

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)								Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	N/A	
HUMB-T-SEN-1	Humboldt Bay - Rio Dell Jct 60kV (Humboldt Bay - Eel River)	BUS FAULT AT 31015 BRDGVLLE 115.00	P2-2	Bus Fault	74.37	107.90							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-2	Humboldt Bay - Rio Dell Jct 60kV (Humboldt Bay - Eel River)	BUS-TIE BREAKER FAULT AT 31015 BRDGVLLE 115.00	P2-4	Bus Tie Breaker	74.37	107.90							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-3	Rio Dell Jct - Bridgeville 60kV (Between CARLOTTA - SWNS FLT)	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	31.80	105.28							May need to reconductor the line section if QFs retire
HUMB-T-SEN-4	Rio Dell Jct - Bridgeville 60kV (Between CARLOTTA - SWNS FLT)	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	32.45	104.84							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-5	Rio Dell Jct - Bridgeville 60kV (Between CARLOTTA - SWNS FLT)	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	31.81	104.88							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-6	Rio Dell Jct - Bridgeville 60kV (Between CARLOTTA - SWNS FLT)	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	32.45	104.84							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-7	Rio Dell Jct - Bridgeville 60kV (Between SWNS FLT - BRDGVLLE)	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Bus Fault	31.75	105.06							May need to reconductor the line section if QFs retire
HUMB-T-SEN-8	Rio Dell Jct - Bridgeville 60kV (Between SWNS FLT - BRDGVLLE)	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Breaker Fault	32.47	104.62							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-9	Rio Dell Jct - Bridgeville 60kV (Between SWNS FLT - BRDGVLLE)	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	31.78	104.67							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-10	Rio Dell Jct - Bridgeville 60kV (Between SWNS FLT - BRDGVLLE)	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Breaker Fault	32.47	104.62							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-11	Garberville - Laytonville 60kV (Between GRBRVLLE - KEKAWAKA)	Bridgeville- Garberville 115 kV Line (New)	P6	Multiple Contingency	121.89	120.90							Open breaker at Laytonville. Drop load as needed
HUMB-T-SEN-12	Laytonville - Willits 60kV	Bridgeville- Garberville 115 kV Line (New)	P6	Multiple Contingency	137.18	134.97							Open breaker at Laytonville. Drop load as needed
HUMB-T-SEN-13	Rio Dell Jct - Bridgeville 60kV (Between CARLOTTA - SWNS FLT)	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P6	Multiple Contingency		Nconv							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-14	Rio Dell Jct - Bridgeville 60kV (Between SWNS FLT - BRDGVLLE)	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P6	Multiple Contingency		Nconv							Drop Load in Bridgeville-Eel River corridor



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					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	N/A	
HUMB-T-SEN-15	Bridgeville - Garberville 60kV (Bridgeville - Fruitland Jct)	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P6	Multiple Contingency		Nconv							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-16	Bridgeville - Garberville 60kV (Between FRUTLDJT - FTSWRDJT)	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P6	Multiple Contingency		Nconv							Drop Load in Bridgeville-Eel River corridor
HUMB-T-SEN-17	Bridgeville - Garberville 60kV (FortSeward Jct - Garberville)	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P6	Multiple Contingency		Nconv							Drop Load in Bridgeville-Eel River corridor

Study Area: **PG&E Humboldt**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %							Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	
HUMB-VD-SEN-1	CARLOTTA 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	1.171	11.65						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-2	HRCSCOTIA 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	0.87	12.387						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-3	HRCSCOTIATP 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	0.869	12.367						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-4	NEWBURG 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	1.807	13.661						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-5	PCLUMBER 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	1.171	11.65						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-6	RIO DELL 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	0.898	12.354						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-7	RIODLLTP 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	1.246	12.093						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-8	SCOTIATP 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	0.898	12.354						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire
HUMB-VD-SEN-9	SCTIATP2 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR)	P2-1	Line Section Open	0.864	12.368						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-10	HOOPA 60 kV	BUS FAULT AT 31080 HUMBOLDT 60.00	P2-2	Bus Fault	1.856	8.712						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-11	MPLE CRK 60 kV	BUS FAULT AT 31080 HUMBOLDT 60.00	P2-2	Bus Fault	1.756	8.239						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-12	RDGE CBN 60 kV	BUS FAULT AT 31080 HUMBOLDT 60.00	P2-2	Bus Fault	1.827	6.652						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-13	RUSS RCH 60 kV	BUS FAULT AT 31080 HUMBOLDT 60.00	P2-2	Bus Fault	1.775	8.328						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-14	WILLWCRK 60 kV	BUS FAULT AT 31080 HUMBOLDT 60.00	P2-2	Bus Fault	1.83	8.589						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-15	BRDGVILLE 115 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	2.339	6.441						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-16	CARLOTTA 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	3.267	14.535						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.

