



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 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-9	34103 CHWCGNJT 115 34109 CHWCGN 115 1	Normal	P0	N-0	<100	108.51	<100	<100	<100				Explore potential mitigation
CYVL-T-10	34860 TAFT A 70.0 34919 TX_BV_HL 70.0 1	Normal	P0	N-0	113.46	113.58	114.59	<100	<100				Explore potential mitigation
CYVL-T-11	26098 SCATER&1 230 26087 OLYMPC 230 2	Normal	P0	N-0	100.38	<100	<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-16	32257 PLCRVLT2 115 32510 CHILIBAR 4.16 1	Normal	P0	N-0	115.18	<100	<100	<100	<100				Explore potential mitigation
CYVL-T-17	32302 YUBACITY 60.0 32496 YCEC 13.8 1	Normal	P0	N-0	111.60	108.59	<100	<100	<100				Explore potential mitigation
CYVL-T-18	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-19	32454 DRUM 5 13.8 32218 DRUM 115 1	Normal	P0	N-0	100.32	<100	<100	<100	<100				Explore potential mitigation
CYVL-T-20	32460 NEWCASTLE 13.2 32234 NEWCASTLE 115 1	Normal	P0	N-0	108.68	102.90	<100	<100	<100				Explore potential mitigation
CYVL-T-21	32468 NARROWS2 13.8 32312 NARRWS 2 60.0 1	Normal	P0	N-0	101.49	<100	<100	<100	<100				Explore potential mitigation



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-22	32502 DTCHFLT2 6.90 32222 DTCH FL2 115 1	Normal	P0	N-0	101.23	100.58	<100	<100	<100				Explore potential mitigation
CYVL-T-23	33846 PRDE 1-3 7.20 33634 PRDESW 60.0 1	Normal	P0	N-0	<100	<100	<100	105.80	<100				Explore potential mitigation
CYVL-T-24	33850 CAMANCHE 4.16 33566 CAMANCHE 115 1	Normal	P0	N-0	<100	<100	<100	104.30	<100				Explore potential mitigation
CYVL-T-25	32474 DEER CRK 2.40 32374 DRUM 60.0 1	Normal	P0	N-0	107.01	107.01	<100	<100	<100				Explore potential mitigation
CYVL-T-26	34103 CHWCGNJT 115 34109 CHWCGN 115 1	Normal	P0	N-0	<100	108.51	<100	<100	<100				Explore potential mitigation
CYVL-T-27	26098 SCATER&1 230 26087 OLYMPC 230 2	Normal	P0	N-0	100.38	<100	<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-33	32257 PLCRVLT2 115 32510 CHILIBAR 4.16 1	Normal	P0	N-0	115.18	<100	<100	<100	<100				Explore potential mitigation
CYVL-T-34	32302 YUBACITY 60.0 32496 YCEC 13.8 1	Normal	P0	N-0	111.60	108.59	<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				Explore potential mitigation
CYVL-T-36	32454 DRUM 5 13.8 32218 DRUM 115 1	Normal	P0	N-0	100.32	<100	<100	<100	<100				Explore potential mitigation
CYVL-T-37	32460 NEWCASTLE 13.2 32234 NEWCASTLE 115 1	Normal	P0	N-0	108.68	102.90	<100	<100	<100				Explore potential mitigation
CYVL-T-38	32468 NARROWS2 13.8 32312 NARRWS 2 60.0 1	Normal	P0	N-0	101.49	<100	<100	<100	<100				Explore potential mitigation
CYVL-T-39	32474 DEER CRK 2.40 32374 DRUM 60.0 1	Normal	P0	N-0	107.01	107.01	<100	<100	<100				Explore potential mitigation
CYVL-T-40	32502 DTCHFLT2 6.90 32222 DTCH FL2 115 1	Normal	P0	N-0	101.23	100.58	<100	<100	<100				Explore potential mitigation
CYVL-T-41	33846 PRDE 1-3 7.20 33634 PRDESW 60.0 1	Normal	P0	N-0	<100	<100	<100	105.80	<100				Explore potential mitigation
CYVL-T-42	33850 CAMANCHE 4.16 33566 CAMANCHE 115 1	Normal	P0	N-0	<100	<100	<100	104.30	<100				Explore potential mitigation



