	108.61	113.11	<100	<100	<100				Explore potential mitigation
CYVL-T-133	32063 ARBJCT 60.0 32061 ARBALT 60.0 2	P2-1:A4:72:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	<100	<100	119.52	<100	<100				Explore potential mitigation
CYVL-T-134	32100 DIXONPGE 60.0 32101 DIXON-J2 60.0 2	P2-1:A4:97:_VACA-DXN-VACA-JT1 #1 60 kV	P2-1	Line section w/o fault	116.00	117.37	<100	<100	<100				Explore potential mitigation
CYVL-T-135	32218 DRUM 115 32244 BRNSWCKP 115 2	P2-1:A5:38:_CHCGO PK-HIGGINS #1 115 kV	P2-1	Line section w/o fault	106.84	118.30	105.62	<100	<100				Explore potential mitigation
CYVL-T-136	32225 BRNSWKTP 115 32222 DTCH FL2 115 1	P2-1:A5:38:_CHCGO PK-HIGGINS #1 115 kV	P2-1	Line section w/o fault	93.36	106.92	<100	<100	<100				Explore potential mitigation
CYVL-T-138	32250 ELDORAD 115 32481 APLHTAP2 115 2	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	208.78	192.54	186.27	<100	<100				Explore potential mitigation
CYVL-T-139	32250 ELDORAD 115 32482 APLHTAP1 115 1	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	159.25	146.68	140.95	<100	<100				Explore potential mitigation
CYVL-T-140	32255 PLCRVLT1 115 32261 MIZOU_T1 115 1	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	113.93	105.21	101.46	<100	<100				Explore potential mitigation
CYVL-T-143	32481 APLHTAP2 115 32257 PLCRVLT2 115 2	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	208.84	192.45	186.31	<100	<100				Explore potential mitigation
CYVL-T-144	32482 APLHTAP1 115 32255 PLCRVLT1 115 1	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	189.31	174.79	168.60	<100	<100				Explore potential mitigation
CYVL-T-145	33610 VLLY SPS 60.0 33619 AMFOR_SW 60.0 1	P2-1:A11:107:_CLAY-BUENA_TP #1 60 kV	P2-1	Line section w/o fault	130.07	114.06	126.06	<100	<100				Action Plan
CYVL-T-146	33619 AMFOR_SW 60.0 33616 MARTELL 60.0 1	P2-1:A11:107:_CLAY-BUENA_TP #1 60 kV	P2-1	Line section w/o fault	116.93	<100	<100	<100	<100				Action Plan



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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-147	33619 AMFOR_SW 60.0 33616 MARTELL 60.0 1	P2-1:A11:110:_CLAY-BUENA_TP #1 60 kV	P2-1	Line section w/o fault	<100	<100	113.26	<100	<100				Action Plan
CYVL-T-148	34012 GUSTN JT 60.0 34014 NEWMAN 60.0 1	P2-1:A12:50:_Q539SS-MEDLIN J #1 60 kV	P2-1	Line section w/o fault	115.92	119.60	126.97	<100	<100				Explore potential mitigation
CYVL-T-149	31984 BRIGHTN 115 31993 BRKRJCT 115 1	P1-1:A5:9:_DRUM 5 13.80 Generator ID 1 and P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P3	G-1/N-1	100.71	<100	<100	<100	<100				Short term: Action Plan
CYVL-T-150	31993 BRKRJCT 115 32001 UCD_TP2 115 1	P1-1:A4:9:_WOODLAND 9.11 Generator ID 1 and P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P3	G-1/N-1	104.69	<100	<100	<100	<100				Short term: Action Plan
CYVL-T-151	31998 VACA-DIX 115 30460 VACA-DIX 230 4	P1-1:A4:22:_WOLFSKIL 13.80 Generator ID 1 and P1-3:A4:7:_Vaca Dixon 230/115 kV Transformer No. 3	P3	G-1/N-1	102.93	109.24	<100	<100	<100				Explore potential mitigation
CYVL-T-152	31998 VACA-DIX 115 31997 SCHMLBCH 115 1	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:38:_Vaca - Suisun 115 kV Line	P3	G-1/N-1	<100	102.04	113.84	<100	<100				Explore potential mitigation
CYVL-T-153	31998 VACA-DIX 115 31999 VACA-D&1 115 1	P1-1:A4:22:_WOLFSKIL 13.80 Generator ID 1 and P1-2:A4:40:_Vaca - Suisun - Jameson 115 kV Line	P3	G-1/N-1	<100	<100	100.63	<100	<100				Explore potential mitigation
CYVL-T-154	32056 CORTINA 60.0 30451 CRTNA M 230 1	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-3:A4:5:_Cortina 230/115 kV Transformer No. 4	P3	G-1/N-1	106.81	121.41	121.11	<100	<100				Explore potential mitigation
CYVL-T-155	32057 HUSTD 60.0 32056 CORTINA 60.0 2	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:42:_Cortina 60 kV Line No. 1	P3	G-1/N-1	101.00	105.72	114.14	<100	<100				Explore potential mitigation
CYVL-T-156	32057 HUSTD 60.0 32063 ARBJCT 60.0 2	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:42:_Cortina 60 kV Line No. 1	P3	G-1/N-1	101.11	105.73	114.26	<100	<100				Explore potential mitigation
CYVL-T-157	32070 CLSA JCT 60.0 32073 WESCOT1 60.0 3	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:43:_Cortina No. 4 60 kV Line	P3	G-1/N-1	<100	<100	104.64	<100	<100				Explore potential mitigation
CYVL-T-158	32073 WESCOT1 60.0 32075 WESCOT2 60.0 3	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:43:_Cortina No. 4 60 kV Line	P3	G-1/N-1	<100	<100	104.63	<100	<100				Explore potential mitigation
CYVL-T-159	32088 VACA-DXN 60.0 31998 VACA-DIX 115 5	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-3:A4:14:_Vaca Dixon 115/60 kV Transformer No. 9	P3	G-1/N-1	120.04	122.07	<100	<100	<100				Explore potential mitigation
CYVL-T-160	32290 OLIVH J1 115 32214 RIO OSO 115 1	P1-1:A5:2:_YCEC 13.80 Generator ID 1 and P1-2:A5:28:_Palermo - Pease 115 kV Line	P3	G-1/N-1	105.51	<100	<100	<100	<100				Short term: Action Plan



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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-161	32342 E.NICOLS 60.0 32212 E.NICOLS 115 2	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-3:A5:11:_East Nicolaus #3 115/60 kV Transformer	P3	G-1/N-1	<100	<100	118.90	<100	<100				Explore potential mitigation
CYVL-T-162	32374 DRUM 60.0 32376 BONNIE N 60.0 1	P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1 and P1-2:A5:51:_Colgate-Grass Valley 60 kV Line	P3	G-1/N-1	103.51	<100	<100	<100	<100				Explore potential mitigation
CYVL-T-163	32374 DRUM 60.0 32376 BONNIE N 60.0 1	P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1 and P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P3	G-1/N-1	<100	102.97	103.90	<100	<100				Explore potential mitigation
CYVL-T-164	33542 LEPRINO 115 33548 TRACY 115 1	P1-1:A11:46:_STANISLS 13.80 Generator ID 1 and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P3	G-1/N-1	107.27	<100	<100	<100	<100				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-165	33542 LEPRINO 115 33548 TRACY 115 1	P1-1:A12:6:_DONNELLS 13.80 Generator ID 1 and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P3	G-1/N-1	100.83	<100	<100	<100	<100				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-166	33542 LEPRINO 115 33548 TRACY 115 1	P1-1:A12:8:_STANISLS 13.80 Generator ID 1 and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P3	G-1/N-1	107.27	<100	<100	<100	<100				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-167	33610 VLLY SPS 60.0 33619 AMFOR_SW 60.0 1	P1-1:A11:23:_TIGR CRK 11.00 Generator ID 2 and P1-2:A11:73:_Valley Springs-Clay 60 kV Line	P3	G-1/N-1	<100	127.20	<100	<100	<100				Action Plan
CYVL-T-168	33636 N.HGN JT 60.0 33640 CORRAL 60.0 1	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A11:72:_Weber - Mormon Jct 60 kV Line	P3	G-1/N-1	106.09	105.56	106.32	<100	<100				Action Plan
CYVL-T-169	33662 WEBER 2 60.0 33674 HAZLTN J 60.0 1	P1-1:A11:19:_COG.NTNL 13.80 Generator ID 1 and P1-2:A11:82:_Stockton 'A' - Weber 60 kV Line No. 2	P3	G-1/N-1	<100	<100	106.43	<100	<100				Under review
CYVL-T-170	34012 GUSTN JT 60.0 34014 NEWMAN 60.0 1	P1-1:A11:11:_GWFTRCY3 13.80 Generator ID 1 and P1-2:A12:17:_Salado-S539SS #1 60 kV Line	P3	G-1/N-1	<100	105.24	112.86	<100	<100				Congestion Management
CYVL-T-171	30482 LOCKFORD 230 30500 BELLOTA 230 1	P1-3:A11:9:_Stagg 230/60 kV Transformer No. 4 and P1-3:A11:8:_Stagg 230/60 kV Transformer No. 1	P6	N-1/N-1	112.90	<100.0	<100.0	<100.0	<100.0				Action Plan
CYVL-T-172	31482 PALERMO 115 31506 HONC JT1 115 1	P1-2:A5:7:_Colgate - Rio Oso 230 kV Line and P1-2:A3:18:_Palermo-Nicolaus 115 kV Line	P6	N-1/N-1	104.74	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-173	31656 PALERMO 60.0 31658 BANGOR 60.0 1	P1-2:A5:66:_Smartville - Nicolaus #1 60 kV Line and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	<100.0	<100.0	<100.0	<100.0	115.89				Explore potential mitigation
CYVL-T-174	31658 BANGOR 60.0 32308 COLGATE 60.0 1	P1-2:A5:66:_Smartville - Nicolaus #1 60 kV Line and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	<100.0	<100.0	<100.0	<100.0	125.29				Explore potential mitigation



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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-175	31960 MOBILCHE 115 31966 WODLNDJ1 115 1	P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10 and P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9	P6	N-1/N-1	158.10	<100.0	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-176	31962 WDLND_BM 115 31990 DAVIS 115 1	P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9 and P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10	P6	N-1/N-1	276.49	157.97	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-177	31964 KNIGHT2 115 31968 WODLNDJ2 115 2	P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9 and P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10	P6	N-1/N-1	165.80	94.92	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-178	31965 KNIGHT1 115 31966 WODLNDJ1 115 1	P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9 and P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10	P6	N-1/N-1	157.32	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-179	31968 WODLNDJ2 115 31970 WOODLD 115 2	P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9 and P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10	P6	N-1/N-1	152.58	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-180	31980 DPWTR_TP 115 31986 W.SCRMNO 115 1	P1-2:A4:29:_Woodland - Davis 115 kV Line and P1-2:A4:33:_Brighton - Davis 115 kV Line	P6	N-1/N-1	102.05	102.69	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-181	31980 DPWTR_TP 115 31990 DAVIS 115 1	P1-2:A4:33:_Brighton - Davis 115 kV Line and P1-2:A4:29:_Woodland - Davis 115 kV Line	P6	N-1/N-1	100.35	101.12	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-182	31984 BRIGHTN 115 31993 BRKRJCT 115 1	P1-2:A4:29:_Woodland - Davis 115 kV Line and P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P6	N-1/N-1	150.70	139.46	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-183	31993 BRKRJCT 115 32001 UCD_TP2 115 1	P1-2:A4:29:_Woodland - Davis 115 kV Line and P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P6	N-1/N-1	149.39	138.10	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-184	31998 VACA-DIX 115 30460 VACA-DIX 230 2	P1-3:A4:7:_Vaca Dixon 230/115 kV Transformer No. 3 and P1-3:A4:8:_Vaca Dixon 230/115 kV Transformer No. 4	P6	N-1/N-1	<100.0	<100.0	103.15	<100.0	<100.0				Explore potential mitigation
CYVL-T-185	31998 VACA-DIX 115 30460 VACA-DIX 230 3	P1-2:A4:38:_Vaca - Suisun 115 kV Line and P1-3:A4:8:_Vaca Dixon 230/115 kV Transformer No. 4	P6	N-1/N-1	103.96	110.48	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-186	31998 VACA-DIX 115 30460 VACA-DIX 230 3	P1-3:A4:8:_Vaca Dixon 230/115 kV Transformer No. 4 and P1-3:A4:16:_Vaca Dixon 230/115 kV Transformer No. 2	P6	N-1/N-1	<100.0	<100.0	106.55	<100.0	<100.0				Explore potential mitigation



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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-187	32001 UCD_TP2 115 31990 DAVIS 115 1	P1-2:A4:29:_Woodland - Davis 115 kV Line and P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P6	N-1/N-1	120.79	111.66	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-188	32018 GOLDHILL 115 32231 HORSHE2 115 2	P1-2:A5:22:_Placer - Gold Hill 115 kV Line No. 1 and P1-2:A5:38:_Drum - Higgins 115 kV Line	P6	N-1/N-1	100.51	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-189	32018 GOLDHILL 115 32231 HORSHE2 115 2	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	<100.0	109.19	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-190	32056 CORTINA 60.0 30451 CRTNA M 230 1	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-3:A4:5:_Cortina 230/115 kV Transformer No. 4	P6	N-1/N-1	106.81	121.41	121.11	<100.0	<100.0				Explore potential mitigation
CYVL-T-191	32056 CORTINA 60.0 30451 CRTNA M 230 1	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-3:A4:5:_Cortina 230/115 kV Transformer No. 4	P6	N-1/N-1	124.06	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-192	32070 CLSA JCT 60.0 32073 WESCOT1 60.0 3	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:43:_Cortina No. 4 60 kV Line	P6	N-1/N-1	<100.0	<100.0	104.64	<100.0	<100.0				Explore potential mitigation
CYVL-T-193	32073 WESCOT1 60.0 32075 WESCOT2 60.0 3	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:43:_Cortina No. 4 60 kV Line	P6	N-1/N-1	<100.0	<100.0	104.63	<100.0	<100.0				Explore potential mitigation
CYVL-T-194	32082 PLFLDJCT 60.0 32092 PLAINFLD 60.0 1	P1-3:A4:14:_Vaca Dixon 115/60 kV Transformer No. 9 and P1-3:A4:7:_Vaca Dixon 230/115 kV Transformer No. 3	P6	N-1/N-1	99.21	100.57	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-195	32088 VACA-DXN 60.0 31998 VACA-DIX 115 5	P1-1:A11:12:_ELECTRA 13.80 Generator ID 1 and P1-3:A4:14:_Vaca Dixon 115/60 kV Transformer No. 9	P6	N-1/N-1	120.03	122.24	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-196	32200 PEASE 115 31506 HONC JT1 115 1	P1-1:A4:9:_WOODLAND 9.11 Generator ID 1 and P1-2:A3:18:_Palermo-Nicolaus 115 kV Line	P6	N-1/N-1	100.09	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-197	32208 GLEAF TP 115 32214 RIO OSO 115 1	P1-2:A5:7:_Colgate - Rio Oso 230 kV Line and P1-2:A3:5:_Table Mountain(D)-Rio Oso 230 kV Line	P6	N-1/N-1	109.54	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-198	32214 RIO OSO 115 30330 RIO OSO 230 1	P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10 and P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9	P6	N-1/N-1	140.22	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-199	32214 RIO OSO 115 31964 KNIGHT2 115 2	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	164.04	<100.0	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-200	32214 RIO OSO 115 31986 W.SCRMNO 115 1	P1-2:A5:9:_Rio Oso - Brighton 230 kV Line and P1-2:4:3:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	229.17	133.18	<100.0	<100.0	<100.0				Explore potential mitigation



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-201	32214 RIO OSO 115 32404 SPI JCT 115 1	P1-2:A5:8:_Rio Oso - Atlantic 230 kV Line and P1-2:A5:12:_Atlantic - Gold Hill 230 kV Line	P6	N-1/N-1	135.20	<100.0	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-202	32218 DRUM 115 32220 DTCH FL1 115 1	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	NConv	162.02	114.63	<100.0	<100.0				Explore potential mitigation
CYVL-T-203	32218 DRUM 115 32244 BRNSWCKP 115 2	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	116.13	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-204	32224 CHCGO PK 115 32232 HIGGINS 115 1	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	NConv	128.12	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-205	32225 BRNSWKTP 115 32222 DTCH FL2 115 1	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	100.49	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-206	32228 PLACER 115 32239 FLINT2 115 2	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	<100.0	116.05	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-208	32229 HORSHE1 115 32233 NEWCSTL1 115 1	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	<100.0	130.55	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-209	32231 HORSHE2 115 32235 NEWCSTL2 115 2	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	<100.0	109.31	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-210	32232 HIGGINS 115 32238 BELL PGE 115 1	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	NConv	102.42	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-211	32233 NEWCSTL1 115 32236 FLINT1 115 1	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	<100.0	120.07	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-212	32235 NEWCSTL2 115 32239 FLINT2 115 2	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	<100.0	109.07	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-213	32236 FLINT1 115 32228 PLACER 115 1	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	<100.0	120.07	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-214	32290 OLIVH J1 115 32288 E.MRY J1 115 1	P1-2:A5:7:_Colgate - Rio Oso 230 kV Line and P1-2:A3:5:_Table Mountain(D)-Rio Oso 230 kV Line	P6	N-1/N-1	102.25	<100.0	<100.0	<100.0	<100.0				Short Term: Sierra Action Plan, Long term: South of Palermo 115 kV Reinforcement Project
CYVL-T-215	32342 E.NICOLS 60.0 32212 E.NICOLS 115 2	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line and P1-3:A5:11:_East Nicolaus #3 115/60 kV Transformer	P6	N-1/N-1	<100.0	100.09	120.40	<100.0	<100.0				Explore potential mitigation