Study Area: **PG&E Humboldt**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %								Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	N/A	
HUMB-VD-SEN-17	EEL RIVR 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	4.876	18.282							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-18	HRCSCOTIA 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	2.335	15.498							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-19	HRCSCOTIATP 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	2.332	15.473							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-20	LOW GAP1 115 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	2.371	5.857							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-21	NEWBURG 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	4.334	17.165							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-22	PCLUMBER 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	3.267	14.536							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-23	RIO DELL 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	2.409	15.456							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-24	RIODLLTP 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	3.34	15.117							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-25	SCOTIATP 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	2.409	15.455							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-26	SCTIATP2 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	2.319	15.474							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-27	CARLOTTA 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	2.376	14.575							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-28	EEL RIVR 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	4.013	18.322							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-29	HRCSCOTIA 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.742	15.539							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-30	HRCSCOTIATP 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.74	15.513							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-31	NEWBURG 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	3.473	17.205							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-32	PCLUMBER 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	2.376	14.575							Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.

Study Area: **PG&E Humboldt**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %							Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	
HUMB-VD-SEN-33	RIO DELL 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.797	15.496						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-34	RIODLLTP 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	2.491	15.156						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-35	SCOTIATP 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.797	15.496						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-36	SCTIATP2 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.73	15.515						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-37	BRDGVILLE 115 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	2.339	6.441						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-38	CARLOTTA 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	3.267	14.535						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-39	EEL RIVR 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	4.876	18.282						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-40	HRCSCOTIA 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	2.335	15.498						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-41	HRCSCOTIATP 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	2.332	15.473						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-42	LOW GAP1 115 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	2.371	5.857						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-43	NEWBURG 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	4.334	17.165						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-44	PCLUMBER 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	3.267	14.536						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-45	RIO DELL 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	2.409	15.456						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-46	RIODLLTP 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	3.34	15.117						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-47	SCOTIATP 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	2.409	15.455						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.
HUMB-VD-SEN-48	SCTIATP2 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	2.319	15.474						Voltage deviation violations due to overloaded lines. Reconductor the overloaded lines if QFs retire.

Study Area: **PG&E Humboldt**

Voltage Deviations



ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %							Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	
HUMB-VD-SEN-49	ARCATA 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.053	5.284						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-50	ARCTAJT2 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	5.793	5.043						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-51	BCHIP_TP 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.365	5.511						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-52	BCHIPMIL 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.365	5.511						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-53	BIG_LAGN 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.451	5.585						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-54	BLUE LKE 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.359	5.491						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-55	BLUELKPP 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.35	5.48						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-56	ESSX JCT 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.367	5.517						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-57	JANCK TP 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.362	5.52						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-58	JANS CRK 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.927	6.012						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-59	ORICK 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.464	5.595						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-60	SIMPSON 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.359	5.49						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-61	SMPSNTAP 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.356	5.487						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-62	TRINIDAD 60 kV	Humboldt No.1 60 kV and Arcata - Humboldt 60 kV Lines	P7	DCTL	6.441	5.576						Ensure Generation units in Arcata pocket are turned ON
HUMB-VD-SEN-63	COVELO6 60 kV	Bridgeville - Garberville 60 kV and Bridgeville - Garberville 115 kVS Lines	P7	DCTL	9.489	7.433						Open breaker at Laytonville
HUMB-VD-SEN-64	GRBRVLL 60 kV	Bridgeville - Garberville 60 kV and Bridgeville - Garberville 115 kVS Lines	P7	DCTL	16.528	11.723						Open breaker at Laytonville
HUMB-VD-SEN-65	GRBRVLL 115 kV	Bridgeville - Garberville 60 kV and Bridgeville - Garberville 115 kVS Lines	P7	DCTL	16.235	11.422						Open breaker at Laytonville
HUMB-VD-SEN-66	KEKAWAKA 60 kV	Bridgeville - Garberville 60 kV and Bridgeville - Garberville 115 kVS Lines	P7	DCTL	15.369	11.157						Open breaker at Laytonville
HUMB-VD-SEN-67	LYTNVLL 60 kV	Bridgeville - Garberville 60 kV and Bridgeville - Garberville 115 kVS Lines	P7	DCTL	9.414	7.372						Open breaker at Laytonville

