

Study Area: PG&E Humboldt

Thermal Overloads

Note: Reliability assessment for 2035 scenarios may be re-run as part of the Policy study with Humboldt offshore wind interconnection alternative(s).



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)										Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast			
Bridgeville - Garberville 60 kV Line (BRDGVILLE-FRUTLDJT)	P1-2:A1.5:_KEKAWAKA-GRBRVILLE-LYTNVILLE 60KV [0]	P1	N-1	115	135	NA	89	87	NA	67	63	95	67	137	Project: Garberville Area Reinforcement		
Bridgeville-Cottonwood 115kV line	P1-1:A1.2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-2:A1.2:_HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P3	G-1/N-1	<100	<100	<100	<100	120	<100	<100	<100	<100	<100	<100	Under review		
Garberville-Laytonville 60kV Line	P1-2:A1.24:_BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDGVILLE_FRUTLDJT	P1	N-1	100	104	NA	76	79	NA	88	58	99	88	105	Project: Garberville Area Reinforcement		
	P5-5C:A1.2:_BRIDGEVILLE 115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply	100	104	NA	76	79	NA	88	59	99	88	105	Project: Garberville Area Reinforcement		
Humboldt - Bridgeville 115 kV Line	P1-1:A1.2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-2:A1.2:_HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P3	G-1/N-1	<100	<100	<100	<100	111	<100	<100	<100	<100	<100	<100	Under review		
Humboldt - Maple Creek 60 kV Line	P2-2:A1.1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	17	44	51	NConv	66	24	61	66	NConv	Load power factor under review		
	P2-3:A1.1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	46	NConv	NConv	NConv	17	46	NConv	NConv	NConv	Load power factor under review		
	P2-3:A1.2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	17	44	51	NConv	66	24	61	66	NConv	Load power factor under review		
	P5-5A:A1.1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	17	44	51	NConv	66	24	61	66	NConv	Load power factor under review		
Humboldt A1.1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply	NConv	NConv	47	NConv	NConv	NConv	NConv	17	46	NConv	NConv	NConv	Load power factor under review		
	P1-2:A1.11:_HUMBOLDT-EUREKA 60KV [7120] MOAS OPENED ON HUMBOLDT_HARRIS	P1	N-1	57	60	122	64	77	137	59	31	35	59	61	Continue to monitor		
Humboldt Bay - Rio Dell Jct 60 kV Line	Base Case	P0	Base Case	65	69	124	52	52	85	40	23	70	40	70	Continue to monitor		
	P1-3:A1.3:_BRDGVILLE 115/60KV TB 1	P1	N-1	113	118	124	100	109	85	68	37	112	68	120	Load forecast under review		
	P2-2:A1.1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	112	40	63	NConv	41	16	9	41	NConv	Load forecast under review		
	P2-3:A1.18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	104	111	124	94	108	85	59	29	137	59	112	Load forecast under review		
	P2-3:A1.19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	104	111	124	94	108	85	59	29	136	59	112	Load forecast under review		
	P2-3:A1.1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	113	NConv	NConv	NConv	NConv	33	13	NConv	NConv	Load forecast under review		
	P2-3:A1.20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	104	111	124	94	108	85	59	29	138	59	112	Load forecast under review		
	P2-3:A1.2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	112	40	63	NConv	41	16	9	41	NConv	Load forecast under review		
	P1-1:A1.9:_HMBOBAYPPA 13.80KV GEN UNIT 3&P1-3:A1.3:_BRDGVILLE 115/60KV TB 1	P3	G-1/N-1	NConv	NConv	112	40	63	NConv	41	16	9	41	NConv	Load forecast under review		
	P5-5A:A1.1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	113	NConv	NConv	NConv	NConv	33	13	NConv	NConv	Load forecast under review		
P5-5C:A1.1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/R	<100	<100	<100	<100	108	<100	<100	<100	<100	<100	<100	Load forecast under review			
Keswick-Cascade 60 kV Line	P1-1:A1.2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-2:A1.2:_HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P3	G-1/N-1	<100	<100	<100	<100	116	<100	<100	<100	<100	<100	<100	Under review		
	P1-1:A1.2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-2:A1.2:_HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P3	G-1/N-1	<100	<100	<100	<100	112	<100	<100	<100	<100	<100	<100	Under review		