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-216	32342 E.NICOLS 60.0 32353 WHTLND1 60.0 1	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	<100.0	<100.0	<100.0	<100.0	116.84				Explore potential mitigation
CYVL-T-217	32345 BEALE1J2 60.0 32353 WHTLND1 60.0 1	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	<100.0	<100.0	<100.0	<100.0	126.95				Explore potential mitigation
CYVL-T-218	32356 LINCLN 115 32398 ULTRA JT 115 1	P1-2:A5:8:_Rio Oso - Atlantic 230 kV Line and P1-2:A5:12:_Atlantic - Gold Hill 230 kV Line	P6	N-1/N-1	107.13	<100.0	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-219	32356 LINCLN 115 32404 SPI JCT 115 1	P1-2:A5:8:_Rio Oso - Atlantic 230 kV Line and P1-2:A5:12:_Atlantic - Gold Hill 230 kV Line	P6	N-1/N-1	139.53	<100.0	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-220	32398 ULTRA JT 115 32408 PLSNT GR 115 1	P1-2:A5:8:_Rio Oso - Atlantic 230 kV Line and P1-2:A5:12:_Atlantic - Gold Hill 230 kV Line	P6	N-1/N-1	121.25	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-221	32412 ATLANTIC 115 32228 PLACER 115 1	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	<100.0	168.67	111.60	<100.0	<100.0				Explore potential mitigation
CYVL-T-226	33526 KSSN-JC1 115 33528 KASSON 115 1	P1-2:A11:55:_Schulte - Lammers 115 kV Line and P1-2:A11:50:_Tesla - Tracy 115 kV Line	P6	N-1/N-1	149.25	106.42	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-227	33529 LAMMERS 115 33531 OWENSTP1 115 1	P1-2:A11:50:_Tesla - Tracy 115 kV Line and P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line	P6	N-1/N-1	103.18	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-228	33530 KSSN-JC2 115 33550 HJ HEINZ 115 1	P1-2:A11:55:_Schulte - Lammers 115 kV Line and P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line	P6	N-1/N-1	138.66	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-229	33533 OWENSTP2 115 33526 KSSN-JC1 115 1	P1-2:A11:50:_Tesla - Tracy 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	125.13	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-230	33540 TESLA 115 33541 AEC_TP1 115 1	P1-2:A11:48:_Tesla - Schulte 115 kV Line No. 2 and P1-2:A11:56:_GWF Tracy - Schulte 115 kV Line	P6	N-1/N-1	105.54	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-231	33540 TESLA 115 33544 ELLS GTY 115 1	P1-2:A11:55:_Schulte - Lammers 115 kV Line and P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line	P6	N-1/N-1	140.15	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-232	33542 LEPRINO 115 33548 TRACY 115 1	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	178.18	116.24	123.67	<100.0	<100.0				Action Plan
CYVL-T-233	33544 ELLS GTY 115 33546 TRACY JC 115 1	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	119.39	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-234	33548 TRACY 115 33550 HJ HEINZ 115 1	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	135.46	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-235	33549 SCHULTE 115 33533 OWENSTP2 115 2	P1-2:A11:50:_Tesla - Tracy 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	125.06	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Vierra Looping project
CYVL-T-236	33558 LCKFRDJB 115 33562 BELLOTA 115 1	P1-2:A11:63:_Gold Hill-Bellota-Lockeford 115 kV Line and P1-2:A11:62:_Stockton 'A' - Lockeford - Bellota 115 kV Line No. 1	P6	N-1/N-1	<100.0	97.53	102.36	<100.0	<100.0				Action Plan
CYVL-T-237	33610 VLLY SPS 60.0 33619 AMFOR_SW 60.0 1	P1-2:A11:13:_Stagg 230/21 kV Bank 6 and P1-2:A11:73:_Valley Springs-Clay 60 kV Line	P6	N-1/N-1	<100.0	127.20	125.09	<100.0	<100.0				Action Plan
CYVL-T-238	33662 WEBER 2 60.0 33674 HAZLTN J 60.0 1	P1-2:A11:77:_Stockton 'A' - Weber 60 kV Line No. 2 and P1-2:A11:76:_Stockton 'A' - Weber 60 kV Line No. 1	P6	N-1/N-1	103.44	109.90	119.09	<100.0	<100.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-T-239	33704 STAGG 60.0 33706 CNTRY CB 60.0 1	P1-2:A11:84:_Stagg - Hammer 60 kV Line No. 1 and P1-2:A11:83:_Stagg - Country Club 60 kV Line No. 2	P6	N-1/N-1	116.01	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-T-240	33704 STAGG 60.0 33714 HAMMER 60.0 1	P1-2:A11:83:_Stagg - Country Club 60 kV Line No. 2 and P1-2:A11:82:_Stagg - Country Club 60 kV Line No. 1	P6	N-1/N-1	118.69	<100.0	<100.0	<100.0	<100.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-T-241	33706 CNTRY CB 60.0 33708 UOP 60.0 1	P1-2:A11:89:_New Stagg - Hammer 60 kV Line No. 2 and P1-2:A11:88:_Stagg - Hammer 60 kV Line No. 1	P6	N-1/N-1	100.09	101.63	104.07	<100.0	<100.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-T-242	33714 HAMMER 60.0 33716 HMMR JCT 60.0 1	P1-2:A11:86:_Stagg - Country Club 60 kV Line No. 1 and P1-2:A11:87:_Stagg - Country Club 60 kV Line No. 2	P6	N-1/N-1	<100.0	106.96	108.74	<100.0	<100.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-T-243	33716 HMMR JCT 60.0 33717 MORADAJT 60.0 1	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	153.07	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-244	33717 MORADAJT 60.0 33740 MSHR 60V 60.0 1	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	208.86	<100.0	<100.0	105.15	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-245	33724 LOCKEFRD 60.0 30482 LOCKFORD 230 2	P1-2:A11:85:_Hammer - Country Club 60 kV and P1-3:A11:5:_Lockeford 230/60 kV Transformer No. 3	P6	N-1/N-1	116.13	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-246	33724 LOCKEFRD 60.0 33725 LOCKFRD1 60.0 1	P1-2:A11:88:_Lockeford - Lodi 60 kV Line No. 2 and P1-2:A11:91:_Lockeford - Industrial 60 kV Line	P6	N-1/N-1	110.24	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-247	33724 LOCKEFRD 60.0 33726 VICTOR 60.0 1	P1-2:A28:105:_Lodi - Industrial 60 kV Line and P1-2:A11:91:_Lockeford - Industrial 60 kV Line	P6	N-1/N-1	175.00	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-248	33724 LOCKEFRD 60.0 33736 LODI JCT 60.0 1	P1-2:A11:91:_Lockeford - Industrial 60 kV Line and P1-2:A11:88:_Lockeford - Lodi 60 kV Line No. 2	P6	N-1/N-1	195.39	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-249	33724 LOCKEFRD 60.0 33739 HNYLNJCT 60.0 1	P1-3:A11:9:_Stagg 230/60 kV Transformer No. 4 and P1-3:A11:8:_Stagg 230/60 kV Transformer No. 1	P6	N-1/N-1	170.35	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-250	33724 LOCKEFRD 60.0 38060 INDUSTRL 60.0 1	P1-2:A28:105:_Lodi - Industrial 60 kV Line and P1-2:A11:88:_Lockeford - Lodi 60 kV Line No. 2	P6	N-1/N-1	160.96	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-251	33725 LOCKFRD1 60.0 33732 COLONY 60.0 1	P1-2:A11:91:_Lockeford - Industrial 60 kV Line and P1-2:A11:88:_Lockeford - Lodi 60 kV Line No. 2	P6	N-1/N-1	161.86	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-252	33726 VICTOR 60.0 33731 WODBRG J 60.0 1	P1-2:A28:105:_Lodi - Industrial 60 kV Line and P1-2:A11:91:_Lockeford - Industrial 60 kV Line	P6	N-1/N-1	164.61	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-253	33728 LODI 60.0 33734 CLNY JCT 60.0 1	P1-2:A11:91:_Lockeford - Industrial 60 kV Line and P1-2:A11:88:_Lockeford - Lodi 60 kV Line No. 2	P6	N-1/N-1	149.07	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-254	33729 LODI AUX 60.0 33736 LODI JCT 60.0 1	P1-2:A11:91:_Lockeford - Industrial 60 kV Line and P1-2:A11:88:_Lockeford - Lodi 60 kV Line No. 2	P6	N-1/N-1	157.90	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-255	33731 WODBRG J 60.0 33735 INDSTR J 60.0 1	P1-2:A28:105:_Lodi - Industrial 60 kV Line and P1-2:A11:91:_Lockeford - Industrial 60 kV Line	P6	N-1/N-1	164.60	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-256	33732 COLONY 60.0 33734 CLNY JCT 60.0 1	P1-2:A11:91:_Lockeford - Industrial 60 kV Line and P1-2:A11:88:_Lockeford - Lodi 60 kV Line No. 2	P6	N-1/N-1	149.01	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-257	33735 INDSTR J 60.0 38060 INDUSTRL 60.0 1	P1-2:A28:105:_Lodi - Industrial 60 kV Line and P1-2:A11:91:_Lockeford - Industrial 60 kV Line	P6	N-1/N-1	164.60	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-258	33738 WATRLJCT 60.0 33740 MSHR 60V 60.0 1	P1-3:A11:9:_Stagg 230/60 kV Transformer No. 4 and P1-3:A11:8:_Stagg 230/60 kV Transformer No. 1	P6	N-1/N-1	170.43	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-259	33739 HNYLNJCT 60.0 33738 WATRLJCT 60.0 1	P1-2:A11:8:_Stagg - Tesla 230 kV Line and P1-2:A11:12:_Stagg 230/21 kV Bank 6	P6	N-1/N-1	170.36	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-T-260	33750 CALVO 60.0 33756 KASSON 60.0 1	P1-2:A11:46:_Vierra - Tracy - Kasson 115 kV Line and P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line	P6	N-1/N-1	101.27	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: Vierra Looping Project
CYVL-T-265	33504 CATARACT 115 33503 FRGTNTP2 115 1	P7-1:A12:18:_Stanislaus-Melones-Manteca No.1 115 kV & Stanislaus-Manteca No.2 115 kV Lines	P7	DCTL	110.11	110.56	111.03	<100.0	<100.0				Action Plan
CYVL-T-266	33506 STANISLS 115 33501 FRGTNTP1 115 1	P7-1:A12:14:_Stanislaus-Manteca No.2 115 kV & Stanislaus-Melones-Riverbank Jct 115 kV Lines	P7	DCTL	110.22	110.82	111.25	<100.0	<100.0				Action Plan
CYVL-T-267	33506 STANISLS 115 33504 CATARACT 115 1	P7-1:A12:18:_Stanislaus-Melones-Manteca No.1 115 kV & Stanislaus-Manteca No.2 115 kV Lines	P7	DCTL	110.15	110.62	111.08	<100.0	<100.0				Action Plan

Study Area: **PG&E Central Valley Sacramento**

Thermal Overloads



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-268	33646 MORMON 60.0 33650 WEBER 1 60.0 1	P7-1:A12:6_Bellota-Tesla 230 kV Line & Bellota-Weber 230 kV Line	P7	DCTL	<100.0	<100.0	101.59	<100.0	<100.0				Explore potential mitigation

Study Area: **PG&E Central Valley Sacramento**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-1	ALLEGHNY 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	5.776	9.609				Sierra Action Plan
CYVL-VD-2	BEALE_1 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	<5.0	8.786				Sierra Action Plan
CYVL-VD-3	BEALE_2 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	<5.0	6.98				Sierra Action Plan
CYVL-VD-4	BRWNS VY 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	<5.0	8.784				Sierra Action Plan
CYVL-VD-5	CLMBA HL 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	5.747	9.573				Sierra Action Plan
CYVL-VD-6	CLNY JCT 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	8.13	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-7	CMP FRWT 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	<5.0	8.759				Sierra Action Plan
CYVL-VD-8	COLGATE 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	5.733	9.556				Sierra Action Plan
CYVL-VD-9	COLONY 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	8.097	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-10	DIST1001 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	8.788	8.607	8.426	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-11	DIST1500 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	8.817	8.632	8.447	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-12	DOBBINS 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	5.744	9.569				Sierra Action Plan
CYVL-VD-13	E.MRYSVE 115 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	4.556	7.062	9.568	<5.0	<5.0				Sierra Action Plan
CYVL-VD-14	E.NICOLS 115 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	7.759	11.388	15.017	<5.0	<5.0				Sierra Action Plan
CYVL-VD-15	ENVRO_HY 60 kV	P1-1:A5:26:_OXBOW F 9.11 Generator ID 1	P1	N-1	6.62	6.537	6.552	<5.0	<5.0				Sierra Action Plan
CYVL-VD-16	FORST HL 60 kV	P1-1:A5:26:_OXBOW F 9.11 Generator ID 1	P1	N-1	5.88	5.805	5.82	<5.0	<5.0				Sierra Action Plan
CYVL-VD-17	GRSS VLY 60 kV	P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P1	N-1	5.799	6.043	6.287	<5.0	<5.0				Sierra Action Plan
CYVL-VD-18	GUSTINE 60 kV	P1-2:A12:19:_S539SS-Newman #1 60 kV Line	P1	N-1	6.429	7.047	7.665	<5.0	<5.0				Explore potential mitigation
CYVL-VD-19	HNYLNJCT 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	7.633	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-20	INDUSTRL 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	8.101	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-21	JAMESN-A 115 kV	P1-2:A4:38:_Vaca - Suisun 115 kV Line	P1	N-1	5.784	5.882	6.882	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-22	KNGHTSLJ 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	8.815	8.63	8.445	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-23	KNTJALT 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	8.79	8.609	8.428	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-24	LEE_JCT 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3	P1	N-1	5.004	5.054	5.104	<5.0	<5.0				Explore potential mitigation
CYVL-VD-25	LTHRP JT 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3	P1	N-1	<5.0	<5.0	5.033	<5.0	<5.0				Explore potential mitigation

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ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-26	MANTECA 60 kV	P1-3:A11:21: _Manteca 115/60 kV Transformer No. 3	P1	N-1	<5.0	<5.0	5.033	<5.0	<5.0				Explore potential mitigation
CYVL-VD-27	MARTELL 60 kV	P1-2:A11:71: _Valley Springs - Martell 60 kV Line No. 1	P1	N-1	5.349	5.792	6.235	<5.0	<5.0				Explore potential mitigation
CYVL-VD-28	MCLANE 60 kV	P1-2:A11:4: _Lockeford - Bellota 230 kV Line	P1	N-1	7.767	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-29	MEDLIN J 60 kV	P1-2:A12:17: _Salado-S539SS #1 60 kV Line	P1	N-1	<5.0	<5.0	5.46	<5.0	<5.0				Explore potential mitigation
CYVL-VD-30	NEWMAN 60 kV	P1-2:A12:19: _S539SS-Newman #1 60 kV Line	P1	N-1	6.142	6.801	7.46	<5.0	<5.0				Explore potential mitigation
CYVL-VD-31	NW HPE J 60 kV	P1-2:A11:4: _Lockeford - Bellota 230 kV Line	P1	N-1	8.182	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-32	OXBOW 60 kV	P1-1:A5:26: _OXBOW F 9.11 Generator ID 1	P1	N-1	6.805	6.721	6.736	<5.0	<5.0				Explore potential mitigation
CYVL-VD-33	PLUMAS 60 kV	P1-2:A5:35: _East Nicolaus - Rio Oso 115 kV Line	P1	N-1	9.07	8.992	8.914	<5.0	<5.0				Sierra Action Plan
CYVL-VD-34	RIPON 115 kV	P1-2:A11:46: _Ripon - Manteca 115 kV Line	P1	N-1	6.005	6.25	6.495	<5.0	<5.0				Action Plan
CYVL-VD-35	ROLLINS 60 kV	P1-1:A5:23: _ROLLINSF 6.60 Generator ID 1	P1	N-1	5.272	5.205	5.085	<5.0	<5.0				Sierra Action Plan
CYVL-VD-36	RPNJN2 115 kV	P1-2:A11:46: _Ripon - Manteca 115 kV Line	P1	N-1	5.624	5.847	6.07	<5.0	<5.0				Action Plan
CYVL-VD-37	SMRTSVLE 60 kV	P1-3:A5:1: _Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	<5.0	<5.0	<5.0	8.753				Sierra Action Plan
CYVL-VD-38	SUMMIT 60 kV	P1-2:A35:20B: _Spaulding - Summit 60 kV Line	P1	N-1	<5.0	<5.0	<5.0	5.042	5.036				Sierra Action Plan
CYVL-VD-39	TUDOR 60 kV	P1-2:A5:35: _East Nicolaus - Rio Oso 115 kV Line	P1	N-1	8.931	8.747	8.563	<5.0	<5.0				Explore potential mitigation
CYVL-VD-40	UCD_TP2 115 kV	P1-2:A4:32: _West Sacramento - Brighton 115 kV Line	P1	N-1	5.069	<5.0	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-41	UCDAVSJ1 115 kV	P1-2:A4:32: _West Sacramento - Brighton 115 kV Line	P1	N-1	5.069	<5.0	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-42	VALLY HM 115 kV	P1-2:A11:46: _Ripon - Manteca 115 kV Line	P1	N-1	<5.0	<5.0	5.15	<5.0	<5.0				Explore potential mitigation
CYVL-VD-43	VICTOR 60 kV	P1-2:A11:4: _Lockeford - Bellota 230 kV Line	P1	N-1	8.057	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-44	WESTLEY 60 kV	P1-3:A11:21: _Manteca 115/60 kV Transformer No. 3	P1	N-1	5.541	5.607	5.673	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-45	WHEATLND 60 kV	P1-2:A5:35: _East Nicolaus - Rio Oso 115 kV Line	P1	N-1	9.217	9.12	9.023	<5.0	<5.0				Sierra Action Plan
CYVL-VD-46	WINERY J 60 kV	P1-2:A11:4: _Lockeford - Bellota 230 kV Line	P1	N-1	8.124	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-47	WLLW SLJ 60 kV	P1-2:A5:35: _East Nicolaus - Rio Oso 115 kV Line	P1	N-1	8.791	8.61	8.429	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-48	WODBRG J 60 kV	P1-2:A11:4: _Lockeford - Bellota 230 kV Line	P1	N-1	8.094	<5.0	<5.0	0.526	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-49	WOODJCT 60 kV	P1-2:A5:35: _East Nicolaus - Rio Oso 115 kV Line	P1	N-1	8.791	8.61	8.429	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-50	WSID 60 kV	P1-3:A11:21: _Manteca 115/60 kV Transformer No. 3	P1	N-1	5.539	5.605	5.671	<5.0	<5.0				Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-51	WSID TAP 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3	P1	N-1	5.539	5.605	5.671	<5.0	<5.0				Action Plan
CYVL-VD-52	ALLEGHNY 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	5.776	9.609	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-53	BEALE_1 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	8.786	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-54	BEALE_2 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	6.98	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-55	BRWNS VY 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	8.784	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-56	CAMPUS 115 kV	P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P1	N-1	<5.0	<5.0	5.086	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-57	CLMBA HL 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	5.747	9.573	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-58	CLNY JCT 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	8.13	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-59	CMP FRWT 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	4.404	8.759	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-60	COLGATE 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	5.733	9.556	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-61	COLONY 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	0.543	<5.0	8.097	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-62	DOBBINS 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	5.744	9.569	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-63	DST1001A 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.623	<5.0				Sacramento Action Plan
CYVL-VD-64	DST1001B 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.607	<5.0				Sacramento Action Plan
CYVL-VD-65	E.MRYSVE 115 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	7.062	<5.0				Sierra Action Plan
CYVL-VD-66	E.NICOLS 115 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	11.388	<5.0				Sierra Action Plan
CYVL-VD-67	ENVRO_HY 60 kV	P1-1:A5:26:_OXBOW F 9.11 Generator ID 1	P1	N-1	<5.0	<5.0	<5.0	6.537	<5.0				Sierra Action Plan
CYVL-VD-68	FORST HL 60 kV	P1-1:A5:26:_OXBOW F 9.11 Generator ID 1	P1	N-1	<5.0	<5.0	5.88	5.805	<5.0				Sierra Action Plan
CYVL-VD-69	GRSS VLY 60 kV	P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P1	N-1	<5.0	<5.0	<5.0	6.043	<5.0				Sierra Action Plan
CYVL-VD-70	GUSTINE 60 kV	P1-2:A12:19:_S539SS-Newman #1 60 kV Line	P1	N-1	<5.0	<5.0	<5.0	7.047	<5.0				Action Plan
CYVL-VD-71	HNYLNJCT 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	7.633	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-72	INDUSTRL 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	8.101	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-73	JAMESN-A 115 kV	P1-2:A4:38:_Vaca - Suisun 115 kV Line	P1	N-1	<5.0	<5.0	5.784	5.882	<5.0				Sacramento Action Plan
CYVL-VD-74	KNGHTSLJ 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.63	<5.0				Sacramento Action Plan
CYVL-VD-75	KNTJALT 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.609	<5.0				Sacramento Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-78	MANTECA 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3	P1	N-1	<5.0	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-79	MCLANE 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	7.767	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-80	NW HPE J 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	8.182	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-81	OXBOW 60 kV	P1-1:A5:26:_OXBOW F 9.11 Generator ID 1	P1	N-1	<5.0	<5.0	6.805	6.721	<5.0				Sierra Action Plan
CYVL-VD-82	POST 115 kV	P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P1	N-1	<5.0	<5.0	7.542	5.114	<5.0				Sacramento Action Plan
CYVL-VD-83	RIPON 115 kV	P1-2:A11:46:_Ripon - Manteca 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	6.25	<5.0				Action Plan
CYVL-VD-84	ROLLINS 60 kV	P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1	P1	N-1	<5.0	<5.0	5.272	5.205	<5.0				Sierra Action Plan
CYVL-VD-85	SMRTSVLE 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P1	N-1	<5.0	8.753	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-86	SUMMIT 60 kV	P1-2:A35:20B:_Spaulding - Summit 60 kV Line	P1	N-1	5.042	5.036	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-87	TUDOR 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.747	<5.0				Sierra Action Plan
CYVL-VD-88	UCD_TP2 115 kV	P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P1	N-1	<5.0	<5.0	5.069	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-89	UCDAVSJ1 115 kV	P1-2:A4:32:_West Sacramento - Brighton 115 kV Line	P1	N-1	<5.0	<5.0	5.069	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-90	VICTOR 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	8.057	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-91	WEST PNT 60 kV	P1-1:A11:21:_WEST PNT 11.50 Generator ID 1	P1	N-1	<5.0	<5.0	7.239	<5.0	<5.0				Explore potential mitigation
CYVL-VD-92	WESTLEY 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3	P1	N-1	<5.0	<5.0	<5.0	5.607	<5.0				Explore potential mitigation
CYVL-VD-93	WHEATLND 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	9.12	<5.0				Sierra Action Plan
CYVL-VD-94	WHTLND1 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	9.118	<5.0				Sierra Action Plan
CYVL-VD-95	WHTLNDAL 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.602	<5.0				Sierra Action Plan
CYVL-VD-96	WINERY J 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	8.124	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-97	WLLW SLJ 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.61	<5.0				Sacramento Action Plan
CYVL-VD-98	WODBRG J 60 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	<5.0	<5.0	8.094	<5.0	<5.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-99	WOODJCT 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line	P1	N-1	<5.0	<5.0	<5.0	8.61	<5.0				Sacramento Action Plan
CYVL-VD-100	AEC_300 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	5.388	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-101	APPLE HL 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	7.73				Sierra Action Plan
CYVL-VD-102	ARBALT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.238	9.07	11.357	<5.0	<5.0				Sacramento Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-103	ARBUCKLE 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.463	9.439	11.896	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-104	ATLANTC 230 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	<5.0	14.13	13.678	<5.0	<5.0				Sierra Action Plan
CYVL-VD-105	ATLANTI 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.291	15.571	15.08	<5.0	<5.0				Sierra Action Plan
CYVL-VD-106	ATLANTIC 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	<5.0	17.512	17.133	<5.0	<5.0				Sierra Action Plan
CYVL-VD-107	AUBURN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-108	AVENA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	8.481	NConv	27.328	NConv				Explore potential mitigation
CYVL-VD-109	BANTA 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.828	NConv				Explore potential mitigation
CYVL-VD-110	BARRY 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	7.058	9.372	9.245	<5.0	<5.0				Explore potential mitigation
CYVL-VD-111	BEALE_1 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	<5.0	19.822				Sierra Action Plan
CYVL-VD-112	BEALE_2 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	<5.0	16.027				Sierra Action Plan
CYVL-VD-113	BEARDSLY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.052	NConv				Explore potential mitigation
CYVL-VD-114	BELL PGE 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-115	BELLOTA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-116	BIGGS 60 kV	P2-2:A5:21_BUS FAULT AT 32332 PEASE 60.00	P2	Bus	5.272	6.853	7.295	<5.0	<5.0				Explore potential mitigation
CYVL-VD-117	BLLTAJCT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	76.529	75.662	75.311	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-118	BNTA CRB 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	27.412	NConv				Explore potential mitigation
CYVL-VD-119	BOGUE 115 kV	P2-3:A5:9:_NON-BUS-TIE BREAKER CB152 FAILURE AT BOGUE 115 kV	P2	Non Bus-tie breaker	6.587	6.402	7.101	<5.0	<5.0				Explore potential mitigation
CYVL-VD-120	BONNIE N 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	23.72	11.074	10.727	<5.0	<5.0				Sierra Action Plan
CYVL-VD-121	BRDSLY J 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.052	43.016				Explore potential mitigation
CYVL-VD-122	BRIGHTON 230 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	<5.0	7.932	7.09	<5.0	<5.0				Explore potential mitigation
CYVL-VD-123	BRKR SLG 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	22.651	10.165	2.325	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-124	BRNSWALT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	20.387	11.317	11.038	<5.0	<5.0				Sierra Action Plan
CYVL-VD-125	BRNSWKTP 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	20.31	11.278	11.001	<5.0	<5.0				Sierra Action Plan
CYVL-VD-126	BRUNSWCK 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	21.118	11.88	11.595	<5.0	<5.0				Sierra Action Plan