Study Area: **PG&E Humboldt**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	
HUMB-V-SEN-1	CARLOTTA 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.005	0.8492						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-2	EEL RIVR 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	0.9876	0.824						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-3	HRCSCOTIA 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.0143	0.8182						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-4	HRCSCOTIATP 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.0156	0.8198						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-5	NEWBURG 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	0.9901	0.8268						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-6	PCLUMBER 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.005	0.8492						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-7	RIO DELL 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.0145	0.8208						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-8	RIODLLTP 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.0035	0.8418						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-9	SCOTIATP 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.0145	0.8209						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-10	SCTIATP2 60 kV	HMBLT BY-EEL RIVR #1 60 kV	P2-1	Line Section Open	1.0159	0.8197						Low voltages due to overloaded lines. Reconductor the overloaded lines
HUMB-V-SEN-11	CARLOTTA 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	0.9952	0.8526						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-12	EEL RIVR 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	0.9781	0.8275						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-13	HRCSCOTIA 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	1.0078	0.8217						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-14	HRCSCOTIATP 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	1.0091	0.8233						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-15	NEWBURG 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	0.9806	0.8302						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-16	PCLUMBER 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	0.9952	0.8526						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-17	RIO DELL 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	1.0078	0.8243						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-18	RIODLLTP 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	0.9941	0.8452						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-19	SCOTIATP 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	1.0078	0.8244						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-20	SCTIATP2 60 kV	BUS FAULT AT 31090 HMBLT BY 60.00	P2-2	Bus Fault	1.0094	0.8232						Low voltages due to line overloads. Drop Load.

Study Area: **PG&E Humboldt**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	
HUMB-V-SEN-21	CARLOTTA 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.0041	0.8522						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-22	EEL RIVR 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	0.9868	0.8271						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-23	HRCSCOTIA 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.0137	0.8213						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-24	HRCSCOTIATP 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.015	0.8229						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-25	NEWBURG 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	0.9892	0.8298						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-26	PCLUMBER 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.0041	0.8522						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-27	RIO DELL 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.0139	0.8239						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-28	RIODLLTP 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.0026	0.8448						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-29	SCOTIATP 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.0139	0.824						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-30	SCTIATP2 60 kV	NON-BUS-TIE BREAKER CB6322 FAULT AT 31090 HMBLT BY 60.00	P2-3	Breaker Fault	1.0153	0.8228						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-31	CARLOTTA 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	0.9952	0.8526						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-32	EEL RIVR 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	0.9781	0.8275						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-33	HRCSCOTIA 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	1.0078	0.8217						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-34	HRCSCOTIATP 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	1.0091	0.8233						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-35	NEWBURG 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	0.9806	0.8302						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-36	PCLUMBER 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	0.9952	0.8526						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-37	RIO DELL 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	1.0078	0.8243						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-38	RIODLLTP 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	0.9941	0.8452						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-39	SCOTIATP 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	1.0078	0.8244						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-40	SCTIATP2 60 kV	BUS-TIE BREAKER FAULT AT 31090 HMBLT BY 60.00	P2-4	Bus Tie Breaker	1.0094	0.8232						Low voltages due to line overloads. Drop Load.
HUMB-V-SEN-41	COVELO6 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor
HUMB-V-SEN-42	FRT SWRD 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor
HUMB-V-SEN-43	FRUITLND 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor

Study Area: **PG&E Humboldt**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	
HUMB-V-SEN-44	FRUTLDJT 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor
HUMB-V-SEN-45	FTSWRDJT 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor
HUMB-V-SEN-46	GRBRVLE 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor
HUMB-V-SEN-47	KEKAWAKA 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor
HUMB-V-SEN-48	LYTNVLE 60 kV	Bridgeville- Garberville 115 kV Line (New) and Bridgeville - Garberville 60 kV Line (BRDGVLE-FRUTLDJT)	P6	Multiple Contingency	Nconv	Nconv						Open breaker at Laytonville. Drop load as needed in the Humboldt - Bridgeville 60kV corridor
HUMB-V-SEN-49	BRDGVLE 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-50	CARLOTTA 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-51	FRT SWRD 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-52	FRUITLND 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-53	FRUTLDJT 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-54	FTSWRDJT 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-55	HRCSCOTIA 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-56	HRCSCOTIATP 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.

Study Area: **PG&E Humboldt**

High/Low Voltage



ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)							Potential Mitigation Solutions
					2025 SP No AAEE	2025 Retirement of QF Generations	N/A	N/A	N/A	N/A	N/A	
HUMB-V-SEN-57	NEWBURG 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-58	PCLUMBER 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-59	RIO DELL 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-60	RIODLLTP 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-61	SCOTIATP 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-62	SCTIATP2 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.
HUMB-V-SEN-63	SWNS FLT 60 kV	Humboldt - Rio Dell Jct 60 kV Line (HMBLT BY - EEL RIVR) and Bridgeville 60/12 kV Transformer	P6	Multiple Contingency		Nconv						Open breaker at Laytonville after 1st contingency. Load gets dropped between Newburg - Bridgeville corridor after second contingency.