Newburg-Rio Dell Tap 60 kV Line	P2-2:A1.1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	NA	67	93	NA	136	59	78	136	NConv	Project: Garberville Area Reinforcement		
	P2-3:A1.18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	65	60	NA	54	60	NA	26	3	104	26	62	Sensitivity only		
	P2-3:A1.19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	65	60	NA	54	60	NA	26	3	104	25	62	Sensitivity only		
	P2-3:A1.1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	NA	NConv	NConv	NA	NConv	68	86	NConv	NConv	Project: Garberville Area Reinforcement		
	P2-3:A1.20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	65	60	NA	54	60	NA	26	3	104	26	62	Sensitivity only		
	P2-3:A1.2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	NA	67	93	NA	136	59	78	136	NConv	Project: Garberville Area Reinforcement		
	P5-5A:A1.1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	NA	67	93	NA	136	59	78	136	NConv	Project: Garberville Area Reinforcement		
P5-5C:A1.1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply	NConv	NConv	NA	NConv	NConv	NA	NConv	68	86	NConv	NConv	Project: Garberville Area Reinforcement			
Rio Dell Jct - Bridgeville 60 kV Line (CARLOTTA-PCLUMBER)	P2-2:A1.1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	13	84	115	30	138	53	137	138	NConv	Project: Garberville Area Reinforcement		
	P2-3:A1.1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	13	NConv	NConv	30	NConv	62	141	NConv	NConv	Project: Garberville Area Reinforcement		
	P2-3:A1.2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	13	84	115	30	138	53	137	138	NConv	Project: Garberville Area Reinforcement		
	P5-5A:A1.1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	13	84	115	30	138	53	137	138	NConv	Project: Garberville Area Reinforcement		
	P5-5C:A1.1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply	NConv	NConv	13	NConv	NConv	30	NConv	62	141	NConv	NConv	Project: Garberville Area Reinforcement		
Rio Dell Tap 60 kV Line(SCOTIATP-RIODLLTP)	P1-1:A1.2:_HRCGENSAB 13.80KV GEN UNIT 2	P1	N-1	62	50	39	37	37	57	39	25	110	40	50	Sensitivity only		
	P2-1:A1.52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	87	69	101	65	68	111	42	35	84	42	69	Load forecast under review		
	P2-2:A1.1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	82	61	68	84	62	35	109	62	NConv	Project: Garberville Area Reinforcement		
	P2-3:A1.18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	84	68	0	64	70	0	42	35	112	42	68	Project: Garberville Area Reinforcement		
	P2-3:A1.19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	84	68	0	64	70	0	42	35	111	42	68	Project: Garberville Area Reinforcement		
	P2-3:A1.20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	84	68	0	64	70	0	42	35	113	42	68	Project: Garberville Area Reinforcement		
	P2-3:A1.2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	82	61	68	84	62	35	109	62	NConv	Project: Garberville Area Reinforcement		
	P5-5A:A1.1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	82	61	68	84	62	35	109	62	NConv	Project: Garberville Area Reinforcement		
	P5-5C:A1.1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply	NConv	NConv	82	NConv	NConv	84	NConv	35	105	NConv	NConv	Project: Garberville Area Reinforcement		
Trinity-Cottonwood 115 kV Line	P1-1:A1.13:_HUMBOLDT2-25 25.00KV GEN UNIT VW&P1-2:A1.3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P3	G-1/N-1	<100	<100	<100	<100	<100	109	<100	<100	<100	<100	<100	Under review		
Trinity-Maple Creek 60 kV Line	P2-2:A1.1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	53	67	89	NConv	95	41	90	95	NConv	Load power factor under review		
	P2-3:A1.1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	68	NConv	NConv	NConv	36	69	NConv	NConv	NConv	Load power factor under review		
	P2-3:A1.2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	53	67	89	NConv	95	41	90	95	NConv	Load power factor under review		
	P5-5A:A1.1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant Relay	NConv	NConv	52	67	89	NConv	95	41	90	95	NConv	Add Redundant Relay		

Study Area: PG&E Humboldt



Thermal Overloads

Note: Reliability assessment for 2035 scenarios may be re-run as part of the Policy study with Humboldt offshore wind interconnection alternative(s).