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-127	BRWNS VY 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	<5.0	19.816				Explore potential mitigation
CYVL-VD-128	CACHE J1 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	9.356	10.831	11.908	<5.0	5.349				Explore potential mitigation
CYVL-VD-129	CACHE J2 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	<5.0	<5.0	5.521	<5.0	<5.0				Explore potential mitigation
CYVL-VD-130	CALPELLA 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	5.902	6.938	9.012	<5.0	<5.0				Explore potential mitigation
CYVL-VD-131	CALVO 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.793	75.966				Explore potential mitigation
CYVL-VD-132	CAMANCHE 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-133	CAMPUS 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	21.412	9.427	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-134	CAPEHORN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	24.017	11.191	10.846	1.389	1.198				Sierra Action Plan
CYVL-VD-135	CARBONA 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.997	76.181				Explore potential mitigation
CYVL-VD-136	CATARACT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	19.131	51.453				Explore potential mitigation
CYVL-VD-137	CATLETT 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.968	9.271	9.171	<5.0	<5.0				Explore potential mitigation
CYVL-VD-138	CDCRSTN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-139	CH.STN 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.181	NConv				Explore potential mitigation
CYVL-VD-140	CHCGO PK 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	26.178	26.018	<5.0	<5.0				Sierra Action Plan
CYVL-VD-141	CISCO GR 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	20.459	9.383	9.16	<5.0	<5.0				Sierra Action Plan
CYVL-VD-142	CISCOTAP 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	20.465	9.385	9.162	<5.0	<5.0				Sierra Action Plan
CYVL-VD-143	CITY UKH 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	5.35	6.305	8.13	<5.0	<5.0				Explore potential mitigation
CYVL-VD-144	CL AMMNA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	8.95	NConv	NConv	78.97				Explore potential mitigation
CYVL-VD-145	CLAY 60 kV	P2-4:A11:69:_33610 Valley Springs 70 kV CB6222 Internal Breaker Fault	P2	Bus-tie breaker	5.752	5.072	5.145	<5.0	<5.0				Action Plan
CYVL-VD-146	CLRKSULE 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	5.069	8.247				Sierra Action Plan
CYVL-VD-147	CLRKSULT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	5.016	8.088				Sierra Action Plan
CYVL-VD-148	CLSA CRS 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.813	9.929	12.523	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-149	CMNCHETP 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	NConv	NConv	NConv	2.067	2.255				Action Plan. Long term mitigation SPS
CYVL-VD-150	CMP FRWT 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	5.179	19.753				Sierra Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-151	CNTRY CB 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	<5.0	11.677	<5.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-VD-152	COLFAXJT 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	11.185	10.841	<5.0	<5.0				Sierra Action Plan
CYVL-VD-153	COLGATE 230 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	<5.0	5.214	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-154	COLONY 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	12.143	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-VD-155	CORT_D 115 kV	P2-3:A4:18:_NON-BUS-TIE BREAKER CB512 FAILURE AT CORTINA 115kV	P2	Non Bus-tie breaker	5.663	7.864	7.837	6.163	<5.0				Explore potential mitigation
CYVL-VD-156	CORT_D 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	18.234	21.025	22.924	6.513	9.587				Sacramento Action Plan
CYVL-VD-157	CPC STCN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-158	CPEHRNTP 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	24.001	11.184	10.839	<5.0	<5.0				Sierra Action Plan
CYVL-VD-159	CPM 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	9.146	7.061	70.42	5.022	8.108				Explore potential mitigation
CYVL-VD-160	CPM TAP 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	9.146	7.061	70.42	5.022	8.108				Explore potential mitigation
CYVL-VD-161	CRBNA JC 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.837	NConv				Explore potential mitigation
CYVL-VD-162	CRESTA 230 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	<5.0	5.108	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-163	CROSRDJT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	8.949	NConv	31.345	NConv				Explore potential mitigation
CYVL-VD-164	CRWS LDG 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	14.619	NConv	25.327	NConv				Explore potential mitigation
CYVL-VD-165	CRWS LDJ 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	14.553	NConv	25.306	NConv				Explore potential mitigation
CYVL-VD-166	CURTISS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.017	NConv				Explore potential mitigation
CYVL-VD-167	DAVIS 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	21.38	9.415	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-168	DEEPWATR 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	24.092	11.041	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-169	DEL MAR 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.408	15.932	15.432	<5.0	<5.0				Sierra Action Plan
CYVL-VD-170	DELEVAN 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.665	9.702	12.224	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-171	DIMOND_1 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	7.926				Sierra Action Plan
CYVL-VD-172	DIMOND_2 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	7.897				Sierra Action Plan
CYVL-VD-173	DIST1001 60 kV	P2-3:A5:16:_NON-BUS-TIE BREAKER CB1112 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.872	9.127	8.405	<5.0	<5.0				Explore potential mitigation
CYVL-VD-174	DIST1500 60 kV	P2-3:A5:16:_NON-BUS-TIE BREAKER CB1112 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.893	9.154	8.426	<5.0	<5.0				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-175	DIST2047 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.474	9.419	11.807	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-176	DMND SPR 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	7.897				Sierra Action Plan
CYVL-VD-177	DONNELLS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.053	NConv				Explore potential mitigation
CYVL-VD-178	DPWTR_TP 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	23.556	10.761	2.777	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-179	DRAKE 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.543	9.561	12.052	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-180	DRUM 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	27.994	15.257	15.085	<5.0	<5.0				Sierra Action Plan
CYVL-VD-181	DST1001A 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.906	9.163	9.034	<5.0	<5.0				Explore potential mitigation
CYVL-VD-182	DST1001B 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.893	9.146	9.02	<5.0	<5.0				Explore potential mitigation
CYVL-VD-183	DTCH FL1 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	20.802	20.654	<5.0	<5.0				Sierra Action Plan
CYVL-VD-184	DTCH FL2 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	13.64	13.429	<5.0	<5.0				Sierra Action Plan
CYVL-VD-185	DUNNIGAN 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.665	9.752	12.292	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-186	DUNNTAP 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.464	9.441	11.898	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-187	E.MRY J2 115 kV	P2-3:A5:16:_NON-BUS-TIE BREAKER CB1112 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	<5.0	7.31	10.033	<5.0	<5.0				Sierra Action Plan
CYVL-VD-188	E.MRYSVE 115 kV	P2-3:A5:16:_NON-BUS-TIE BREAKER CB1112 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	<5.0	7.312	10.036	<5.0	<5.0				Sierra Action Plan
CYVL-VD-189	E.NICOLS 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.886	9.136	9.011	<5.0	<5.0				Explore potential mitigation
CYVL-VD-190	E.NICOLS 115 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.297	11.813	15.817	<5.0	<5.0				Sierra Action Plan
CYVL-VD-191	EIGHT MI 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	13.08	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-192	ELDORAD 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	7.64				Sierra Action Plan
CYVL-VD-193	ELLS GTY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	11.703	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-194	ENCINAL 60 kV	P2-2:A5:21_BUS FAULT AT 32332 PEASE 60.00	P2	Bus	8.874	11.344	12.048	<5.0	<5.0				Sierra Action Plan
CYVL-VD-195	ENVRO_HY 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	24.245	11.284	10.943	<5.0	<5.0				Sierra Action Plan
CYVL-VD-196	FBERBORD 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.013	NConv				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-197	FLINT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	48.931	NConv	<5.0	5.299				Sierra Action Plan
CYVL-VD-198	FORST HL 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	24.46	11.374	11.03	<5.0	<5.0				Sierra Action Plan
CYVL-VD-199	FRGTNTP1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	18.875	NConv				Explore potential mitigation
CYVL-VD-200	FRGTNTP2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	18.921	NConv				Explore potential mitigation
CYVL-VD-201	FRNCH MS 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	7.159	<5.0	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-202	FROGTOWN 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	18.875	NConv				Explore potential mitigation
CYVL-VD-203	GOLD HLL 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-204	GOLDHILL 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	5.051	8.197				Sierra Action Plan
CYVL-VD-205	GOLDHILL 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	7.796	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-206	GRANITE 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	15.492	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-207	GRIDLEY 60 kV	P2-2:A5:21_BUS FAULT AT 32332 PEASE 60.00	P2	Bus	6.405	8.279	8.806	<5.0	<5.0				Explore potential mitigation
CYVL-VD-208	GRONMYER 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-209	GUSTINE 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	15.464	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-210	GWFTRACY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	5.434	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-211	HALSEY 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-212	HAMMER 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	<5.0	11.213	<5.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-VD-213	HARINTON 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.518	9.523	12.003	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-214	HAYPRESS 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	20.513	7.924	7.456	<5.0	<5.0				Sierra Action Plan
CYVL-VD-215	HIGHLAND 115 kV	P2-3:A4:24:_NON-BUS-TIE BREAKER CB322 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	5.329	6.684	7.301	<5.0	<5.0				Explore potential mitigation
CYVL-VD-216	HGHLNDJ2 115 kV	P2-3:A4:24:_NON-BUS-TIE BREAKER CB322 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	5.328	6.683	7.299	<5.0	<5.0				Explore potential mitigation
CYVL-VD-217	HIGGINS 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	67.21	NConv	NConv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-218	HJ HEINZ 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	9.616	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-219	HMMR JCT 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	<5.0	10.923	<5.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-VD-220	HNYLNJCT 60 kV	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	16.602	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-VD-221	HOMEGRND 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	7.051	8.157	9.018	<5.0	<5.0				Explore potential mitigation

Study Area: **PG&E Central Valley Sacramento**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-222	HOMSTKTP 115 kV	P2-3:A4:20:_NON-BUS-TIE BREAKER CB532 FAILURE AT CORTINA 115kV	P2	Non Bus-tie breaker	<5.0	13.572	13.408	<5.0	9.63				Explore potential mitigation
CYVL-VD-223	HORSESHE 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	6.988				Sierra Action Plan
CYVL-VD-224	HPLND JT 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	<5.0	<5.0	5.795	<5.0	<5.0				Explore potential mitigation
CYVL-VD-225	HUSTD 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.106	8.875	11.104	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-226	INDIN VL 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	14.318	16.624	18.663	5.317	7.852				Explore potential mitigation
CYVL-VD-227	INDSTR J 60 kV	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	11.951	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-VD-228	INDUSTRL 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	10.042	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-229	INE PRSN 60 kV	P2-4:A11:69:_33610 Valley Springs 70 kV CB6222 Internal Breaker Fault	P2	Bus-tie breaker	5.43	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-230	INE_TP 60 kV	P2-4:A11:69:_33610 Valley Springs 70 kV CB6222 Internal Breaker Fault	P2	Bus-tie breaker	5.371	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-231	INGRM C. 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	12.081	NConv	28.857	NConv				Explore potential mitigation
CYVL-VD-232	JAMESN-A 115 kV	P2-3:A4:5:_NON-BUS-TIE BREAKER CB1422 FAILURE AT VACA-DIXON 115kV	P2	Non Bus-tie breaker	5.786	5.883	6.91	1.25	1.209				Explore potential mitigation
CYVL-VD-233	KASSON 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	3.01	NConv	26.823	NConv				Explore potential mitigation
CYVL-VD-234	KASSON 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	8.372	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-235	KNGHTSLJ 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.912	9.17	9.04	<5.0	<5.0				Explore potential mitigation
CYVL-VD-236	KNIGHT2 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	12.228	<5.0	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-237	KNIGHTLD 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	12.186	<5.0	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-238	KNTJALT 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	6.894	9.148	9.022	<5.0	<5.0				Explore potential mitigation
CYVL-VD-239	LAMMERS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	5.774	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-240	LCKFRDJA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-241	LEE_JCT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.817	NConv				Explore potential mitigation
CYVL-VD-242	LEPRINO 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	9.768	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-243	LID 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.702	NConv				Explore potential mitigation
CYVL-VD-244	LIMESTNE 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-245	LINCLN 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.322	10.989	10.556	<5.0	<5.0				Sierra Action Plan