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-43	34103 CHWCGNJT 115 34109 CHWCGN 115 1	Normal	P0	N-0	<100	108.51	<100	<100	<100				Explore potential mitigation
CYVL-T-44	34112 EXCHEQUR 115 34116 LE GRAND 115 1	Normal	P0	N-0	<100	<100	<100	101.71	<100				Explore potential mitigation
CYVL-T-45	34860 TAFT A 70.0 34919 TX_BV_HL 70.0 1	Normal	P0	N-0	113.46	113.58	<100	<100	<100				Explore potential mitigation
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-48	32228 PLACER 115 32512 WISE 12.0 1	P1-2:A5:25:_Placer - Gold Hill 115 kV Line No. 1	P1	N-1	122.35	123.12	<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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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

Study Area: PG&E Central Valley Sacramento

Thermal Overloads



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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-97	32460 NEWCASTLE 13.2 32234 NEWCASTLE 115 1	P2-2:A5:4_BUS FAULT AT 30337 GOLDHILL 230.00 Bus 2	P2	Bus	108.68	107.72	<100	<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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: Action Plan



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Short term: Action Plan
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				Short term: Action Plan
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
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-137	32228 PLACER 115 32512 WISE 12.0 1	P2-1:A5:15:_GOLDHILL-HORSHE1 #1 115 kV	P2-1	Line section w/o fault	122.35	123.14	<100	<100	<100				Explore potential mitigation



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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-141	32460 NEWCASTLE 13.2 32234 NEWCASTLE 115 1	P2-1:A5:15:_GOLDHILL-HORSHE1 #1 115 kV	P2-1	Line section w/o fault	108.68	108.63	<100	<100	<100				Explore potential mitigation
CYVL-T-142	32462 CHI.PARK 11.5 32224 CHCGO PK 115 1	P2-1:A5:15:_GOLDHILL-HORSHE1 #1 115 kV	P2-1	Line section w/o fault	100.55	<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-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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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				Short term: Action Plan
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				Short term: Action Plan



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: 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
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



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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-207	32228 PLACER 115 32512 WISE 12.0 1	P1-2:A11:55:_Tesla - Tracy 115 kV Line and P1-2:A5:41:_Drum - Higgins 115 kV Line	P6	N-1/N-1	<100.0	103.53	104.35	<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
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



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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-222	32458 RALSTON 13.8 30340 RALSTON 230 1	P1-2:4:3:_Brighton - Bellota 230 kV Line and P1-2:A11:29:_Eight Mile Road - Tesla 230 kV Line	P6	N-1/N-1	102.07	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
CYVL-T-223	32462 CHI.PARK 11.5 32224 CHCGO PK 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	103.81	<100.0	<100.0	<100.0	<100.0				Explore potential mitigation
CYVL-T-224	32462 CHI.PARK 11.5 32224 CHCGO PK 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	103.84	103.78	<100.0	<100.0				Explore potential mitigation
CYVL-T-225	32472 SPAULDG 9.11 32372 SPAULDNG 60.0 1	P1-2:A4:32:_West Sacramento - Brighton 115 kV Line and P1-2:A4:33:_Brighton - Davis 115 kV Line	P6	N-1/N-1	102.75	<100.0	<100.0	<100.0	<100.0				Short term: Action Plan
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				Explore potential mitigation
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Explore potential mitigation
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				Short term: Action Plan



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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



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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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 INDUSTRIAL 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-261	32462 CHI.PARK 11.5 32224 CHCGO PK 115 1	P7-1:A12:1:_Stagg-Tesla 230 kV Line & Eight Mile Road-Tesla 230 kV Line	P7	DCTL	104.10	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line



ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
CYVL-T-262	32472 SPAULDG 9.11 32372 SPAULDNG 60.0 1	P7-1:A12:1:_Stagg-Tesla 230 kV Line & Eight Mile Road-Tesla 230 kV Line	P7	DCTL	101.96	<100.0	<100.0	<100.0	<100.0				Short Term: Stockton Action Plan Long Term: New Stagg - Hammer 60 kV Line
CYVL-T-263	32480 BOWMAN 9.11 32406 BOWMN PH 60.0 1	P7-1:A5:19_Placer-Gold Hill No. 1 115 kV Line & Placer-Gold Hill No. 2 115 kV Line	P7	DCTL	111.85	<100.0	<100.0	<100.0	<100.0				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line
CYVL-T-264	32502 DTCHFLT2 6.90 32222 DTCH FL2 115 1	P7-1:A5:19_Placer-Gold Hill No. 1 115 kV Line & Placer-Gold Hill No. 2 115 kV Line	P7	DCTL	106.18	<100.0	<100.0	<100.0	<100.0				Short Term: Sierra Action Plan, Long Term: New Atlantic - Placer 115 kV Line
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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
CYVL-T-269	33810 SP CMPNY 13.8 33572 SP CMPNY 115 1	P7-1:A12:21:_Schulte-Kasson-Manteca 115 kV Line & Tesla-Salado-Manteca 115 kV Line	P7	DCTL	<100.0	<100.0	101.33	<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	2020 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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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Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 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				Short term: Action Plan
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: 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				Short term: 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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-VD-76	LEE_JCT 60 kV	P1-3:A11:21:_Manteca 115/60 kV Transformer No. 3	P1	N-1	<5.0	<5.0	<5.0	5.054	<5.0				Explore potential mitigation
CYVL-VD-77	LTHRP JT 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-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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
CYVL-VD-146	CLRKSVE 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				Explore potential mitigation
CYVL-VD-147	CLRKSFLT 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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
CYVL-VD-159	CPM 115 kV	P2-4:A5:3_GOLDHILL 230 kV Bus 1 and 2 - CB 202 Failure	P2	Bus-tie breaker	91.46	70.61	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	91.46	70.61	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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: Action Plan
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

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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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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
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				Short term: 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
CYVL-VD-287	NEWCASTLE 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				Explore potential mitigation
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				Explore potential mitigation
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

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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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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	VLYHMTP1 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	VLYHMTP2 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				Explore potential mitigation
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				Explore potential mitigation
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: 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				Short term: 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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
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				Explore potential mitigation
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				Short term: 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				Short term: Action Plan
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				Short term: 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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: 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				Short term: 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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Short term: 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				Short term: 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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: 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				Short term: 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				Explore potential mitigation
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				Short term: 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				Short term: Action Plan
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				Short term: 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				Short term: Action Plan
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				Short term: Action Plan
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				Short term: 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	2020 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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: Action Plan
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: Action Plan
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: Action Plan
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: Action Plan
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				Short term: 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Short term: Action Plan
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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: Action Plan
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: 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				Explore potential mitigation
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				Short term: 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: 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				Explore potential mitigation
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				Explore potential mitigation
CYVL-V-149	INDUSTRL 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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
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

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ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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
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

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
CYVL-V-244	RPN JNCN 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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	VLYHMTP1 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				Explore potential mitigation
CYVL-V-298	VLYHMTP1 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	VLYHMTP2 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				Explore potential mitigation
CYVL-V-300	VLYHMTP2 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				Short term: Action Plan
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: Action Plan
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				Short term: Action Plan
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				Short term: Action Plan
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: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Short term: Action Plan
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				Short term: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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: Action Plan
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
CYVL-V-392	CHALLNGE 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
CYVL-V-504	MDDLK 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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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					Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation

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					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A	N/A	
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				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	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions	
					2017 Summer Peak	2020 Summer Peak	2020 Summer Peak	2017 Spring Off-Peak	2020 Spring Light Load	N/A	N/A		N/A
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				Explore potential mitigation
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				Explore potential mitigation
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				Explore potential mitigation



ID	Contingency	Category	Category Description	Transient Stability Performance								Potential Mitigation Solutions
				2017 Summer Peak	2020 Summer Peak	2020 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.

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



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