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
	P5-5C:A1:1_-HUMBOLDT 115KV BATT(FAILURE OF NON-REDUDENT BATT)	P5	Non-Redundant battery supply	NConv	NConv	68	NConv	NConv	NConv	NConv	35	69	NConv	NConv	Add Redundant Battery

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
BRDGVLE 115 kV	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.98	0.94	0.90	NConv	0.83	1.05	0.78	0.83	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:19:_BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.96	0.96	0.98	0.96	0.98	0.97	0.96	0.96	0.81	0.95	0.96	Project: Garberville Area Reinforcement
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.05	0.77	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.86	0.84	NA	0.85	0.76	NA	0.94	1.05	0.63	0.94	0.83	Project: Garberville Area Reinforcement
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.98	0.94	0.90	NConv	0.83	1.05	0.78	0.83	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.98	0.94	0.90	NConv	0.83	1.05	0.78	0.83	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.05	0.77	NConv	NConv	Install Redundant Battery
BRDGVLE 60 kV	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.93	0.93	0.95	0.94	0.96	NConv	0.94	0.97	0.88	0.94	0.93	Project: Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	0.84	0.83	NA	0.85	0.81	NA	0.94	1.03	0.86	0.94	0.83	Project: Garberville Area Reinforcement
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	NA	NA	0.92	NA	NA	0.90	NA	NA	NA	NA	NA	Project: Garberville Area Reinforcement
	P2-1:A1:2:_BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.94	0.94	0.95	0.94	0.96	NConv	0.94	0.97	0.89	0.94	0.94	Project: Garberville Area Reinforcement
	P2-1:A1:52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	0.95	0.94	0.92	0.95	0.98	0.88	0.97	0.99	0.95	0.97	0.95	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.97	0.94	0.89	NConv	0.80	1.04	0.74	0.80	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2:_LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.93	0.93	0.95	0.94	0.96	NConv	0.95	0.97	0.88	0.94	0.93	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.84	0.82	NA	0.83	0.75	NA	0.92	1.03	0.62	0.92	0.82	Project: Garberville Area Reinforcement
	P2-3:A1:19:_BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.84	0.82	NA	0.83	0.75	NA	0.93	1.03	0.63	0.93	0.82	Project: Garberville Area Reinforcement
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.04	0.73	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.84	0.82	NA	0.83	0.75	NA	0.92	1.03	0.62	0.92	0.82	Project: Garberville Area Reinforcement
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.97	0.94	0.89	NConv	0.80	1.04	0.74	0.80	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.97	0.94	0.89	NConv	0.80	1.04	0.74	0.80	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.04	0.73	NConv	NConv	Install Redundant Battery
	P1-1:A1:1:_HRCGENSAB 13.80KV GEN UNIT 1	P1	N-1	0.95	0.95	0.94	0.95	0.97	0.89	0.97	1.00	0.96	0.97	0.95	continue to monitor
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2	P1	N-1	0.95	0.95	0.94	0.95	0.97	0.89	0.97	1.00	0.90	0.97	0.95	continue to monitor
	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC NEWBURG	P1	N-1	0.88	0.87	0.95	0.88	0.89	0.94	0.93	0.99	0.82	0.93	0.87	Project: Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.95	0.95	0.94	0.95	0.96	NConv	0.97	1.00	0.90	0.97	0.95	continue to monitor
	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	0.91	0.90	NA	0.92	0.90	NA	0.97	1.03	0.91	0.97	0.90	project:garberville Area Reinforcement control point under review
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	NA	NA	0.92	NA	NA	0.89	NA	NA	NA	NA	NA	continue to monitor
	P2-1:A1:52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	0.92	0.91	0.78	0.92	0.94	0.72	0.95	0.99	0.93	0.95	0.92	continue to monitor