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-VD-246	LIVE OAK 60 kV	P2-2:A5:21_BUS FAULT AT 32332 PEASE 60.00	P2	Bus	8.399	10.758	11.43	<5.0	<5.0				Sierra Action Plan
CYVL-VD-247	LOCKEFRD 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	9.865	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-248	LOCKFORD 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	NConv	NConv	NConv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-249	LOCKFORD 230 kV	P2-4:A11:17:_30500 Bellota 230 kV Bus CB822 Internal Breaker Fault (2D and 2E)	P2	Bus-tie breaker	12.277	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-250	LOCKFRD1 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	9.865	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-251	LODI 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	10.062	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-252	LODI 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus-tie breaker	12.864	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-253	LODI JCT 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	10.032	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-254	LOUISE 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.687	NConv				Explore potential mitigation
CYVL-VD-255	LOUISJCT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.674	NConv				Explore potential mitigation
CYVL-VD-256	LOWR LKE 60 kV	P2-3:A4:20:_NON-BUS-TIE BREAKER CB532 FAILURE AT CORTINA 115kV	P2	Non Bus-tie breaker	0.331	5.154	5.102	<5.0	<5.0				Explore potential mitigation
CYVL-VD-257	LTHRP JT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.653	NConv				Explore potential mitigation
CYVL-VD-258	LUCERNE 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	10.963	12.808	14.963	<5.0	6.292				Explore potential mitigation
CYVL-VD-259	LYOTH-SP 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.837	NConv				Explore potential mitigation
CYVL-VD-260	MANTECA 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	26.653	NConv				Explore potential mitigation
CYVL-VD-261	MANTECA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	9.608	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-262	MAXWELL 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.666	9.703	12.226	<5.0	<5.0				Explore potential mitigation
CYVL-VD-263	MCLANE 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	11.922	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-264	MCSP 60 kV	P2-4:A11:69:_33610 Valley Springs 70 kV CB6222 Internal Breaker Fault	P2	Bus-tie breaker	5.428	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-265	MCSPJT 60 kV	P2-4:A11:69:_33610 Valley Springs 70 kV CB6222 Internal Breaker Fault	P2	Bus-tie breaker	5.428	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-266	MDSTO CN 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	15.254	NConv	27.402	NConv				Explore potential mitigation
CYVL-VD-267	MEDLIN J 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	14.118	NConv	24.415	NConv				Explore potential mitigation
CYVL-VD-268	MELNS JA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	18.583	NConv				Sierra Action Plan
CYVL-VD-269	MELNS JB 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	18.701	NConv				Explore potential mitigation
CYVL-VD-270	MELONES 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.581	42.58				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-VD-271	METTLER 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	8.764	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-272	MIDDLTWN 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	<5.0	<5.0	5.329	<5.0	<5.0				Explore potential mitigation
CYVL-VD-273	MIDDLTWN 115 kV	P2-3:A4:20:_NON-BUS-TIE BREAKER CB532 FAILURE AT CORTINA 115kV	P2	Non Bus-tie breaker	12.582	12.44	12.298	7.462	9.468				Explore potential mitigation
CYVL-VD-274	MIDLFORK 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	7.606	<5.0	<5.0	<5.0	<5.0				Sierra Action Plan
CYVL-VD-275	MILER TP 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	14.591	Nconv	27.243	82.861				Explore potential mitigation
CYVL-VD-276	MI-WUK 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	NConv	15.036	NConv				Explore potential mitigation
CYVL-VD-277	MIZOU_T1 115 kV	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	14.306	8.987	8.326	<5.0	<5.0				Sierra Action Plan
CYVL-VD-278	MIZOU_T1 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	4.949	7.885				Sierra Action Plan
CYVL-VD-279	MNTCA JT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	4.059	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-280	MONDAVI 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	10.071	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-281	MORADAJT 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	79.35	<5.0	<5.0	10.494	<5.0				Short term: Action Plan
CYVL-VD-282	MSHR 60V 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	<5.0	7.845	<5.0				Short term: Action Plan
CYVL-VD-283	MSSDLESW 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	26.689	Nconv				Explore potential mitigation
CYVL-VD-284	MTN_QJCT 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-285	MTN_QUAR 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-286	NARRWS 2 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	5.198	19.761				Sierra Action Plan
CYVL-VD-287	NEWCSTLE 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	5.839				Sierra Action Plan
CYVL-VD-288	NEWMAN 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	15.017	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-289	NRRWS1TP 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	5.213	19.773				Explore potential mitigation
CYVL-VD-290	NRRWS2TP 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	5.193	19.751				Sierra Action Plan
CYVL-VD-291	NW HPE J 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	10.121	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-292	NWMN JCT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	14.94	Nconv	24.228	Nconv				Explore potential mitigation
CYVL-VD-293	OI GLASS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	5.819	Nconv	32.55	Nconv				Explore potential mitigation
CYVL-VD-294	OLETA 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Explore potential mitigation
CYVL-VD-295	OLIVHRST 115 kV	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	6.115	5.341	5.948	<5.0	<5.0				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-296	OWENSTP1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	5.816	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-297	OWENSTP2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	5.645	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-298	OXBOW 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	24.19	11.261	10.921	<5.0	<5.0				Sierra Action Plan
CYVL-VD-299	PATTERSN 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	14.329	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-300	PEACHTON 60 kV	P2-2:A5:21_BUS FAULT AT 32332 PEASE 60.00	P2	Bus	6.022	7.799	8.297	<5.0	<5.0				Explore potential mitigation
CYVL-VD-301	PENRYN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-302	PEORIA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	2.673	Nconv	15.284	42.457				Explore potential mitigation
CYVL-VD-303	PLACER 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Sierra Action Plan
CYVL-VD-304	PLACER 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	5.043				Sierra Action Plan
CYVL-VD-305	PLSNT GR 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.106	15.847	15.447	<5.0	<5.0				Sierra Action Plan
CYVL-VD-306	PLUMAS 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	7.125	9.556	9.548	<5.0	<5.0				Sierra Action Plan
CYVL-VD-307	POST 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	23.558	10.762	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-308	Q539 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	13.853	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-309	Q539SS 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	13.853	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-310	R.TRACK 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	15.589	Nconv				Explore potential mitigation
CYVL-VD-311	RCTRK J. 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	15.118	Nconv				Explore potential mitigation
CYVL-VD-312	REDBUD 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	<5.0	<5.0	5.885	<5.0	<5.0				Explore potential mitigation
CYVL-VD-313	RIO OSO 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	5.877	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-314	RIO OSO 230 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	<5.0	10.433	9.961	<5.0	<5.0				Sierra Action Plan
CYVL-VD-315	RIPON 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	9.117	NConv	28.467	NConv				Explore potential mitigation
CYVL-VD-316	RIVRBKJT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	NConv	7.866	NConv	24.957	NConv				Explore potential mitigation
CYVL-VD-317	ROCKLIN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.317	15.653	15.163	<5.0	<5.0				Sierra Action Plan
CYVL-VD-318	ROLLNSTP 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	23.893	11.138	10.797	<5.0	<5.0				Sierra Action Plan
CYVL-VD-319	RPN JNCN 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	9.136	Nconv	29.277	74.02				Explore potential mitigation

Study Area: **PG&E Central Valley Sacramento**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-320	RPNJN2 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	21.196	17.053	17.294	<5.0	<5.0				Explore potential mitigation
CYVL-VD-321	RVRBANK 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	<5.0	<5.0	NConv	<5.0	7.836				Explore potential mitigation
CYVL-VD-322	SAFEWAY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	5.455	Nconv	32.76	Nconv				Explore potential mitigation
CYVL-VD-323	SALADO 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	14.057	Nconv	26.131	Nconv				Explore potential mitigation
CYVL-VD-324	SALADO 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	14.206	Nconv	27.049	Nconv				Explore potential mitigation
CYVL-VD-325	SALADO J 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	13.856	Nconv	27.337	Nconv				Explore potential mitigation
CYVL-VD-326	SALDO TP 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	14.529	Nconv	27.124	Nconv				Explore potential mitigation
CYVL-VD-327	SANDBAR 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	15.051	Nconv				Explore potential mitigation
CYVL-VD-328	SCHULTE 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	5.505	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-329	SEBASTIA 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus-tie breaker	10.562	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-330	SFWY_TP1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	5.455	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-331	SFWY_TP2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	5.457	Nconv	Nconv	Nconv				Explore potential mitigation
CYVL-VD-332	SHADYGLN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	24.002	11.184	10.84	<5.0	<5.0				Sierra Action Plan
CYVL-VD-333	SHPRING 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	8.013				Sierra Action Plan
CYVL-VD-334	SHW 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	<5.0	12.214	<5.0				Short term: Action Plan
CYVL-VD-335	SHWSS 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	<5.0	12.214	<5.0				Short term: Action Plan
CYVL-VD-336	SIERRAPI 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.408	15.932	15.433	<5.0	<5.0				Sierra Action Plan
CYVL-VD-337	SJ COGEN 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	<5.0	9.07	Nconv	<5.0	Nconv				Explore potential mitigation
CYVL-VD-338	SMRTSVLE 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus-tie breaker	<5.0	<5.0	<5.0	5.176	19.739				Sierra Action Plan
CYVL-VD-339	SNDBR JT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	15.051	Nconv				Explore potential mitigation
CYVL-VD-340	SP CMPNY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	<5.0	8.315	Nconv	<5.0	Nconv				Explore potential mitigation
CYVL-VD-341	SPC JCT. 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	<5.0	9.112	Nconv	<5.0	79.6				Explore potential mitigation
CYVL-VD-342	SPI JCT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.337	10.578	10.143	<5.0	<5.0				Explore potential mitigation
CYVL-VD-343	SPICAMIN 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	7.729				Sierra Action Plan
CYVL-VD-344	SPRNG GJ 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	Nconv	Nconv	Nconv	1.052	1.769				Action Plan. Long term mitigation SPS

Study Area: **PG&E Central Valley Sacramento**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-345	STAGG 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	<5.0	11.97	<5.0				Short term: Action Plan
CYVL-VD-346	STAGG 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus-tie breaker	13.748	<5.0	<5.0	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-347	STAGG JT 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	NConv	<5.0	<5.0	11.973	<5.0				Short term: Action Plan
CYVL-VD-348	STANISLS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	19.217	Nconv				Action Plan. Long term mitigation SPS
CYVL-VD-349	STCKTNJB 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-350	STKTON A 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-351	STN COGN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	Nconv	Nconv	Nconv	<5.0	<5.0				Action Plan. Long term mitigation SPS
CYVL-VD-352	STNSLSRP 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	13.707	Nconv	24.634	Nconv				Explore potential mitigation
CYVL-VD-353	SUISUN 115 kV	P2-3:A4:5:_NON-BUS-TIE BREAKER CB1422 FAILURE AT VACA-DIXON 115kV	P2	Bus-tie breaker	6.099	6.202	7.293	<5.0	<5.0				Explore potential mitigation
CYVL-VD-354	SUMMIT 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	Nconv	9.545	9.434	<5.0	<5.0				Explore potential mitigation
CYVL-VD-355	TAYLOR 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.309	15.629	15.138	<5.0	<5.0				Sierra Action Plan
CYVL-VD-356	TCHRT_T1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	15.462	Nconv	27.478	Nconv				Explore potential mitigation
CYVL-VD-357	TCHRT_T2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	12.569	Nconv	29.063	Nconv				Explore potential mitigation
CYVL-VD-358	TEICHERT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	15.498	Nconv	27.511	Nconv				Explore potential mitigation
CYVL-VD-359	TERMNOUS 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	<5.0	12.141	<5.0				Explore potential mitigation
CYVL-VD-360	TERMNS J 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	84.749	<5.0	<5.0	12.126	<5.0				Explore potential mitigation
CYVL-VD-361	TH.E.DV. 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	<5.0	9.765	NConv	<5.0	NConv				Explore potential mitigation
CYVL-VD-362	TRACY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	9.676	NConv	NConv	NConv				Explore potential mitigation
CYVL-VD-363	TUDOR 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Bus-tie breaker	7.002	9.295	9.168	<5.0	<5.0				Explore potential mitigation
CYVL-VD-364	TULLOCH 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	1.538	Nconv	11.722	NConv				Explore potential mitigation
CYVL-VD-365	UCD_TP2 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	21.392	9.422	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-366	UCDAVSJ1 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	21.392	9.422	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-367	UKIAH 115 kV	P2-3:A4:24:_NON-BUS-TIE BREAKER CB322 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	<5.0	<5.0	5.505	<5.0	<5.0				Explore potential mitigation
CYVL-VD-368	ULTRA JT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.142	14.914	14.504	<5.0	<5.0				Sierra Action Plan

Study Area: **PG&E Central Valley Sacramento**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-369	ULTR-RCK 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	5.129	14.868	14.452	<5.0	<5.0				Sierra Action Plan
CYVL-VD-370	UOP 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	<5.0	11.627	<5.0				Short term: Action Plan
CYVL-VD-371	VALLY HM 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	8.149	Nconv	25.612	Nconv				Explore potential mitigation
CYVL-VD-372	VICTOR 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	9.944	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-373	VIERRA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	9.057	Nconv	NConv	Nconv				Explore potential mitigation
CYVL-VD-374	VLHYMTP1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	8.148	Nconv	25.612	Nconv				Explore potential mitigation
CYVL-VD-375	VLHYMTP2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	8.399	Nconv	27.237	Nconv				Explore potential mitigation
CYVL-VD-376	W.SCRMNO 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	23.789	10.901	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-377	WADHMJCT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	5.911	8.343	10.629	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-378	WATRLJCT 60 kV	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	41.833	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan Long term mitigation is Stagg-Hammer 60 kV Line
CYVL-VD-379	WDLND_BM 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	16.747	6.784	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-380	WEMR SWS 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	24.162	11.25	10.904	<5.0	<5.0				Sierra Action Plan
CYVL-VD-381	WESCOT1 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.097	8.628	11.046	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-382	WESCOT2 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	5.937	8.38	10.683	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-383	WEST JCT 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	5.179	19.751				Sierra Action Plan
CYVL-VD-384	WESTLEY 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	4.315	Nconv	28.137	Nconv				Sacramento Action Plan
CYVL-VD-385	WHEATLND 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	7.233	9.692	9.666	<5.0	<5.0				Explore potential mitigation
CYVL-VD-386	WHTLND1 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	7.232	9.691	9.664	<5.0	<5.0				Explore potential mitigation
CYVL-VD-387	WHTLNDAL 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	0.027	9.14	9.015	<5.0	<5.0				Explore potential mitigation
CYVL-VD-388	WILKINS 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.472	9.416	11.803	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-389	WILL JCT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.351	9.241	11.599	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-390	WILLIAMS 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	5.975	8.435	10.754	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-391	WILSONAV 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.84	9.972	12.579	<5.0	<5.0				Sacramento Action Plan

Study Area: **PG&E Central Valley Sacramento**

Voltage Deviations



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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-392	WINERY J 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	10.063	<5.0	<5.0	<5.0	<5.0				Short term: Action Plan
CYVL-VD-393	WLKSLJCT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	6.452	9.386	11.765	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-394	WOODLD 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	15.91	6.302	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-395	WSID 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	28.136	Nconv				Explore potential mitigation
CYVL-VD-396	WSID TAP 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	Nconv	28.135	Nconv				Explore potential mitigation
CYVL-VD-397	WSTLNSW 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	Nconv	<5.0	<5.0	11.27	<5.0				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-VD-398	YUBAGOLD 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	<5.0	<5.0	<5.0	<5.0	19.814				Sierra Action Plan
CYVL-VD-399	ZAMORA 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	12.648	<5.0	<5.0	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-400	APLHTAP2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	20.402	16.645	15.886	<5.0	<5.0				Sierra Action Plan
CYVL-VD-401	APPLE HL 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	14.729	11.624	11.024	<5.0	<5.0				Sierra Action Plan
CYVL-VD-402	ARBALT 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	12.765	13.348	13.931	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-403	ARBJCT 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	12.135	12.695	13.255	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-404	ARBUCKLE 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	9.943	10.274	10.605	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-405	BEALE_2 60 kV	P2-1:A5:91:_SMRTSVLE-BEALE2J1 #1 60 kV	P2-1	Line section w/o fault	<5.0	<5.0	<5.0	<5.0	6.785				Explore potential mitigation
CYVL-VD-406	BEALE1J2 60 kV	P2-1:A5:91:_SMRTSVLE-BEALE2J1 #1 60 kV	P2-1	Line section w/o fault	<5.0	<5.0	<5.0	<5.0	6.776				Explore potential mitigation
CYVL-VD-407	BEALE2J1 60 kV	P2-1:A5:91:_SMRTSVLE-BEALE2J1 #1 60 kV	P2-1	Line section w/o fault	<5.0	<5.0	<5.0	<5.0	6.784				Explore potential mitigation
CYVL-VD-408	BIGGS 60 kV	P2-1:A5:98:_ENCL TAP-LIVE OAK #1 60 kV	P2-1	Line section w/o fault	5.114	6.7	7.103	<5.0	<5.0				Explore potential mitigation
CYVL-VD-409	BRNSWCKP 115 kV	P2-1:A5:36:_DRUM-BRNSWCKP #2 115 kV	P2-1	Line section w/o fault	6.063	<5.0	<5.0	<5.0	2.682				Explore potential mitigation
CYVL-VD-410	CACHSLJ1 60 kV	P2-1:A4:97:_VACA-DXN-VACA-JT1 #1 60 kV	P2-1	Line section w/o fault	5.685	5.774	<5.0	<5.0	2.662				Explore potential mitigation

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-411	CALVO 60 kV	P2-4:A11:19:_BUS-TIE BREAKER FAULT AT 33540 TESLA 115.00	P2-1	Line section w/o fault	<5.0	<5.0	<5.0	<5.0	NConv				Explore potential mitigation
CYVL-VD-412	CAMPUS 115 kV	P2-1:A4:35:_DPWT_TP2-BRIGHTN #1 115 kV	P2-1	Line section w/o fault	5.033	<5.0	<5.0	<5.0	0.628				Explore potential mitigation
CYVL-VD-413	CHCGO PK 115 kV	P2-1:A5:37:_DTCH FL1-CHCGO PK #1 115 kV	P2-1	Line section w/o fault	6.619	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-414	CLAY 60 kV	P2-1:A11:107:_CLAY-BUENA_TP #1 60 kV	P2-1	Line section w/o fault	6.116	5.669	5.669	<5.0	<5.0				Explore potential mitigation
CYVL-VD-415	DEEPWATR 115 kV	P2-1:A4:35:_DPWT_TP2-BRIGHTN #1 115 kV	P2-1	Line section w/o fault	7.844	5.171	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-416	DIMOND_2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	23.357	19.403	18.588	<5.0	<5.0				Sierra Action Plan
CYVL-VD-417	DIST2047 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	12.628	13.158	14.01	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-418	DMND SPR 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	23.363	19.407	18.593	<5.0	<5.0				Sierra Action Plan
CYVL-VD-419	DRAKE 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	10.071	10.398	10.99	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-420	DUNNIGAN 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	10.267	10.577	11.207	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-421	DUNNTAP 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	9.945	10.276	10.851	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-422	ELDORAD 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	17.071	13.602	12.928	<5.0	<5.0				Sierra Action Plan
CYVL-VD-423	ENCINAL 60 kV	P2-1:A5:97:_ENCL TAP-PEASE #1 60 kV	P2-1	Line section w/o fault	8.891	11.365	12.039	<5.0	<5.0				Sierra Action Plan
CYVL-VD-424	ENVRO_HY 60 kV	P2-1:A5:127:_ENVRO_HY-OXBOW #1 60 kV	P2-1	Line section w/o fault	6.636	6.557	6.573	<5.0	<5.0				Explore potential mitigation
CYVL-VD-425	FORST HL 60 kV	P2-1:A5:127:_ENVRO_HY-OXBOW #1 60 kV	P2-1	Line section w/o fault	5.893	5.822	5.837	<5.0	1.937				Explore potential mitigation
CYVL-VD-426	GRIDLEY 60 kV	P2-1:A5:98:_ENCL TAP-LIVE OAK #1 60 kV	P2-1	Line section w/o fault	6.217	8.095	8.583	<5.0	<5.0				Explore potential mitigation