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.95	0.92	0.90	NConv	0.63	1.02	0.53	0.63	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2:_LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.95	0.95	0.94	0.95	0.96	NConv	0.97	1.00	0.90	0.97	0.95	continue to monitor
	P2-3:A1:18:_BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.91	0.90	NA	0.91	0.87	NA	0.95	1.03	0.68	0.95	0.90	project:garberville Area Reinforcement control point under review

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.91	0.90	NA	0.91	0.87	NA	0.96	1.03	0.70	0.96	0.90	project:garberville Area Reinforcement control point under review
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.95	NConv	NConv	NConv	NConv	1.02	0.51	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.91	0.90	NA	0.91	0.87	NA	0.95	1.02	0.68	0.95	0.90	project:garberville Area Reinforcement control point under review
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.95	0.92	0.90	NConv	0.63	1.02	0.53	0.63	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.95	0.92	0.90	NConv	0.63	1.02	0.53	0.63	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.95	NConv	NConv	NConv	NConv	1.02	0.51	NConv	NConv	Install Redundant Battery
COVELO6 60 kV	P1-1:A1:9:_HMBOBAYPPA 13.80KV GEN UNIT 3&P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P3	G-1/N-1	0.89	0.88	NA	NA	NA	NA	NA	NA	NA	NA	NA	Project: Garberville Area Reinforcement
EEL RIVER JC 60 kV	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.94	0.93	0.94	NConv	0.56	1.02	0.48	0.56	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.95	0.94	0.96	0.95	0.93	0.95	0.97	1.03	0.73	0.96	0.94	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.95	0.94	0.96	0.95	0.93	0.95	0.98	1.03	0.74	0.98	0.94	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.93	NConv	NConv	NConv	NConv	1.02	0.46	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.95	0.94	0.96	0.95	0.93	0.95	0.97	1.03	0.73	0.96	0.94	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.94	0.93	0.94	NConv	0.56	1.02	0.48	0.56	NConv	Project: Garberville Area Reinforcement
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-3:A1:3:_BRDGVILLE 115/60KV TB 1	P3	G-1/N-1	NA	NA	NA	NA	0.7162	NA	NA	NA	NA	NA	NA	Load forecast under review
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.94	0.93	0.94	NConv	0.56	1.02	0.48	0.56	NConv	Install Redundant Relay
EEL RIVR 60 kV	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.93	NConv	NConv	NConv	NConv	1.02	0.46	NConv	NConv	Install Redundant Battery
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.93	0.93	0.93	NConv	0.55	1.02	0.48	0.55	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.94	0.94	0.95	0.95	0.92	0.95	0.97	1.02	0.72	0.96	0.93	Project: Garberville Area Reinforcement
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.94	0.94	0.95	0.95	0.92	0.95	0.98	1.02	0.74	0.97	0.93	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.92	NConv	NConv	NConv	NConv	1.02	0.46	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.94	0.94	0.95	0.95	0.92	0.95	0.96	1.02	0.72	0.96	0.93	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.93	0.93	0.93	NConv	0.55	1.02	0.48	0.55	NConv	Project: Garberville Area Reinforcement
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-3:A1:3:_BRDGVILLE 115/60KV TB 1	P3	G-1/N-1	NA	NA	NA	NA	0.7104	NA	NA	NA	NA	NA	NA	Load forecast under review
EUREKA 60 kV	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.93	0.93	0.93	NConv	0.55	1.02	0.48	0.55	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.92	NConv	NConv	NConv	NConv	1.02	0.46	NConv	NConv	Install Redundant Battery
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.00	0.98	1.01	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	1.02	1.02	1.02	1.03	1.03	1.02	1.01	1.03	0.83	1.00	1.02	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	1.02	1.02	1.02	1.03	1.03	1.02	1.02	1.03	0.85	1.02	1.02	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	1.02	1.02	1.02	1.03	1.03	1.02	1.00	1.03	0.83	1.00	1.02	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.00	0.98	1.01	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-3:A1:3:_BRDGVLL 115/60KV TB 1	P3	G-1/N-1	NA	NA	NA	NA	0.8931	NA	NA	NA	NA	NA	NA	Load forecast under review
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.00	0.98	1.01	NConv	0.51	1.03	0.48	0.51	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Install Redundant Battery
EUREKA A 60 kV	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.00	0.98	1.01	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVLL 115KV - RING R3 & R2	P2	Bus/Breaker	1.02	1.02	1.02	1.03	1.02	1.02	1.00	1.03	0.83	1.00	1.02	sensitivity only
	P2-3:A1:19:_BRDGVLL 115KV - RING R1 & R2	P2	Bus/Breaker	1.02	1.02	1.02	1.03	1.03	1.02	1.02	1.03	0.85	1.01	1.02	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVLL 115KV - RING R1 & R3	P2	Bus/Breaker	1.02	1.02	1.02	1.03	1.02	1.02	1.00	1.03	0.83	1.00	1.02	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.00	0.98	1.01	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-3:A1:3:_BRDGVLL 115/60KV TB 1	P3	G-1/N-1	NA	NA	NA	NA	0.8927	NA	NA	NA	NA	NA	NA	Load forecast under review
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.00	0.98	1.01	NConv	0.51	1.03	0.48	0.51	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Install Redundant Battery
	P1-1:A1:9:_HMBOBAYPPA 13.80KV GEN UNIT 3&P1-4:A1:7:_FRT SWRD SVD=V1	P3	G-1/N-1	NA	NA	0.82	NA	NA	NA	NA	NA	NA	NA	NA	continue to monitor
	Base Case	P0	Base Case	0.89	0.90	1.03	0.89	0.92	1.03	0.96	1.02	0.92	0.96	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC_NEWBURG	P1	N-1	0.87	0.88	1.03	0.87	0.91	1.03	0.95	1.02	0.89	0.95	0.88	Project: Garberville Area Reinforcement
	P1-2:A1:19:_HMBOBAYPPC-HMBLT BY 60 kV Line [9999]	P1	N-1	0.89	0.90	1.03	0.89	0.90	1.03	0.96	1.02	0.92	0.96	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:1:_HUMBOLDT-BRIDGEVILLE 115KV [1810]	P1	N-1	0.90	0.92	1.03	0.90	0.89	1.03	0.99	1.03	0.94	0.99	0.92	continue to monitor
	P1-2:A1:22:_RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA_SWNS FLT	P1	N-1	0.88	0.90	1.03	0.88	0.92	1.03	0.95	1.02	0.92	0.95	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:23:_RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA_SWNS FLT (2)	P1	N-1	0.88	0.90	1.03	0.88	0.92	1.03	0.95	1.02	0.92	0.95	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:24:_BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDGVLL_FRUTLDT	P1	N-1	0.45	0.42	NA	0.43	0.42	NA	0.55	1.03	0.48	0.55	0.43	Project: Garberville Area Reinforcement
	P1-2:A1:2:_HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P1	N-1	0.89	0.90	1.03	0.89	0.91	1.03	0.95	1.02	0.91	0.95	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.87	0.87	1.03	0.87	0.87	NConv	0.93	1.00	0.84	0.92	0.87	Project: Garberville Area Reinforcement
	P1-2:A1:4:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800]	P1	N-1	0.88	0.89	1.03	0.85	0.84	0.98	0.96	1.02	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P1-2:A1:5:_KEKAWAKA-GRBRVLL-LYTNVLL 60KV [0]	P1	N-1	0.72	0.67	NA	0.73	0.78	NA	0.92	1.02	0.78	0.92	0.66	Project: Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVLL 115/60KV TB 1	P1	N-1	0.78	0.77	NA	0.80	0.72	NA	0.93	1.03	0.82	0.93	0.77	Project: Garberville Area Reinforcement
	P1-3:A1:4:_HMBOBAYPPB 115/13.8KV TB 1	P1	N-1	0.88	0.89	1.03	0.85	0.84	0.98	0.96	1.02	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P1-3:A1:8:_HMBOBAYPPC 60/13.8KV TB 2	P1	N-1	0.89	0.90	1.03	0.89	0.90	1.03	0.96	1.02	0.92	0.96	0.90	Project: Garberville Area Reinforcement
	P1-4:A1:4:_HUMBOLDT 60.00KV ID=7H & HUMBOLDT 60.00KV ID=5H & HUMBOLDT 60.00KV ID=1H & HUMBOLDT 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.90	0.92	1.03	0.90	0.88	1.03	0.97	1.03	0.93	0.97	0.92	Project: Garberville Area Reinforcement