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-427	GRONMYER 60 kV	P2-4:A11:19:_BUS-TIE BREAKER FAULT AT 33540 TESLA 115.00	P2-1	Line section w/o fault	<5.0	<5.0	5.418	<5.0	NConv				Explore potential mitigation
CYVL-VD-428	HARINTON 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	10.031	10.359	10.687	<5.0	<5.0				Sacramento Action Plan
CYVL-VD-429	JAMESN-A 115 kV	P2-1:A4:60:_WEC-SUISUN #1 115 kV	P2-1	Line section w/o fault	5.799	5.897	5.995	<5.0	<5.0				Explore potential mitigation
CYVL-VD-430	MEDLIN J 60 kV	P2-1:A12:50:_Q539SS-MEDLIN J #1 60 kV	P2-1	Line section w/o fault	<5.0	5.823	6.826	<5.0	<5.0				Explore potential mitigation
CYVL-VD-431	MIZOU_T2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	22.934	18.995	18.186	<5.0	<5.0				Sierra Action Plan
CYVL-VD-432	MNTCA JT 60 kV	P2-4:A11:19:_BUS-TIE BREAKER FAULT AT 33540 TESLA 115.00	P2-1	Line section w/o fault	<5.0	<5.0	<5.0	<5.0	NConv				Explore potential mitigation
CYVL-VD-433	MSSDLESW 60 kV	P2-4:A11:19:_BUS-TIE BREAKER FAULT AT 33540 TESLA 115.00	P2-1	Line section w/o fault	<5.0	<5.0	<5.0	<5.0	NConv				Explore potential mitigation
CYVL-VD-434	OLIVHRST 115 kV	P2-1:A5:72:_OLIVH J1-RIO OSO #1 115 kV	P2-1	Line section w/o fault	<5.0	<5.0	5.089	<5.0	<5.0				Explore potential mitigation
CYVL-VD-435	PATTERSN 60 kV	P2-1:A12:43:_SALADO-PATTERSN #1 60 kV	P2-1	Line section w/o fault	6.278	7.102	7.926	<5.0	<5.0				Explore potential mitigation
CYVL-VD-436	PEACHTON 60 kV	P2-1:A5:98:_ENCL TAP-LIVE OAK #1 60 kV	P2-1	Line section w/o fault	5.844	7.625	8.085	<5.0	<5.0				Explore potential mitigation
CYVL-VD-437	PLCRVLB2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	22.498	18.577	17.773	<5.0	<5.0				Sierra Action Plan
CYVL-VD-438	PLCRVLB3 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	22.501	18.58	17.775	<5.0	<5.0				Sierra Action Plan
CYVL-VD-439	PLCRVLT1 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	10.921	8.426	7.955	<5.0	<5.0				Sierra Action Plan
CYVL-VD-440	PLCRVLT2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	22.493	18.574	17.77	<5.0	<5.0				Sierra Action Plan
CYVL-VD-441	POST 115 kV	P2-1:A4:38:_DPWTR_TP-W.SCRMNO #1 115 kV	P2-1	Line section w/o fault	6.161	5.838	5.515	<5.0	<5.0				Explore potential mitigation
CYVL-VD-442	ROLLNSTP 60 kV	P2-1:A5:131:_ROLLINS-ROLLNSTP #1 60 kV	P2-1	Line section w/o fault	5.038	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-443	SCHMLBCH 115 kV	P2-1:A4:60:_WEC-SUISUN #1 115 kV	P2-1	Line section w/o fault	5.798	5.896	5.994	<5.0	<5.0				Explore potential mitigation
CYVL-VD-444	SPICAMIN 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	14.727	11.622	11.022	<5.0	<5.0				Sierra Action Plan
CYVL-VD-445	SUMMIT 60 kV	P2-1:A35:10B:_SUMMIT 3-SUMMIT #1 60 kV	P2-1	Line section w/o fault	<5.0	<5.0	2.283	5.042	5.036				Explore potential mitigation
CYVL-VD-446	TRAVIS 60 kV	P2-1:A4:97:_VACA-DXN-VACA-JT1 #1 60 kV	P2-1	Line section w/o fault	6.536	6.627	6.718	<5.0	<5.0				Explore potential mitigation
CYVL-VD-447	TRVS_HPT 60 kV	P2-1:A4:97:_VACA-DXN-VACA-JT1 #1 60 kV	P2-1	Line section w/o fault	6.512	6.603	6.694	<5.0	<5.0				Explore potential mitigation
CYVL-VD-448	UCD_TP2 115 kV	P2-1:A4:35:_DPWT_TP2-BRIGHTN #1 115 kV	P2-1	Line section w/o fault	5.016	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-449	UCDAVSJ1 115 kV	P2-1:A4:35:_DPWT_TP2-BRIGHTN #1 115 kV	P2-1	Line section w/o fault	5.016	<5.0	<5.0	<5.0	<5.0				Explore potential mitigation
CYVL-VD-450	VACA-JT1 60 kV	P2-1:A4:97:_VACA-DXN-VACA-JT1 #1 60 kV	P2-1	Line section w/o fault	6.214	6.307	6.4	<5.0	<5.0				Explore potential mitigation
CYVL-VD-451	VALLY HM 115 kV	P2-1:A11:35:_RPN JNCN-RIPON #1 115 kV	P2-1	Line section w/o fault	<5.0	8.149	5.147	<5.0	NConv				Explore potential mitigation
CYVL-VD-452	ALMENDRA 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-453	COLONY 60 kV	P7-1:A12:11:_Lockeford-Bellota 230 kV Line & Brighton-Bellota 230 kV Line	P7	DCTL	10.022	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-454	DEEPWATR 115 kV	P7-1:A4:17_Rio Oso-West Sacramento 115 kV Line & West Sacramento-Brighton 115 kV Line	P7	DCTL	12.085	<10.0	<10.0	<10.0	<10.0				Sacramento Action Plan
CYVL-VD-455	E.MRY J2 115 kV	P7-1:A5:12_Rio Oso-Nicolaus 115 kV Line & Bogue-Rio Oso 115 kV Line	P7	DCTL	<10.0	<10.0	10.228	<10.0	<10.0				Sierra Action Plan
CYVL-VD-456	E.NICOLS 115 kV	P7-1:A5:12_Rio Oso-Nicolaus 115 kV Line & Bogue-Rio Oso 115 kV Line	P7	DCTL	<10.0	11.887	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-457	EIGHT MI 230 kV	P7-1:A12:1:_Stagg-Tesla 230 kV Line & Eight Mile Road-Tesla 230 kV Line	P7	DCTL	10.658	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-458	ENCINAL 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-459	GLEAF2 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-460	HARTER 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-461	LIVE OAK 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-462	LOCKFORD 230 kV	P7-1:A12:11:_Lockeford-Bellota 230 kV Line & Brighton-Bellota 230 kV Line	P7	DCTL	13.873	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL

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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-VD-463	LODI 60 kV	P7-1:A12:11:_Lockeford-Bellota 230 kV Line & Brighton-Bellota 230 kV Line	P7	DCTL	10.086	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-464	LODI 230 kV	P7-1:A12:1:_Stagg-Tesla 230 kV Line & Eight Mile Road-Tesla 230 kV Line	P7	DCTL	10.44	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-465	MONDAVI 60 kV	P7-1:A12:11:_Lockeford-Bellota 230 kV Line & Brighton-Bellota 230 kV Line	P7	DCTL	10.096	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-466	MRYSVLE 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-467	PEASE 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan
CYVL-VD-468	PEASE 115 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	10.397	<10.0				Sierra Action Plan
CYVL-VD-469	POST 115 kV	P7-1:A4:17_Rio Oso-West Sacramento 115 kV Line & West Sacramento-Brighton 115 kV Line	P7	DCTL	11.806	<10.0	<10.0	<10.0	<10.0				Sacramento Action Plan
CYVL-VD-470	STAGG 230 kV	P7-1:A12:1:_Stagg-Tesla 230 kV Line & Eight Mile Road-Tesla 230 kV Line	P7	DCTL	11.353	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-471	W.SCRMNO 115 kV	P7-1:A4:17_Rio Oso-West Sacramento 115 kV Line & West Sacramento-Brighton 115 kV Line	P7	DCTL	11.816	<10.0	<10.0	<10.0	<10.0				Sacramento Action Plan
CYVL-VD-472	WINERY J 60 kV	P7-1:A12:11:_Lockeford-Bellota 230 kV Line & Brighton-Bellota 230 kV Line	P7	DCTL	10.088	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-473	WODBRG J 60 kV	P7-1:A12:11:_Lockeford-Bellota 230 kV Line & Brighton-Bellota 230 kV Line	P7	DCTL	10.045	<10.0	<10.0	<10.0	<10.0				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-VD-474	YBA CTYJ 60 kV	P7-1:A5:20_Palermo-Pease 115 kV Line & Pease-Rio Oso 115 kV Line	P7	DCTL	Nconv	<10.0	<10.0	<10.0	<10.0				Sierra Action Plan

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High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-V-1	APPLE HL 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	<1.1	1.1171				Explore potential mitigation
CYVL-V-2	CACHSLJ1 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.077	1.106				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-3	CACHSLJ2 60 kV	P1-2:A4:51:_Dixon - Vaca 60 kV Line No. 1	P1	N-1	<1.1	<1.1	<1.1	1.069	1.1029				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-4	CACHSTAP 60 kV	P1-2:A4:51:_Dixon - Vaca 60 kV Line No. 1	P1	N-1	<1.1	<1.1	<1.1	1.069	1.1029				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-5	CACHSTAP 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0791	1.1089				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-6	CLRKSVLE 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0791	1.1148				Explore potential mitigation
CYVL-V-7	CLRKSVLT 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0791	1.1202				Explore potential mitigation
CYVL-V-8	CORDELIA 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	<1.1	1.1092				Explore potential mitigation
CYVL-V-9	CPM 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0791	1.1202				Explore potential mitigation
CYVL-V-10	CPM TAP 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.077	1.1202				Explore potential mitigation
CYVL-V-11	DEL MAR 60 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.069	1.114				Explore potential mitigation
CYVL-V-12	DIMOND_1 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0763	1.1196				Explore potential mitigation
CYVL-V-13	DIMOND_2 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.077	1.1176				Explore potential mitigation
CYVL-V-14	DIXONCAN 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0749	1.1049				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-15	DIXON-J2 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0759	1.1062				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-16	DIXONPGE 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0759	1.1062				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-17	DMND SPR 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0798	1.1176				Explore potential mitigation
CYVL-V-18	ELDORAD 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0796	1.1169				Explore potential mitigation
CYVL-V-19	FLINT 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0824	1.1027				Explore potential mitigation
CYVL-V-20	GOLDHILL 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0796	1.1204				Explore potential mitigation
CYVL-V-21	HALE 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0765	1.1069				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-22	HORSESHE 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0765	1.1124				Explore potential mitigation
CYVL-V-23	HORSHE1 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0738	1.1124				Explore potential mitigation
CYVL-V-24	HORSHE2 115 kV	P1-4:A3:2:_RIO OSO 230.00 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0752	1.1129				Explore potential mitigation
CYVL-V-25	JAMESN-A 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0718	1.1013				Explore potential mitigation
CYVL-V-26	JAMESON 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0737	1.1053				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-27	JMSN JCT 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0747	1.1059				Explore potential mitigation
CYVL-V-28	LOCKFORD 230 kV	P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P1	N-1	0.8484	>0.9	>0.9	>0.9	1.0469				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-29	MADISON 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0786	1.11				Explore potential mitigation
CYVL-V-30	MAINE-PR 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0791	1.1089				Explore potential mitigation

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-31	PLAINFLD 60 kV	P1-3:A4:7:_Vaca Dixon 230/115 kV Transformer No. 3	P1	N-1	0.8603	0.863	>0.9	1.0268	1.0842				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-32	SCHMLBCH 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	>0.9	>0.9	>0.9	1.0718	1.1012				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-33	SUISUN 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	>0.9	>0.9	>0.9	1.0716	1.1014				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-34	TABLE MT 500 kV	P1-4:A4:7:_VC DX12T 13.80 SVD ID v	P1	N-1	>0.9	>0.9	>0.9	1.0825	1.1037				Explore potential mitigation
CYVL-V-35	TRAVISJT 60 kV	P1-2:A4:51:_Dixon - Vaca 60 kV Line No. 1	P1	N-1	>0.9	>0.9	>0.9	1.0706	1.1036				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-36	VACA-DIX 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0835	1.1122				Explore potential mitigation
CYVL-V-37	VACA-DXN 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0831	1.1123				Explore potential mitigation
CYVL-V-38	VACA-JT2 60 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0802	1.1099				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-39	WEC 115 kV	P1-4:A4:6:_VC DX11T 13.80 SVD ID v	P1	N-1	<1.1	<1.1	<1.1	1.0731	1.1028				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-40	WESTLEY 60 kV	P1-3:A11:19:_Manteca 115/60 kV Transformer No. 3	P1	N-1	0.8641	0.8826	0.8764	0.99	0.9558				Explore potential mitigation
CYVL-V-41	WILKINS 60 kV	P1-2:A4:42:_Cortina 60 kV Line No. 1	P1	N-1	0.8942	0.8978	0.8883	>0.9	>0.9				Sacramento Action Plan
CYVL-V-42	AEC_300 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7059	0.261				Explore potential mitigation
CYVL-V-43	APPLE HL 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0642	0.304	0.3064	>0.9	>0.9				Sierra Action Plan
CYVL-V-44	ARBALT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	>0.9	>0.9	0.8943	>0.9	>0.9				Sacramento Action Plan
CYVL-V-45	ARBUCKLE 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	>0.9	0.8833	0.8553	>0.9	>0.9				Sacramento Action Plan
CYVL-V-46	ATLANTC 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8891	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line & Rio Oso Voltage Support
CYVL-V-47	ATLANTC 230 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	>0.9	0.8643	0.8702	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line & Rio Oso Voltage Support
CYVL-V-48	ATLANTI 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	>0.9	0.8743	0.8798	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line & Rio Oso Voltage Support
CYVL-V-49	ATLANTIC 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	>0.9	0.8522	0.8573	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line & Rio Oso Voltage Support
CYVL-V-50	AUBURN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1941	0.589	0.5903	>0.9	>0.9				Sierra Action Plan
CYVL-V-51	AVENA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7815	0.8406	0.8342	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-52	AVENA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7578	0.361				Explore potential mitigation



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-53	BANTA 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7794	0.2885				Explore potential mitigation
CYVL-V-54	BEARDSLY 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7114	0.7608	0.7598	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-55	BEARDSLY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8966	0.6184				Explore potential mitigation
CYVL-V-56	BELL PGE 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.2296	0.5729	0.5745	>0.9	>0.9				Sierra Action Plan
CYVL-V-57	BELLOTA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2795	0.2926	0.2922	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-58	BLLTAJCT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2692	0.2809	0.2796	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-59	BNTA CRB 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8773	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-60	BNTA CRB 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7585	0.245				Explore potential mitigation
CYVL-V-61	BNTA JCT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7795	0.2885				Explore potential mitigation
CYVL-V-62	BONNIE N 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7495	0.8865	0.8915	>0.9	>0.9				Sierra Action Plan
CYVL-V-63	BOWMN PH 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.8259	0.9534	0.9584	>0.9	>0.9				Sierra Action Plan
CYVL-V-64	BOWMN TP 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.805	0.9351	0.9405	>0.9	>0.9				Sierra Action Plan
CYVL-V-65	BRDSLY J 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7101	0.7595	0.7585	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-66	BRDSLY J 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8966	0.6184				Explore potential mitigation
CYVL-V-67	BRIGHTON 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8964	>0.9	>0.9	>0.9	>0.9				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-68	BRIGHTON 230 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8819	>0.9	>0.9	>0.9	>0.9				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-69	BRIGHTON 230 kV	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.8928	>0.9	>0.9	>0.9	>0.9				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project

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High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-70	BRKR SLG 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.7769	>0.9	>0.9	>0.9	>0.9				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-71	BRUNSWCK 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7922	>0.9	>0.9	>0.9	>0.9				Sierra Action Plan
CYVL-V-72	BRWNS VY 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	>0.9	>0.9	>0.9	>0.9	0.858				Sierra Action Plan
CYVL-V-73	CALVO 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7799	0.2875				Explore potential mitigation
CYVL-V-74	CAMANCHE 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2737	0.2858	0.2843	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-75	CAMPUS 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.7755	0.9153	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-76	CAPEHORN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.743	0.8818	0.8862	0.995	1.0129				Sierra Action Plan
CYVL-V-77	CARBONA 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7729	0.2847				Explore potential mitigation
CYVL-V-78	CATARACT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6896	0.7414	0.7379	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-79	CATARACT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8525	0.5349				Explore potential mitigation
CYVL-V-80	CDCRSTN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2366	0.2461	0.246	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-81	CDCRSTNJT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2391	0.2487	0.2484	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-82	CH.STN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6083	0.6548	0.6534	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-83	CH.STN 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8966	0.63				Explore potential mitigation
CYVL-V-84	CH.STNJT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6055	0.6522	0.6507	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-85	CHCGO PK 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.5733	0.7871	0.79	>0.9	>0.9				Sierra Action Plan
CYVL-V-86	CISCO GR 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.8078	>0.9	>0.9	>0.9	>0.9				Sierra Action Plan
CYVL-V-87	CL AMMNA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8699	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-88	CL AMMNA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7141	0.2684				Explore potential mitigation
CYVL-V-89	CLNY JCT 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8938	>0.9	>0.9	>0.9	>0.9				Explore potential mitigation

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-90	CLRKSVLT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1018	0.3386	0.341	>0.9	>0.9				Sierra Action Plan
CYVL-V-91	CLSA CRS 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8659	0.843	0.8144	>0.9	>0.9				Sacramento Action Plan
CYVL-V-92	CMNCHETP 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2702	0.2821	0.2808	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-93	CMP FRWT 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus	>0.9	>0.9	>0.9	>0.9	0.8625				Sierra Action Plan
CYVL-V-94	COLFAXJT 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7438	0.8825	0.8868	>0.9	>0.9				Sierra Action Plan
CYVL-V-95	COLUSA 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.862	0.839	0.8101	>0.9	>0.9				Sacramento Action Plan
CYVL-V-96	CORTINA 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8785	0.862	0.8424	>0.9	>0.9				Sacramento Action Plan
CYVL-V-97	CORTINA 230 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.7692	0.7546	0.7373	0.8722	0.8468				Sacramento Action Plan
CYVL-V-98	CPC STCN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2336	0.2427	0.2424	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-99	CPEHRNTP 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7437	0.8824	0.8868	>0.9	>0.9				Sierra Action Plan
CYVL-V-100	CPM 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1038	0.3403	0.3427	>0.9	>0.9				Sierra Action Plan
CYVL-V-101	CPM TAP 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1038	0.3403	0.3427	>0.9	>0.9				Sierra Action Plan
CYVL-V-102	CRBNA JC 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7791	0.2871				Explore potential mitigation
CYVL-V-103	CROSRDJT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.87	0.9364	0.9288	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-104	CROSRDJT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7142	0.2685				Explore potential mitigation
CYVL-V-105	CRWS LDJ 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7867	0.2416				Explore potential mitigation
CYVL-V-106	CURTISS 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6202	0.6699	0.6685	1.0351	1.03				Action Plan. Long term mitigation SPS
CYVL-V-107	CURTISS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8954	0.6191				Explore potential mitigation
CYVL-V-108	DEEPWATR 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.7758	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-109	DEL MAR 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.9085	0.856	0.8613	>0.9	>0.9				Sierra Action Plan
CYVL-V-110	DELEVAN 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8852	0.8633	0.8358	>0.9	>0.9				Sacramento Action Plan
CYVL-V-111	DIMOND_1 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0853	0.3256	0.328	1.036	1.0218				Sierra Action Plan
CYVL-V-112	DIMOND_2 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0771	0.289	0.2912	>0.9	>0.9				Sierra Action Plan

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-113	DIST2047 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Bus-tie breaker	0.9059	0.8854	0.8602	>0.9	>0.9				Sacramento Action Plan
CYVL-V-114	DMND SPR 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.077	0.2886	0.2908	1.0317	1.02				Sierra Action Plan
CYVL-V-115	DONNELLS 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7294	0.7781	0.7772	1.0367	1.0309				Action Plan. Long term mitigation SPS
CYVL-V-116	DPWTR_TP 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.7795	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-117	DRAKE 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8959	0.8717	0.8434	>0.9	>0.9				Sacramento Action Plan
CYVL-V-118	DRUM 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.754	0.8897	0.895	>0.9	>0.9				Sierra Action Plan
CYVL-V-119	DRUM 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7566	>0.9	>0.9	>0.9	>0.9				Sierra Action Plan
CYVL-V-120	DTCH FL1 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.6662	0.8437	0.8468	>0.9	>0.9				Sierra Action Plan
CYVL-V-121	DTCH FL2 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7816	>0.9	>0.9	>0.9	>0.9				Sierra Action Plan
CYVL-V-122	DUNNIGAN 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8786	0.8535	0.8249	>0.9	>0.9				Sacramento Action Plan
CYVL-V-123	E.NICOLS 115 kV	P2-3:A5:16:_NON-BUS-TIE BREAKER CB1112 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	>0.9	0.915	0.8766	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-124	EIGHT MI 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8461	0.9746	0.9741	>0.9	>0.9				Explore potential mitigation
CYVL-V-125	ELDORAD 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0587	0.3034	0.306	>0.9	>0.9				Sierra Action Plan
CYVL-V-126	ELLS GTY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7053	0.2634				Explore potential mitigation
CYVL-V-127	ENCINAL 60 kV	P2-2:A5:21_BUS FAULT AT 32332 PEASE 60.00	P2	Bus	0.8952	>0.9	0.8972	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-128	ENVRO_HY 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.738	0.8779	0.8816	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Atlantic-Placer 115 kV Line and serve Forest Hill from Placer
CYVL-V-129	FBERBORD 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.621	0.6708	0.6693	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-130	FBERBORD 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8954	0.619				Explore potential mitigation
CYVL-V-131	FLINT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1902	0.5379	0.5393	>0.9	>0.9				Sierra Action Plan
CYVL-V-132	FORST HL 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7283	0.8696	0.8733	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Atlantic-Placer 115 kV Line and serve Forest Hill from Placer
CYVL-V-133	FROGTOWN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6643	0.7153	0.7122	1.0341	1.0366				Action Plan. Long term mitigation SPS

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-134	GOLD HLL 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1184	0.3656	0.368	>0.9	>0.9				Sierra Action Plan
CYVL-V-135	GOLDHILL 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1133	0.3483	0.3506	>0.9	>0.9				Sierra Action Plan
CYVL-V-136	GRANITE 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.761	0.2251				Explore potential mitigation
CYVL-V-137	GRONMYER 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7825	0.2871				Explore potential mitigation
CYVL-V-138	GUSTINE 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8027	0.2375				Explore potential mitigation
CYVL-V-139	GUSTN JT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7973	0.2421				Explore potential mitigation
CYVL-V-140	GWFTRACY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7063	0.2617				Explore potential mitigation
CYVL-V-141	HALSEY 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.2044	0.5886	0.5893	>0.9	1.0234				Sierra Action Plan
CYVL-V-142	HARINTON 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8994	0.8753	0.8471	>0.9	>0.9				Sacramento Action Plan
CYVL-V-143	HIGGINS 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.3332	0.6332	0.6353	>0.9	>0.9				Sierra Action Plan
CYVL-V-144	HJ HEINZ 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7066	0.2639				Explore potential mitigation
CYVL-V-145	HNYLNJCT 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8687	>0.9	>0.9	>0.9	>0.9				Action Plan
CYVL-V-146	HORSESHE 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.137	0.407	0.4098	>0.9	>0.9				Sierra Action Plan
CYVL-V-147	INDIN VL 115 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.9114	0.8959	0.8758	>0.9	>0.9				Explore potential mitigation
CYVL-V-148	INDSTR J 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8916	>0.9	>0.9	>0.9	>0.9				Action Plan
CYVL-V-149	INDUSTR L 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8876	>0.9	>0.9	>0.9	>0.9				Action Plan
CYVL-V-150	INGRM C. 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7445	0.2605				Explore potential mitigation
CYVL-V-151	KASSON 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7796	0.2886				Explore potential mitigation
CYVL-V-152	KASSON 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8868	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-153	KASSON 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.711	0.2672				Explore potential mitigation
CYVL-V-154	KNIGHT1 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.8648	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-155	KNIGHT2 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.8632	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-156	KNIGHTLD 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.8648	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-157	KSSN-JC1 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8869	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-158	KSSN-JC1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7112	0.2675				Sierra Action Plan
CYVL-V-159	KSSN-JC2 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8836	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-160	KSSN-JC2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7115	0.2672				Explore potential mitigation
CYVL-V-161	KYOHOTAP 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2649	0.2768	0.2767	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-162	LAMMERS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7062	0.2615				Explore potential mitigation
CYVL-V-163	LCKFRDJA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2486	0.2591	0.2588	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-164	LCKFRDJB 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2675	0.2796	0.2794	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-165	LEE_JCT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7789	0.2808				Explore potential mitigation
CYVL-V-166	LEPRINO 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7062	0.2637				Explore potential mitigation
CYVL-V-167	LID 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7812	0.287				Explore potential mitigation
CYVL-V-168	LIMESTNE 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1095	0.343	0.3452	>0.9	>0.9				Explore potential mitigation
CYVL-V-169	LIVE OAK 60 kV	P2-2:A5:21_BUS FAULT AT 32332 PEASE 60.00	P2	Bus	0.8957	0.905	0.8977	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-170	LOCKFORD 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.267	0.2784	0.2771	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-171	LOCKFORD 230 kV	P2-4:A11:17:_30500 Bellota 230 kV Bus CB822 Internal Breaker Fault (2D and 2E)	P2	Bus-tie breaker	0.8472	0.9884	0.9869	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-172	LOCKFORD 230 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8309	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-173	LODI 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8885	>0.9	>0.9	>0.9	>0.9				Action Plan
CYVL-V-174	LODI 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8478	>0.9	>0.9	>0.9	>0.9				Explore potential mitigation
CYVL-V-175	LOUISE 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7819	0.287				Explore potential mitigation
CYVL-V-176	LOUISJCT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.783	0.2885				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-177	LTHRP JT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7843	0.2908				Explore potential mitigation
CYVL-V-178	LYOTH-SP 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7791	0.2871				Explore potential mitigation
CYVL-V-179	MANTECA 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7843	0.2908				Explore potential mitigation
CYVL-V-180	MANTECA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7204	0.2842				Explore potential mitigation
CYVL-V-181	MAXTAP 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8852	0.8632	0.8358	0.9847	0.993				Sacramento Action Plan
CYVL-V-182	MAXWELL 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.885	0.863	0.8356	0.9846	0.993				Action Plan
CYVL-V-183	MCLANE 60 kV	P2-4:A11:4:_30482 Lockeford 230 kV Bus CB272 Internal Breaker Fault	P2	Bus-tie breaker	0.8998	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-184	MDDLE FK 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8816	>0.9	>0.9	>0.9	>0.9				Sierra Action Plan
CYVL-V-185	MDDLFK M 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8813	>0.9	>0.9	>0.9	>0.9				Sierra Action Plan
CYVL-V-186	MDSTO CN 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7631	0.2297				Explore potential mitigation
CYVL-V-187	MEDLIN J 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8012	0.2416				Explore potential mitigation
CYVL-V-188	MELNS JA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6501	0.6995	0.6967	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-189	MELNS JA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8577	0.5558				Explore potential mitigation
CYVL-V-190	MELNS JB 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6496	0.6991	0.696	1.0336	1.037				Action Plan. Long term mitigation SPS
CYVL-V-191	MELNS JB 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8563	0.5554				Explore potential mitigation
CYVL-V-192	MELONES 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.5981	0.6429	0.6416	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-193	MELONES 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8912	0.6248				Explore potential mitigation
CYVL-V-194	MERIDIAN 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	>0.9	0.898	0.8677	>0.9	>0.9				Sacramento Action Plan
CYVL-V-195	MERIDJCT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	>0.9	>0.9	0.8728	>0.9	>0.9				Sacramento Action Plan
CYVL-V-196	MIDDLTWN 115 kV	P2-3:A4:20:_NON-BUS-TIE BREAKER CB532 FAILURE AT CORTINA 115kV	P2	Non Bus-tie breaker	>0.9	0.8827	0.8837	>0.9	>0.9				Explore potential mitigation
CYVL-V-197	MILER TP 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7635	0.2342				Explore potential mitigation
CYVL-V-198	MILLER 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7633	0.2339				Explore potential mitigation

Study Area: PG&E Central Valley Sacramento

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-199	MI-WUK 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6537	0.7043	0.7029	>0.9	>0.9				Explore potential mitigation
CYVL-V-200	MI-WUK 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8959	0.618				Explore potential mitigation
CYVL-V-201	MIZOU_T1 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0813	0.3224	0.3248	>0.9	>0.9				Sierra Action Plan
CYVL-V-202	MIZOU_T2 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0756	0.2892	0.2914	>0.9	>0.9				Sierra Action Plan
CYVL-V-203	MNTCA JT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7613	0.2497				Explore potential mitigation
CYVL-V-204	MOBILCHE 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus-tie breaker	0.8242	0.9494	1.0124	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-205	MONDAVI 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8875	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-206	MONDAVI 60 kV	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	0.8901	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-207	MORADAJT 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.2323	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-208	MSHR 60V 60 kV	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	0.3888	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-209	MSSDLESW 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7814	0.287				Explore potential mitigation
CYVL-V-210	MTN_QUAR 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1904	0.5821	0.5836	>0.9	>0.9				Sierra Action Plan
CYVL-V-211	NEW HOPE 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8754	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-212	NEWCSTLE 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1675	0.4947	0.4973	>0.9	>0.9				Sierra Action Plan
CYVL-V-213	NEWMAN 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7974	0.2421				Explore potential mitigation
CYVL-V-214	NRRWS1TP 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus-tie breaker	>0.9	>0.9	>0.9	>0.9	0.8618				Sierra Action Plan
CYVL-V-215	NRRWS2TP 60 kV	P2-2:A5:17_BUS FAULT AT 32308 COLGATE 60.00	P2	Bus-tie breaker	>0.9	>0.9	>0.9	>0.9	0.8618				Sierra Action Plan
CYVL-V-216	NW HPE J 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8879	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-217	NWMN JCT 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7994	0.241				Explore potential mitigation
CYVL-V-218	OI GLASS 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7059	0.2606				Explore potential mitigation
CYVL-V-219	OLETA 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0864	0.2833	0.2848	>0.9	>0.9				Action Plan
CYVL-V-220	OWENSTP1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7063	0.2615				Explore potential mitigation
CYVL-V-221	OWENSTP2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7066	0.262				Explore potential mitigation
CYVL-V-222	OXBOW 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7404	0.88	0.8836	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Atlantic-Placer 115 kV Line and serve Forest Hill from Placer

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-223	PATTERSN 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7829	0.2419				Explore potential mitigation
CYVL-V-224	PEAS RG 60 kV	P2-4:A5:1_RIO OSO 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.8964	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-225	PENRYN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1702	0.5611	0.5625	>0.9	>0.9				Sierra Action Plan
CYVL-V-226	PEORIA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6036	0.65	0.6485	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-227	PEORIA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8945	0.6262				Explore potential mitigation
CYVL-V-228	PLACER 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1936	0.5929	0.5944	>0.9	>0.9				Explore potential mitigation
CYVL-V-229	PLACER 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.1974	0.5574	0.5589	>0.9	>0.9				Explore potential mitigation
CYVL-V-230	PLAINFLD 60 kV	P2-2:A11:63:_33551 GWF Tracy 115 kV Bus	P2	Bus-tie breaker	0.8754	0.8783	>0.9	>0.9	>0.9				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-231	PLCRVLB2 115 kV	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus-tie breaker	0.7114	0.8206	0.8331	>0.9	>0.9				Sierra Action Plan
CYVL-V-232	PLCRVLB3 115 kV	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus-tie breaker	0.7113	0.8205	0.833	>0.9	>0.9				Sierra Action Plan
CYVL-V-233	PLCRVLT1 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0772	0.3193	0.3217	>0.9	>0.9				Sierra Action Plan
CYVL-V-234	PLCRVLT2 115 kV	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus-tie breaker	0.7117	0.8208	0.8333	>0.9	>0.9				Sierra Action Plan
CYVL-V-235	PLSNT GR 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.9262	0.866	0.8712	>0.9	>0.9				Sierra Action Plan
CYVL-V-236	POST 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus-tie breaker	0.7794	0.9235	1.0109	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-237	Q539 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8013	0.2416				Explore potential mitigation
CYVL-V-238	Q539SS 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8013	0.2416				Sierra Action Plan
CYVL-V-239	R.TRACK 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.595	0.6402	0.6388	>0.9	>0.9				Sierra Action Plan
CYVL-V-240	RIPON 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7847	0.8451	0.8372	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-241	RIVRBKJT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7249	0.7818	0.7755	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-242	ROLLINS 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.752	0.8896	0.8937	>0.9	>0.9				Sierra Action Plan
CYVL-V-243	ROLLNSTP 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7489	0.887	0.8912	>0.9	>0.9				Sierra Action Plan

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-244	RPN JCN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8105	0.8718	0.864	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-245	RPNJN2 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7643	0.8238	0.8162	1.026	1.0519				Action Plan. Long term mitigation SPS
CYVL-V-246	RVRBANK 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.306	0.3217	0.3221	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-247	SAFEWAY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7063	0.2613				Explore potential mitigation
CYVL-V-248	SALADO J 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7639	0.244				Explore potential mitigation
CYVL-V-249	SALDO TP 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7664	0.2381				Explore potential mitigation
CYVL-V-250	SANDBAR 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7059	0.7553	0.7543	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-251	SANDBAR 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8965	0.6183				Explore potential mitigation
CYVL-V-252	SCHULTE 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7063	0.2617				Explore potential mitigation
CYVL-V-253	SFWY_TP1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7063	0.2615				Explore potential mitigation
CYVL-V-254	SFWY_TP2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7063	0.2616				Explore potential mitigation
CYVL-V-255	SHADYGLN 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7439	0.8826	0.8869	>0.9	>0.9				Sierra Action Plan
CYVL-V-256	SHPRING 115 kV	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	0.688	0.801	0.8139	>0.9	>0.9				Sierra Action Plan
CYVL-V-257	SHW 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8971	>0.9	>0.9	>0.9	>0.9				Explore potential mitigation
CYVL-V-258	SHWSS 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8971	>0.9	>0.9	>0.9	>0.9				Explore potential mitigation
CYVL-V-259	SIERRAPI 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8857	0.9974	>0.9	>0.9	>0.9				Sierra Action Plan
CYVL-V-260	SNDBR JT 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7025	0.7522	0.7511	1.0365	1.0308				Action Plan. Long term mitigation SPS
CYVL-V-261	SNDBR JT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8965	0.6183				Explore potential mitigation
CYVL-V-262	SPAULDNG 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.807	0.9368	0.9423	1.0234	1.015				Sierra Action Plan
CYVL-V-263	SPICAMIN 115 kV	P2-2:A5:7_BUS FAULT AT 32018 GOLDHILL 115.00 Bus 2E	P2	Bus	0.8095	0.9011	0.9105	>0.9	>0.9				Sierra Action Plan
CYVL-V-264	SPICAMIN 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.0643	0.3043	0.3067	>0.9	>0.9				Sierra Action Plan



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-265	SPRNG GJ 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7009	0.7507	0.7496	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-266	SPRNG GJ 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8965	0.6183				Explore potential mitigation
CYVL-V-267	SPRNG GP 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7027	0.7523	0.7513	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-268	SPRNG GP 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.8965	0.6183				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-269	STAGG 230 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8374	>0.9	>0.9	>0.9	>0.9				Explore potential mitigation
CYVL-V-270	STANISLS 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.6982	0.7504	0.7468	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-271	STCKTNJB 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2592	0.2708	0.271	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-272	STKTON A 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2282	0.2368	0.2364	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-273	STKTON B 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2583	0.2699	0.2701	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-274	STN COGN 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.2337	0.2428	0.2425	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-275	STNSLSRP 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7975	0.2416				Explore potential mitigation
CYVL-V-276	SUMMIT 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.8148	0.9356	0.9449	>0.9	>0.9				Sierra Action Plan
CYVL-V-277	TAMARACK 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.8098	0.9345	0.943	>0.9	>0.9				Sierra Action Plan
CYVL-V-278	TAYLOR 60 kV	P2-2:A11:41:_30624 Tesla 230 kV Bus CB202 Internal Breaker Fault (1E and 2E)	P2	Bus	0.8995	1.0094	1.0137	>0.9	>0.9				Sierra Action Plan
CYVL-V-279	TCHRTJCT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7618	0.2268				Explore potential mitigation
CYVL-V-280	TEICHERT 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7608	0.2247				Explore potential mitigation
CYVL-V-281	TESLAMTR 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	>0.9	0.2667				Explore potential mitigation
CYVL-V-282	TH.E.DV. 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	>0.9	0.2559				Explore potential mitigation
CYVL-V-283	TRACY 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.898	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-284	TRACY 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7063	0.2637				Explore potential mitigation