	P1-4:A1:5:_GRBRVLL 60.00KV ID=8H & GRBRVLL 60.00KV ID=7H & GRBRVLL 60.00KV ID=5H & GRBRVLL 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.82	0.80	0.92	0.81	0.84	0.89	0.88	0.96	0.84	0.88	0.80	Project: Garberville Area Reinforcement
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	NA	NA	0.84	NA	NA	0.80	NA	NA	NA	NA	NA	continue to monitor

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
FRT SWRD 60 kV	P2-1:A1:2:_BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.87	0.88	1.03	0.87	0.86	NConv	0.93	1.00	0.84	0.92	0.88	Project: Garberville Area Reinforcement
	P2-1:A1:3:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800] (HMBOBAYPPB-HUMBOLDT)	P2	Bus/Breaker	0.88	0.89	1.03	0.85	0.84	0.98	0.96	1.02	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P2-1:A1:52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	0.88	0.89	1.01	0.88	0.90	0.93	0.95	1.02	0.91	0.95	0.89	Project: Garberville Area Reinforcement
	P2-2:A1:11:_HMBOBAYPPB 13.8KV SECTION 1D	P2	Bus/Breaker	0.88	0.89	1.03	0.85	0.84	0.98	0.96	1.02	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P2-2:A1:13:_HMBOBAYPPC 13.8KV SECTION 1D	P2	Bus/Breaker	0.89	0.90	1.03	0.89	0.90	1.03	0.96	1.02	0.92	0.96	0.90	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.03	0.87	0.82	NConv	0.81	1.03	0.70	0.81	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2:_LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.87	0.87	1.03	0.87	0.87	NConv	0.93	1.00	0.84	0.92	0.87	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.77	0.74	NA	0.76	0.61	NA	0.90	1.03	0.58	0.90	0.74	Project: Garberville Area Reinforcement
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.77	0.74	NA	0.76	0.61	NA	0.91	1.03	0.58	0.91	0.74	Project: Garberville Area Reinforcement
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	1.03	NConv	NConv	NConv	NConv	1.03	0.69	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.77	0.74	NA	0.76	0.61	NA	0.90	1.03	0.57	0.89	0.74	Project: Garberville Area Reinforcement
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.03	0.87	0.82	NConv	0.81	1.03	0.70	0.81	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.03	0.87	0.82	NConv	0.81	1.03	0.70	0.81	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.03	NConv	NConv	NConv	NConv	1.03	0.69	NConv	NConv	Install Redundant Battery
	P5-5C:A1:2:_BRIDGEVILLE 115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	0.45	0.42	NA	0.43	0.42	NA	0.55	1.03	0.48	0.55	0.42	Install Redundant Battery
	P7-1:A1:2:_HUMBOLDT BAY & HUMBOLDT BAY LINES	P7	DCTL	0.88	NA	1.03	0.85	NA	NA	0.96	NA	0.88	0.96	NA	Project: Garberville Area Reinforcement
	P7-1:A1:6:_ARCATA-HUMBOLDT & FAIRHAVEN-HUMBOLDT & HUMBOLDT #1 LINES	P7	DCTL	0.88	NA	1.03	0.88	NA	NA	0.96	NA	0.92	0.96	NA	Project: Garberville Area Reinforcement
	P1-1:A1:9:_HMBOBAYPPA 13.80KV GEN UNIT 3&P1-4:A1:7:_FRT SWRD SVD=V1	P3	G-1/N-1	NA	NA	0.83	NA	NA	NA	NA	NA	NA	NA	NA	continue to monitor
	Base Case	P0	Base Case	0.90	0.90	0.98	0.89	0.92	0.98	0.95	1.01	0.92	0.95	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC NEWBURG	P1	N-1	0.88	0.88	0.98	0.87	0.91	0.98	0.94	1.01	0.89	0.94	0.88	Project: Garberville Area Reinforcement
	P1-2:A1:1:_HUMBOLDT-BRIDGEVILLE 115KV [1810]	P1	N-1	0.91	0.91	0.98	0.90	0.89	0.98	0.99	1.03	0.95	0.99	0.91	Load forecast under review
	P1-2:A1:22:_RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA SWNS FLT	P1	N-1	0.89	0.89	0.98	0.88	0.92	0.98	0.95	1.01	0.92	0.95	0.89	Project: Garberville Area Reinforcement
	P1-2:A1:23:_RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA SWNS FLT (2)	P1	N-1	0.89	0.89	0.98	0.88	0.92	0.98	0.95	1.01	0.92	0.95	0.89	Project: Garberville Area Reinforcement
	P1-2:A1:24:_BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDGVILLE FRUTLDT	P1	N-1	0.44	0.40	NA	0.41	0.40	NA	0.54	1.03	0.48	0.54	0.41	Project: Garberville Area Reinforcement