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-285	TULLOCH 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.5038	0.5387	0.5388	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-286	TULLOCH 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.9328	0.731				Explore potential mitigation
CYVL-V-287	UCD_TP2 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.7769	0.9165	1.0061	>0.9	>0.9				Explore potential mitigation
CYVL-V-288	UCDAVSJ1 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.777	0.9165	1.0061	>0.9	>0.9				Explore potential mitigation
CYVL-V-289	ULTRA JT 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.9282	0.877	0.8822	>0.9	>0.9				Sierra Action Plan
CYVL-V-290	ULTR-RCK 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.931	0.8799	0.8852	>0.9	>0.9				Sierra Action Plan
CYVL-V-291	VALLY HM 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7333	0.791	0.7844	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-292	VALLY HM 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7755	0.4058				Explore potential mitigation
CYVL-V-293	VIERATP1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	>0.9	0.2677				Explore potential mitigation
CYVL-V-294	VIERATP2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	>0.9	0.268				Explore potential mitigation
CYVL-V-295	VIERRA 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8655	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-296	VIERRA 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7151	0.2689				Explore potential mitigation
CYVL-V-297	VLYHMT P1 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.7335	0.7911	0.7845	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-298	VLYHMT P1 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7755	0.4058				Explore potential mitigation
CYVL-V-299	VLYHMT P2 115 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8005	0.8601	0.8537	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-300	VLYHMT P2 115 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7614	0.3604				Explore potential mitigation
CYVL-V-301	W.SCRMNO 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.7799	>0.9	>0.9	>0.9	>0.9				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-302	WATRLJCT 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.5992	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-303	WATRLJCT 60 kV	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	0.6087	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-304	WDLND_BM 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.8148	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-305	WEMR SWS 60 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	0.7384	0.8782	0.8825	>0.9	>0.9				Sierra Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-306	WESCOT1 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.9387	0.9167	0.8889	>0.9	>0.9				Sacramento Action Plan
CYVL-V-307	WESTLEY 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8248	0.8983	0.8932	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-308	WESTLEY 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7324	0.2063				Explore potential mitigation
CYVL-V-309	WHEATLND 60 kV	P2-3:A5:16:_NON-BUS-TIE BREAKER CB1112 FAILURE AT EAST NICOLAUS 115 kV	P2	Bus-tie breaker	0.9175	0.8986	0.8973	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Pease - Marysville 60 kV Line
CYVL-V-310	WHEATLND 60 kV	P2-3:A5:17:_NON-BUS-TIE BREAKER CB1122 FAILURE AT EAST NICOLAUS 115 kV	P2	Non Bus-tie breaker	0.9173	0.8985	0.8907	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Pease - Marysville 60 kV Line
CYVL-V-311	WILKINS 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	>0.9	0.8851	0.8598	>0.9	>0.9				Sacramento Action Plan
CYVL-V-312	WILL JCT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	>0.9	>0.9	0.879	>0.9	>0.9				Sacramento Action Plan
CYVL-V-313	WILSONAV 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.8621	0.8391	0.8103	>0.9	>0.9				Sacramento Action Plan
CYVL-V-314	WINERY J 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8883	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-315	WINERY J 60 kV	P2-4:A11:76:_33704 Stagg 60 kV Bus CB2 Internal Breaker Failure	P2	Bus-tie breaker	0.891	>0.9	>0.9	>0.9	>0.9				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-316	WLKSLJCT 60 kV	P2-3:A4:22:_NON-BUS-TIE BREAKER CB312 FAILURE AT CORTINA 230kV	P2	Non Bus-tie breaker	0.9083	0.8879	0.8627	>0.9	>0.9				Sacramento Action Plan
CYVL-V-317	WODBRG J 60 kV	P2-4:A11:11:_30496 Stagg 230 kV Bus CB252 Internal Breaker Fault	P2	Bus-tie breaker	0.8936	1.0438	1.0477	1.0164	1.0401				Action Plan. Long term mitigation Stagg-Hammer 60 kV Line
CYVL-V-318	WOODLD 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.8211	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-319	WSID 60 kV	P2-4:A11:18:_30500 Bellota 230 kV Bus CB400 Internal Breaker Fault (1D and 2D)	P2	Bus-tie breaker	0.8251	0.8986	0.8935	>0.9	>0.9				Action Plan. Long term mitigation SPS
CYVL-V-320	WSID 60 kV	P2-4:A11:50:_33514 Manteca 115 kV Bus CB124 Internal Breaker Fault	P2	Bus-tie breaker	0.8607	0.8879	0.8823	>0.9	>0.9				Action Plan
CYVL-V-321	WSID 60 kV	P2-4:A11:60:_33540 Tesla 115 kV Bus CB102 Internal Breaker Fault	P2	Bus-tie breaker	>0.9	>0.9	>0.9	0.7324	0.2064				Explore potential mitigation
CYVL-V-322	ZAMORA 115 kV	P2-2:A4:8_BUS FAULT AT 31984 BRIGHTN 115.00	P2	Bus	0.8538	>0.9	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-323	APLHTAP2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7983	0.8608	0.869	>0.9	>0.9				Sacramento Action Plan
CYVL-V-324	APPLE HL 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.8603	>0.9	>0.9	>0.9	>0.9				Sacramento Action Plan
CYVL-V-325	ARBALT 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	0.8727	0.8755	0.8783	>0.9	>0.9				Sacramento Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-326	ARBJCT 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	0.879	0.882	0.885	>0.9	>0.9				Sacramento Action Plan
CYVL-V-327	ARBUCKLE 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	0.8722	0.8749	0.8776	>0.9	>0.9				Sacramento Action Plan
CYVL-V-328	DIMOND_2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7641	0.8299	0.8388	>0.9	>0.9				Sacramento Action Plan
CYVL-V-329	DIST2047 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	0.8444	0.8444	0.8444	>0.9	>0.9				Sacramento Action Plan
CYVL-V-330	DMND SPR 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7639	0.8297	0.8386	>0.9	>0.9				Sacramento Action Plan
CYVL-V-331	DRAKE 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	0.8606	0.8633	0.866	>0.9	>0.9				Sacramento Action Plan
CYVL-V-332	DUNNIGAN 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	0.8426	0.8452	0.8776	0.9873	0.9938				Sacramento Action Plan
CYVL-V-333	ENCL TAP 60 kV	P2-1:A5:97:_ENCL TAP-PEASE #1 60 kV	P2-1	Line section w/o fault	0.8955	>0.9	0.8977	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-334	LIVE OAK 60 kV	P2-1:A5:97:_ENCL TAP-PEASE #1 60 kV	P2-1	Line section w/o fault	0.8956	>0.9	0.8978	>0.9	1.0355				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-335	MIZOU_T2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7688	0.8341	0.8429	>0.9	>0.9				Sacramento Action Plan
CYVL-V-336	PLAINFLD 60 kV	P2-1:A4:60:_WEC-SUISUN #1 115 kV	P2-1	Line section w/o fault	0.8723	0.8773	>0.9	>0.9	>0.9				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-337	PLCRVLB3 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7732	0.838	0.8468	>0.9	>0.9				Sacramento Action Plan
CYVL-V-338	PLCRVLT2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7735	0.8383	0.8471	>0.9	>0.9				Sacramento Action Plan
CYVL-V-339	PLFLDJCT 60 kV	P2-1:A4:60:_WEC-SUISUN #1 115 kV	P2-1	Line section w/o fault	0.885	0.8901	>0.9	>0.9	>0.9				Explore potential mitigation
CYVL-V-340	SHPRING 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7523	0.8192	0.8281	>0.9	>0.9				Sacramento Action Plan
CYVL-V-341	SHPRING2 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.7527	0.8196	0.8285	>0.9	>0.9				Sacramento Action Plan
CYVL-V-342	SPICAMIN 115 kV	P2-1:A5:18:_GOLDHILL-SHPRING2 #2 115 kV	P2-1	Line section w/o fault	0.8605	>0.9	>0.9	>0.9	>0.9				Sacramento Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-343	WILKINS 60 kV	P2-1:A4:67:_CORTINA-ARBUCKLE #1 60 kV	P2-1	Line section w/o fault	0.8441	0.8477	>0.9	>0.9	>0.9				Sacramento Action Plan
CYVL-V-344	ARBALT 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:44:_Cortina 60 kV Line No. 1	P3	G-1/N-1	>0.9	>0.9	0.8954	>0.9	>0.9				Sacramento Action Plan
CYVL-V-345	ARBUCKLE 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:44:_Cortina 60 kV Line No. 1	P3	G-1/N-1	>0.9	>0.9	0.895	>0.9	>0.9				Sacramento Action Plan
CYVL-V-346	CLSA JCT 60 kV	P1-1:A4:8:_WADHAM 9.11 Generator ID 1 and P1-2:A4:43:_Cortina No. 4 60 kV Line	P3	G-1/N-1	>0.9	>0.9	0.8966	>0.9	>0.9				Sacramento Action Plan
CYVL-V-347	COLUSA 60 kV	P1-1:A4:8:_WADHAM 9.11 Generator ID 1 and P1-2:A4:43:_Cortina No. 4 60 kV Line	P3	G-1/N-1	>0.9	>0.9	0.8897	>0.9	>0.9				Sacramento Action Plan
CYVL-V-348	DIST2047 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:42:_Cortina 60 kV Line No. 1	P3	G-1/N-1	0.8818	0.8866	>0.9	>0.9	>0.9				Sacramento Action Plan
CYVL-V-349	DIST2047 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:44:_Cortina 60 kV Line No. 1	P3	G-1/N-1	>0.9	>0.9	0.8663	>0.9	>0.9				Sacramento Action Plan
CYVL-V-350	GRSS VLY 60 kV	P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1 and P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P3	G-1/N-1	>0.9	0.8975	0.8973	>0.9	>0.9				Sierra Action Plan
CYVL-V-351	MERIDIAN 60 kV	P1-1:A4:8:_WADHAM 9.11 Generator ID 1 and P1-2:A4:43:_Cortina No. 4 60 kV Line	P3	G-1/N-1	>0.9	>0.9	0.883	>0.9	>0.9				Sacramento Action Plan
CYVL-V-352	MERIDJCT 60 kV	P1-1:A4:8:_WADHAM 9.11 Generator ID 1 and P1-2:A4:43:_Cortina No. 4 60 kV Line	P3	G-1/N-1	>0.9	>0.9	0.8881	>0.9	>0.9				Sacramento Action Plan
CYVL-V-353	PLAINFLD 60 kV	P1-1:A4:22:_WOLFSKIL 13.80 Generator ID 1 and P1-3:A4:14:_Vaca Dixon 115/60 kV Transformer No. 9	P3	G-1/N-1	0.8458	0.8498	>0.9	>0.9	>0.9				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-354	PLFLDJCT 60 kV	P1-1:A4:22:_WOLFSKIL 13.80 Generator ID 1 and P1-3:A4:14:_Vaca Dixon 115/60 kV Transformer No. 9	P3	G-1/N-1	0.8589	0.8632	>0.9	>0.9	>0.9				Explore potential mitigation
CYVL-V-355	WILKINS 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:42:_Cortina 60 kV Line No. 1	P3	G-1/N-1	0.8814	0.8862	0.8659	>0.9	>0.9				Sacramento Action Plan
CYVL-V-356	WILSONAV 60 kV	P1-1:A4:8:_WADHAM 9.11 Generator ID 1 and P1-3:A4:15:_Cortina #5 115/60 kV Transformer	P3	G-1/N-1	>0.9	>0.9	0.8972	>0.9	>0.9				Sacramento Action Plan
CYVL-V-357	WLKSLJCT 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:42:_Cortina 60 kV Line No. 1	P3	G-1/N-1	0.8843	0.889	0.8688	>0.9	>0.9				Sacramento Action Plan
CYVL-V-358	ALLEGHNY 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8349				Sierra Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-359	ALMENDRA 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8855	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-360	APLHTAP1 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3206	0.7695	>0.90	>0.90				Sierra Action Plan
CYVL-V-361	APLHTAP2 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8955	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-362	APPLE HL 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3188	0.7755	>0.90	>0.90				Sierra Action Plan
CYVL-V-363	ARBALT 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:44:_Cortina 60 kV Line No. 1	P6	N-1/N-1	>0.90	>0.90	0.8954	>0.90	>0.90				Sacramento Action Plan
CYVL-V-364	ARBUCKLE 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:44:_Cortina 60 kV Line No. 1	P6	N-1/N-1	>0.90	>0.90	0.895	>0.90	>0.90				Sacramento Action Plan
CYVL-V-365	ATLANTC 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8381	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line & Rio Oso Voltage Support
CYVL-V-366	ATLANTI 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8458	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line & Rio Oso Voltage Support
CYVL-V-367	ATLANTIC 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8462	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line & Rio Oso Voltage Support
CYVL-V-368	AUBURN 60 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.6164	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-369	AVENA 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8955	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-370	BARRY 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8459	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-371	BCKS CRK 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8398	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-372	BEALE_1 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8348				Sierra Action Plan
CYVL-V-373	BELDEN 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.843	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-374	BELL PGE 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.5957	0.8673	>0.90	>0.90				Sierra Action Plan

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-375	BIGGS 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8774	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-376	BOGUE 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8529	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-377	BONNIE N 60 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8127	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-378	BOWMN PH 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8639	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-379	BRIGHTN 115 kV	P1-2:A5:9:_Rio Oso - Brighton 230 kV Line and P1-2:A4:10:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	0.2987	0.8945	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-380	BRIGHTON 230 kV	P1-2:A5:9:_Rio Oso - Brighton 230 kV Line and P1-2:A4:10:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	0.26	0.7788	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-381	BRKR SLG 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.3079	0.8921	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-382	BRKR TP 115 kV	P1-2:A5:9:_Rio Oso - Brighton 230 kV Line and P1-2:4:3:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	0.315	0.8974	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-383	BRKRJCT 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.3091	0.8924	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-384	BRNSWALT 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8564	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-385	BRUNSWCK 115 kV	P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9 and P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10	P6	N-1/N-1	0.8584	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-386	BRUNSWCK 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8996	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-387	BRWNS VY 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8351				Sierra Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-388	CAMPUS 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.3136	0.8904	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-389	CAPEHORN 60 kV	P1-2:A4:10:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8985	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-390	CAPEHORN 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.7824	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-391	CATLETT 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8579	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-392	CHALLENGE 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer and P1-2:A5:66:_Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8617				Sierra Action Plan
CYVL-V-393	CHCGO PK 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.7787	0.9634	>0.90	>0.90				Sierra Action Plan
CYVL-V-394	CHLLNGEA 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer and P1-2:A5:66:_Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8634				Sierra Action Plan
CYVL-V-395	CISCO GR 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8753	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-396	CL AMMNA 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8885	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-397	CLMBA HL 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer and P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate)	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8383				Sierra Action Plan
CYVL-V-398	CLNY JCT 60 kV	P1-3:A11:9:_Stagg 230/60 kV Transformer No. 4 and P1-3:A11:8:_Stagg 230/60 kV Transformer No. 1	P6	N-1/N-1	0.892	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-399	CLRKSVLE 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3312	0.7668	>0.90	>0.90				Sierra Action Plan
CYVL-V-400	CLSA CRS 60 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.8594	0.8511	0.8193	>0.90	>0.90				Sacramento Action Plan
CYVL-V-401	CMP FRWT 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8396				Sierra Action Plan
CYVL-V-402	CNTRY CB 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.148	>0.90	>0.90	0.8282	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-403	COLFAXJT 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8991	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-404	COLFAXJT 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.7823	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-405	COLGATE 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.839				Sierra Action Plan
CYVL-V-406	COLGATE 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.889	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-407	COLONY 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.8839	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-408	COLUSA 60 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.8555	0.8471	0.815	>0.90	>0.90				Sacramento Action Plan
CYVL-V-409	CORTINA 115 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.8734	0.8684	0.8461	>0.90	>0.90				Sacramento Action Plan
CYVL-V-410	CORTINA 230 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.7647	0.7603	0.7406	>0.90	>0.90				Sacramento Action Plan
CYVL-V-411	CPEHRNTP 60 kV	P1-2:A4:10:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.899	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-412	CPM 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3564	0.7834	>0.90	>0.90				Sierra Action Plan
CYVL-V-413	CRESTA 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8397	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-414	CROSRDJT 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8885	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-415	CRTNA M 230 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.8412	0.836	0.8137	>0.90	>0.90				Action Plan
CYVL-V-416	CRWS LDG 60 kV	P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3 and P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1	P6	N-1/N-1	0.8836	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-417	DAVIS 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.3157	0.8916	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-418	DEEPWATR 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.2913	0.8905	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-419	DEL MAR 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.827	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-420	DELEVAN 60 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.8789	0.8712	0.8406	>0.90	>0.90				Sacramento Action Plan
CYVL-V-421	DIMOND_1 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.341	0.786	>0.90	>0.90				Sierra Action Plan
CYVL-V-422	DIMOND_2 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3028	0.7622	>0.90	>0.90				Sierra Action Plan
CYVL-V-423	DIST1001 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8722	>0.90	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan
CYVL-V-424	DIST1500 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8681	>0.90	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan
CYVL-V-425	DIST2047 60 kV	P1-1:A11:1:_0227-WD 230.00 Generator ID FW and P1-2:A4:42:_Cortina 60 kV Line No. 1	P6	N-1/N-1	0.8818	0.8866	0.8663	>0.90	>0.90				Sacramento Action Plan
CYVL-V-426	DMND SPR 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8896	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-427	DOBBINS 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8378				Sierra Action Plan
CYVL-V-428	DPWT_TP2 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.2962	0.8934	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-429	DPWTR_TP 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.2995	0.8941	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-430	DRAKE 60 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.8896	0.8795	>0.90	>0.90	>0.90				Sacramento Action Plan
CYVL-V-431	DRAKE 60 kV	P1-2:A4:17:_Cortina - Vaca 230 kV Line and P1-2:A3:9:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	>0.90	>0.90	0.8481	>0.90	>0.90				Sacramento Action Plan
CYVL-V-432	DRUM 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8284	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-433	DRUM 1M 115 kV	P1-2:A5:9:_Rio Oso - Brighton 230 kV Line and P1-2:A4:10:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	0.897	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-434	DRUM 1M 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.81	>0.90	>0.90	>0.90				Explore potential mitigation

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-435	DRUM 2M 115 kV	P1-2:A5:9:_Rio Oso - Brighton 230 kV Line and P1-2:A4:10:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	0.8963	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vaca-Davis Voltage Conversion
CYVL-V-436	DRUM 2M 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.81	>0.90	>0.90	>0.90				Explore potential mitigation
CYVL-V-437	DST1001A 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8692	>0.90	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan
CYVL-V-438	DST1001B 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8722	>0.90	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan
CYVL-V-439	DTCH FL1 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8245	0.9832	>0.90	>0.90				Sierra Action Plan
CYVL-V-440	DTCH FL2 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8895	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-441	DUNNIGAN 60 kV	P1-2:A4:13:_Cortina - Vaca 230 kV Line and P1-2:A3:5:_Delevan-Cortina 230 kV Line	P6	N-1/N-1	0.8723	0.8614	0.8297	>0.90	>0.90				Sacramento Action Plan
CYVL-V-442	E.MRYSVE 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8356	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: East Nicolaus Reinforcement Project
CYVL-V-443	ELDORAD 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3186	0.7691	>0.90	>0.90				Explore potential mitigation
CYVL-V-444	ELLS GTY 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8986	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-445	ENCINAL 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8647	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-446	ENVRO_HY 60 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P6	N-1/N-1	>0.90	0.8641	0.8752	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Atlantic-Placer 115 kV Line and serve Forest Hill from Placer
CYVL-V-447	FLINT 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.5618	0.8533	>0.90	>0.90				Sierra Action Plan
CYVL-V-448	FORST HL 60 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P6	N-1/N-1	>0.90	0.864	0.8751	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Atlantic-Placer 115 kV Line and serve Forest Hill from Placer
CYVL-V-449	FREC TAP 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8552	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-450	GLEAF 1 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8591	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-451	GLEAF2 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8929	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-452	GOLDHILL 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3647	0.7856	>0.90	>0.90				Sierra Action Plan
CYVL-V-453	GOLDHILL 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8674	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-454	GRAND IS 115 kV	P1-3:A4:4:_Brighton 230/115 kV Transformer No. 9 and P1-3:A4:3:_Brighton 230/115 kV Transformer No. 10	P6	N-1/N-1	0.2797	0.8771	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-455	GRANITE 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8928	>0.90	>0.90	>0.90	>0.90				Explore potential mitigation
CYVL-V-456	GRIDLEY 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8691	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vaca-Davis Voltage Conversion
CYVL-V-457	GRSS VLY 60 kV	P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1 and P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P6	N-1/N-1	>0.90	0.8975	0.8973	>0.90	>0.90				Sierra Action Plan
CYVL-V-458	GRSS VLY 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8351				Sierra Action Plan
CYVL-V-459	GRSS VLY 60 kV	P1-2:A5:51:_Colgate-Grass Valley 60 kV Line and P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1	P6	N-1/N-1	0.8872	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-460	GUSTINE 60 kV	P1-2:A12:17:_Salado-S539SS #1 60 kV Line and P1-2:A12:19:_S539SS-Newman #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	0.8861	>0.90	>0.90				
CYVL-V-461	GUSTINE 60 kV	P1-2:A12:18:_S539SS-Newman #1 60 kV Line and P1-2:A12:16:_Salado-S539SS #1 60 kV Line	P6	N-1/N-1	0.8899	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-462	GUSTN JT 60 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8759	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-463	HALSEY 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.6161	0.9237	>0.90	>0.90				Sierra Action Plan
CYVL-V-464	HAMMER 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1622	>0.90	>0.90	0.8339	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-465	HARINTON 60 kV	P1-2:A3:5:_Delevan-Cortina 230 kV Line and P1-2:A4:13:_Cortina - Vaca 230 kV Line	P6	N-1/N-1	0.8951	0.8799	0.8547	>0.90	>0.90				Sacramento Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-466	HARTER 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8666	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-467	HAYPRESS 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8639	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-468	HIGGINS 115 kV	P1-2:A5:38:_Drum - Higgins 115 kV Line and P1-2:A5:22:_Placer - Gold Hill 115 kV Line No. 1	P6	N-1/N-1	0.8719	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-469	HIGGINS 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.6482	0.8974	>0.90	>0.90				Sierra Action Plan
CYVL-V-470	HJ HEINZ 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8774	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-471	HMMR JCT 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1759	>0.90	>0.90	0.8388	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-472	HNYLNJCT 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.851	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-473	HONC JT1 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8864	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-474	HORSESHE 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.899	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-475	HORSESHE 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.4272	0.8107	>0.90	>0.90				Sierra Action Plan
CYVL-V-476	HORSHE1 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.899	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-477	HORSHE1 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.4272	0.8108	>0.90	>0.90				Sierra Action Plan
CYVL-V-478	HORSHE2 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.4401	0.8106	>0.90	>0.90				Sierra Action Plan
CYVL-V-479	INDIN VL 115 kV	P1-2:A3:9:_Delevan-Cortina 230 kV Line and P1-2:A4:17:_Cortina - Vaca 230 kV Line	P6	N-1/N-1	>0.90	>0.90	0.883	>0.90	>0.90				Explore potential mitigation
CYVL-V-480	INDUSTRL 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8854	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-481	INGRM C. 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8906	>0.90	>0.90	>0.90	>0.90				Action Plan

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-482	KASSON 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8871	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-483	KNGHTSLJ 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8684	>0.90	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan
CYVL-V-484	KNIGHT1 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.5563	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-485	KNIGHT2 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.5535	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-486	KNIGHTLD 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.5562	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-487	KNTJALT 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8724	>0.90	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan
CYVL-V-488	KSSN-JC1 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8813	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-489	KSSN-JC2 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8893	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-490	LAMMERS 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.876	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-491	LEPRINO 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.878	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-492	LIMESTNE 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.359	0.8288	>0.90	>0.90				Sierra Action Plan
CYVL-V-493	LINCLN 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.7951	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-494	LIVE OAK 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8638	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-495	LOCKEFRD 60 kV	P1-2:A11:11:_Stagg 230/21 kV Bank 6 and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.8996	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-496	LOCKFORD 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8119	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-497	LODI 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8863	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-498	LODI JCT 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8934	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-499	MANTECA 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8911	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-500	MAXTAP 60 kV	P1-2:A3:5:_Delevan-Cortina 230 kV Line and P1-2:A4:13:_Cortina - Vaca 230 kV Line	P6	N-1/N-1	0.8808	0.8678	>0.90	>0.90	>0.90				Sacramento Action Plan
CYVL-V-501	MAXTAP 60 kV	P1-2:A3:9:_Delevan-Cortina 230 kV Line and P1-2:A4:17:_Cortina - Vaca 230 kV Line	P6	N-1/N-1	>0.90	>0.90	0.8435	>0.90	>0.90				Sacramento Action Plan
CYVL-V-502	MCLANE 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8862	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-503	MDDLE FK 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8601	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-504	MDDLFK M 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8597	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-505	MERIDIAN 60 kV	P1-1:A4:8:_WADHAM 9.11 Generator ID 1 and P1-2:A4:43:_Cortina No. 4 60 kV Line	P6	N-1/N-1	>0.90	>0.90	0.883	>0.90	>0.90				Sacramento Action Plan
CYVL-V-506	METTLER 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1889	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-507	MIDLFORK 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8927	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-508	MIZOU_T1 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.338	0.778	>0.90	>0.90				Sierra Action Plan
CYVL-V-509	MIZOU_T2 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3029	0.7554	>0.90	>0.90				Sierra Action Plan
CYVL-V-510	MOBILCHE 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.4495	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-511	MONDAVI 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8853	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-512	MORADAJT 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1972	>0.90	>0.90	0.8456	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-513	MSHR 60V 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.3489	>0.90	>0.90	0.8901					Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-514	MTN_QJCT 60 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.6154	0.9228	>0.90	>0.90				Sierra Action Plan
CYVL-V-515	MTN_QUAR 60 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.6099	0.9193	>0.90	>0.90				Sierra Action Plan
CYVL-V-516	NARRWS 1 60 kV	P1-3:A5:1: Colgate #3 230/60 kV Transformer and P1-2:A5:66: Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.848				Sierra Action Plan
CYVL-V-517	NARRWS 2 60 kV	P1-3:A5:1: Colgate #3 230/60 kV Transformer and P1-2:A5:66: Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8483				Sierra Action Plan
CYVL-V-518	NEW HOPE 60 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A11:4: Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8732	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-519	NEWCSTL1 115 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.5174	0.838	>0.90	>0.90				Sierra Action Plan
CYVL-V-520	NEWCSTL2 115 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8944	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-521	NEWCSTLE 115 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.5176	0.8383	>0.90	>0.90				Sierra Action Plan
CYVL-V-522	NEWMAN 60 kV	P1-2:A12:19: S539SS-Newman #1 60 kV Line and P1-2:A12:17: Salado-S539SS #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	0.8998	>0.90	>0.90				Explore potential mitigation
CYVL-V-523	NEWMAN 60 kV	P1-3:A11:16: Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17: Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8756	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-524	NRRWS1TP 60 kV	P1-2:A5:23: Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1: Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.839				Sierra Action Plan
CYVL-V-525	NRRWS2TP 60 kV	P1-3:A5:1: Colgate #3 230/60 kV Transformer and P1-2:A5:66: Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8489				Sierra Action Plan
CYVL-V-526	NW HPE J 60 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A11:4: Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8858	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-527	NWMN JCT 60 kV	P1-3:A11:16: Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17: Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8776	>0.90	>0.90	>0.90	>0.90				Action Plan

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-528	OI GLASS 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8756	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-529	OLETA 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.2962	0.7897	>0.90	>0.90				Explore potential mitigation
CYVL-V-530	OLIVH J1 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.7846	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-531	OLIVH J3 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8768	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-532	OLIVHRST 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.7843	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-533	OWENSTP1 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8763	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-534	OWENSTP2 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8995	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-535	OXBOW 60 kV	P1-3:A5:27:_ROLLINS 60/6.6 kV GSU Transformer and P1-3:A5:28:_OXBOW 60/9.11 kV GSU Transformer	P6	N-1/N-1	0.8615	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Atlantic-Placer 115 kV Line and serve Forest Hill from Placer
CYVL-V-536	OXBOW 60 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-2:A5:54:_Colgate-Grass Valley 60 kV Line	P6	N-1/N-1	>0.90	0.8641	0.8752	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Atlantic-Placer 115 kV Line and serve Forest Hill from Placer
CYVL-V-537	PALERMO 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8832	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-538	PATTERSN 60 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8945	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-539	PEACHTON 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8716	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-540	PEASE 60 kV	P1-2:A4:10:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8696	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-541	PENRYN 60 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.5903	0.9123	>0.90	>0.90				Sierra Action Plan
CYVL-V-542	PIKE CTY 60 kV	P1-2:A5:66:_Smartville - Nicolaus #1 60 kV Line and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8619				Sierra Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-543	PLACER 60 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.62	0.9303	>0.90	>0.90				Sierra Action Plan
CYVL-V-544	PLACER 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.6201	0.9256	>0.90	>0.90				Sierra Action Plan
CYVL-V-545	PLACER 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8884	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-546	PLACER 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.5819	0.8611	>0.90	>0.90				Sierra Action Plan
CYVL-V-547	PLAINFLD 60 kV	P1-1:A4:22:_WOLFSKIL 13.80 Generator ID 1 and P1-3:A4:8:_Vaca Dixon 230/115 kV Transformer No. 4	P6	N-1/N-1	0.8503	0.8529	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion
CYVL-V-548	PLCRVLB2 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8906	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-549	PLCRVLB2 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.303	0.763	>0.90	>0.90				Sierra Action Plan
CYVL-V-550	PLCRVLT1 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3349	0.777	>0.90	>0.90				Sierra Action Plan
CYVL-V-551	PLCRVLT2 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8908	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-552	PLCRVLT2 115 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3031	0.7559	>0.90	>0.90				Sierra Action Plan
CYVL-V-553	PLFLDJCT 60 kV	P1-1:A4:22:_WOLFSKIL 13.80 Generator ID 1 and P1-3:A4:14:_Vaca Dixon 115/60 kV Transformer No. 9	P6	N-1/N-1	0.8589	0.8632	>0.90	>0.90	>0.90				Explore potential mitigation
CYVL-V-554	PLSNT GR 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8285	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-555	PLUMAS 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8352	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: East Nicolaus Reinforcement Project
CYVL-V-556	POE 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8419	>0.90	>0.90	>0.90	>0.90				Explore potential mitigation
CYVL-V-557	POST 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.2994	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-558	POST 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:13:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	>0.90	0.894	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-559	RALSTON 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8901	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan



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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-560	RIO OSO 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.7535	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-561	RIPON 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.892	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-562	RK C JT1 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8429	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-563	RK C JT2 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8398	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-564	ROCKCK 1 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8429	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-565	ROCKCK 2 230 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8398	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-566	ROCKLIN 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8408	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-567	ROLLINS 60 kV	P1-3:A5:6:_Goldhill #2 230/115 kV Transformer and P1-3:A5:5:_Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.7885	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-568	ROLLNSTP 60 kV	P1-2:A5:13:_Rio Oso - Brighton 230 kV Line and P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1	P6	N-1/N-1	>0.90	0.8827	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-569	RPN JNCN 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8916	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-570	RPNJN2 115 kV	P1-2:A11:41:_Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:55:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	0.8972	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-571	SEBASTIA 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1173	>0.90	>0.90	0.8059	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-572	SHADYGLN 60 kV	P1-2:A4:10:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8992	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-573	SHADYGLN 60 kV	P1-2:A5:13:_Rio Oso - Brighton 230 kV Line and P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1	P6	N-1/N-1	>0.90	0.8827	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-574	SHPRING 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8927	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-575	SHPRING 115 kV	P1-3:A5:5:_Goldhill #1 230/115 kV Transformer and P1-3:A5:6:_Goldhill #2 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3101	0.7657	>0.90	>0.90				Sierra Action Plan

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					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-576	SHPRING 115 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.31	0.7584	>0.90	>0.90				Sierra Action Plan
CYVL-V-577	SHPRING1 115 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3442	0.78	>0.90	>0.90				Sierra Action Plan
CYVL-V-578	SHPRING2 115 kV	P1-2:A4:10: Brighton - Bellota 230 kV Line and P1-2:A5:9: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8931	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-579	SHPRING2 115 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3107	0.7589	>0.90	>0.90				Sierra Action Plan
CYVL-V-580	SHW 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1147	>0.90	>0.90	0.8036	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-581	SHWSS 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1148	>0.90	>0.90	0.8036	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-582	SIERRAPI 60 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.827	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-583	SMRTSVLE 60 kV	P1-3:A5:1: Colgate #3 230/60 kV Transformer and P1-2:A5:66: Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8488				Sierra Action Plan
CYVL-V-584	SMRTVLE1 60 kV	P1-3:A5:1: Colgate #3 230/60 kV Transformer and P1-2:A5:66: Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8488				Sierra Action Plan
CYVL-V-585	SMRTVLLE 60 kV	P1-3:A5:1: Colgate #3 230/60 kV Transformer and P1-2:A5:66: Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8488				Sierra Action Plan
CYVL-V-586	SPAULDNG 60 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8515	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-587	SPI JCT 115 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.793	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vaca-Davis Voltage Conversion
CYVL-V-588	SPICAMIN 115 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.3191	0.7685	>0.90	>0.90				Sierra Action Plan
CYVL-V-589	SPI-LINC 115 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.793	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-590	STAGG 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1423	>0.90	>0.90	0.8254	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-591	SUMMIT 60 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8895	>0.90	>0.90	>0.90				Sierra Action Plan

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High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-592	TAMARACK 60 kV	P1-3:A5:6: Goldhill #2 230/115 kV Transformer and P1-3:A5:5: Goldhill #1 230/115 kV Transformer	P6	N-1/N-1	>0.90	0.8796	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-593	TAYLOR 60 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8423	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-594	TERMNOUS 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1219	>0.90	>0.90	0.8104	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-595	TERMNS J 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1242	>0.90	>0.90	0.8118	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-596	TRACY 115 kV	P1-3:A11:16: Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17: Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8773	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-597	TRACY JC 115 kV	P1-3:A11:16: Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17: Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8827	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-598	TRES VIS 60 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8948	>0.90	>0.90	>0.90	>0.90				Explore potential mitigation
CYVL-V-599	TUDOR 60 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8543	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: East Nicolaus Reinforcement Project
CYVL-V-600	UCD_TP2 115 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:9: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.3156	0.8916	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-601	UCDAVSJ1 115 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:9: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.3156	0.8916	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-602	ULTRA JT 115 kV	P1-2:4:3: Brighton - Bellota 230 kV Line and P1-2:A5:10: Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8232	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-603	UOP 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1494	>0.90	>0.90	0.8287	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-604	VALLY HM 115 kV	P1-3:A11:16: Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17: Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8961	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-605	VICTOR 60 kV	P1-2:A11:10: Eight Mile - Stagg 230 kV Line and P1-2:A11:8: Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.8895	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-606	VIERRA 115 kV	P1-2:A11:41: Schulte Sw Sta - Kasson - Manteca 115 kV Line and P1-2:A11:46: Vierra - Tracy - Kasson 115 kV Line	P6	N-1/N-1	0.8993	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-607	VLYHMTP1 115 kV	P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1 and P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3	P6	N-1/N-1	0.8962	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-608	W.SCRMNO 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:9:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.2978	0.8944	>0.90	>0.90	>0.90				Short Term: Sacramento Action Plan, Long Term: Vaca-Davis voltage convesion & Rio Oso Voltage Support Project
CYVL-V-609	WATRLJCT 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.5867	>0.90	>0.90	0.9501	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-610	WDLND_BM 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.4199	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-611	WEMR SWS 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8949	>0.90	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-612	WEMR SWS 60 kV	P1-2:A5:13:_Rio Oso - Brighton 230 kV Line and P1-1:A5:23:_ROLLINSF 6.60 Generator ID 1	P6	N-1/N-1	>0.90	0.8727	>0.90	>0.90	>0.90				Sierra Action Plan
CYVL-V-613	WESCOT1 60 kV	P1-2:A3:9:_Delevan-Cortina 230 kV Line and P1-2:A4:17:_Cortina - Vaca 230 kV Line	P6	N-1/N-1	>0.90	>0.90	0.896	>0.90	>0.90				Sacramento Action Plan
CYVL-V-614	WEST JCT 60 kV	P1-2:A5:23:_Colgate - Palermo 60 kV Line (Bangor-Colgate) and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8395				Sierra Action Plan
CYVL-V-615	WESTLEY 60 kV	P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3 and P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1	P6	N-1/N-1	0.8507	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-616	WESTLEY 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3 and P1-2:A11:59:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	>0.90	>0.90	0.865	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-617	WHEATLND 60 kV	P1-2:A5:10:_Rio Oso - Brighton 230 kV Line and P1-2:A4:10:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	0.8386	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease - Marysville 60 kV Line
CYVL-V-618	WHEATLND 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line and P1-3:A5:11:_East Nicolaus #3 115/60 kV Transformer	P6	N-1/N-1	>0.90	0.8996	0.8919	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease - Marysville 60 kV Line
CYVL-V-619	WHTLND1 60 kV	P1-2:A5:10:_Rio Oso - Brighton 230 kV Line and P1-2:4:3:_Brighton - Bellota 230 kV Line	P6	N-1/N-1	0.8387	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease - Marysville 60 kV Line
CYVL-V-620	WHTLND1 60 kV	P1-2:A5:35:_East Nicolaus - Rio Oso 115 kV Line and P1-3:A5:11:_East Nicolaus #3 115/60 kV Transformer	P6	N-1/N-1	>0.90	0.8998	0.892	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease - Marysville 60 kV Line
CYVL-V-621	WHTLND1 60 kV	P1-2:A5:66:_Smartville - Nicolaus #1 60 kV Line and P1-3:A5:1:_Colgate #3 230/60 kV Transformer	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.8292				Short Term: Sierra Action Plan, Long Term: New Pease - Marysville 60 kV Line

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-622	WODBRG J 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:4:_Lockeford - Bellota 230 kV Line	P6	N-1/N-1	0.8915	>0.90	>0.90	>0.90	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-623	WOODLD 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.4396	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.
CYVL-V-624	WSID 60 kV	P1-3:A11:17:_Tesla 230/115 kV Transformer No. 3 and P1-3:A11:16:_Tesla 230/115 kV Transformer No. 1	P6	N-1/N-1	0.851	>0.90	>0.90	>0.90	>0.90				Action Plan
CYVL-V-625	WSID 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3 and P1-2:A11:59:_Schulte - Lammers 115 kV Line	P6	N-1/N-1	>0.90	>0.90	0.8653	>0.90	>0.90				Action Plan. Long term mitigation Vierra looping project
CYVL-V-626	WSTLNESW 60 kV	P1-2:A11:10:_Eight Mile - Stagg 230 kV Line and P1-2:A11:8:_Stagg - Tesla 230 kV Line	P6	N-1/N-1	0.1617	>0.90	>0.90	0.8338	>0.90				Action Plan. Long term mitigation Eight Mile Lodi Industrial - Lockeford 230 kV DCTL
CYVL-V-627	YBA CTYJ 60 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.8855	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: New Pease 115/60 kV Transformer
CYVL-V-628	YUBAGOLD 60 kV	P1-3:A5:1:_Colgate #3 230/60 kV Transformer and P1-2:A5:66:_Smartville - Nicolaus #1 60 kV Line	P6	N-1/N-1	>0.90	>0.90	>0.90	>0.90	0.845				Sierra Action Plan
CYVL-V-629	ZAMORA 115 kV	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A5:10:_Rio Oso - Brighton 230 kV Line	P6	N-1/N-1	0.5338	>0.90	>0.90	>0.90	>0.90				Short Term: Sierra Action Plan, Long Term: Vaca - Davis Voltage Conversion Project.



ID	Contingency	Category	Category Description	Transient Stability Performance								Potential Mitigation Solutions
				2017 Summer Peak	2020 Summer Peak	2025 Summer Peak	N/A	N/A	N/A	N/A	N/A	
CYVL-TS-1	Vaca - Lambie 230 kV Line	P1-2	Line	Non	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Non						Investigate/ Explore potential mitigation
CYVL-TS-2	Vaca-Dixon No. 12 500/230 kV Transformer Tertiary	P1-3	Transformer	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles						Investigate/ Explore potential mitigation
CYVL-TS-3	30460 VACA-DIX 115kV Bus	P2-2	Bus	Non	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Non						Investigate/ Explore potential mitigation
CYVL-TS-4	BUS FAULT AT NON-BUS-TIE BREAKER CB1722 FAILURE AT VACA-DIXON 115kV BUS 2 FAULT AT 30460 VACA-DIX	P2-3	Breaker	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles						Investigate/ Explore potential mitigation
				frequency at bus 31974 below limit [59.6] for [6.0] cycles	frequency at bus 31974 below limit [59.6] for [6.0] cycles	frequency at bus 31974 below limit [59.6] for [6.0] cycles						Investigate/ Explore potential mitigation
CYVL-TS-5	BUS-TIE BREAKER 202 FAULT AT VACA-DIX E 230 kV Bus 1 and Bus 2 - CB 202 Failure	P2-4	Tie-Breaker	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Load Bus Voltage Dip> 20%; Load Bus Voltage Dip 20% for 20 Cycles	Non						Investigate/ Explore potential mitigation



Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)								Potential Mitigation Solutions
				Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SLD-1												

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

Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)								Potential Mitigation Solutions
		Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	
X-SS-1										

No single source substation with more than 100 MW Load