	P1-2:A1:2:_HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P1	N-1	0.90	0.89	0.98	0.89	0.91	0.97	0.94	1.01	0.91	0.94	0.89	Project: Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.88	0.87	0.98	0.87	0.87	NConv	0.92	0.99	0.84	0.92	0.87	Project: Garberville Area Reinforcement
	P1-2:A1:4:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800]	P1	N-1	0.88	0.89	0.98	0.85	0.84	0.92	0.95	1.01	0.89	0.95	0.89	Project: Garberville Area Reinforcement
	P1-2:A1:5:_KEKAWAKA-GRBRVILLE-LYTNVILLE 60KV [0]	P1	N-1	0.75	0.71	NA	0.76	0.81	NA	0.92	1.01	0.81	0.92	0.70	Project: Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVILLE 115/60KV TB 1	P1	N-1	0.79	0.77	NA	0.79	0.72	NA	0.92	1.03	0.82	0.92	0.77	Project: Garberville Area Reinforcement
	P1-3:A1:4:_HMBOBAYPPB 115/13.8KV TB 1	P1	N-1	0.88	0.89	0.98	0.85	0.84	0.92	0.95	1.01	0.89	0.95	0.89	Project: Garberville Area Reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
FRUITLND 60 kV	P1-4:A1:4:_HUMBOLDT 60.00KV ID=7H & HUMBOLDT 60.00KV ID=5H & HUMBOLDT 60.00KV ID=1H & HUMBOLDT 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.91	0.92	0.98	0.90	0.89	0.98	0.96	1.03	0.94	0.96	0.92	Project: Garberville Area Reinforcement
	P1-4:A1:5:_GRBRVLE 60.00KV ID=8H & GRBRVLE 60.00KV ID=7H & GRBRVLE 60.00KV ID=5H & GRBRVLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.84	0.82	0.89	0.82	0.85	0.86	0.89	0.96	0.86	0.89	0.82	Project: Garberville Area Reinforcement
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	NA	NA	0.85	NA	NA	0.81	NA	NA	NA	NA	NA	continue to monitor
	P2-1:A1:2:_BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.88	0.88	0.98	0.87	0.87	NConv	0.92	0.99	0.85	0.92	0.88	Project: Garberville Area Reinforcement
	P2-1:A1:3:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800] (HMBOBAYPPB-HUMBOLDT)	P2	Bus/Breaker	0.88	0.89	0.98	0.85	0.84	0.92	0.95	1.01	0.89	0.95	0.89	Project: Garberville Area Reinforcement
	P2-1:A1:52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	0.89	0.89	0.94	0.88	0.91	0.88	0.95	1.01	0.92	0.95	0.89	Project: Garberville Area Reinforcement
	P2-2:A1:11:_HMBOBAYPPB 13.8KV SECTION 1D	P2	Bus/Breaker	0.88	0.89	0.98	0.85	0.84	0.92	0.95	1.01	0.89	0.95	0.89	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.98	0.87	0.82	NConv	0.80	1.03	0.70	0.80	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2:_LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.88	0.87	0.98	0.87	0.87	NConv	0.92	0.99	0.84	0.92	0.87	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.78	0.74	NA	0.76	0.62	NA	0.90	1.03	0.58	0.89	0.74	Project: Garberville Area Reinforcement
	P2-3:A1:19:_BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.78	0.74	NA	0.76	0.62	NA	0.90	1.03	0.59	0.90	0.74	Project: Garberville Area Reinforcement
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.03	0.69	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.78	0.74	NA	0.76	0.62	NA	0.90	1.03	0.58	0.89	0.74	Project: Garberville Area Reinforcement
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.98	0.87	0.82	NConv	0.80	1.03	0.70	0.80	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.98	0.87	0.82	NConv	0.80	1.03	0.70	0.80	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.03	0.69	NConv	NConv	Install Redundant Battery
	P5-5C:A1:2:_BRIDGEVILLE 115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	0.44	0.40	NA	0.41	0.40	NA	0.54	1.03	0.48	0.54	0.41	Install Redundant Battery
	P7-1:A1:2:_HUMBOLDT BAY & HUMBOLDT BAY LINES	P7	DCTL	0.88	NA	0.98	0.85	NA	NA	0.95	NA	0.88	0.95	NA	Project: Garberville Area Reinforcement
	P7-1:A1:6:_ARCATA-HUMBOLDT & FAIRHAVEN-HUMBOLDT & HUMBOLDT #1 LINES	P7	DCTL	0.90	NA	0.98	0.88	NA	NA	0.95	NA	0.92	0.95	NA	Project: Garberville Area Reinforcement
	P1-1:A1:9:_HMBOBAYPPA 13.80KV GEN UNIT 3&P1-4:A1:7:_FRT SWRD SVD=V1	P3	G-1/N-1	NA	NA	0.81	NA	NA	NA	NA	NA	NA	NA	NA	Project: Garberville Area Reinforcement
	Base Case	P0	Base Case	0.89	0.91	1.01	0.88	0.91	1.01	0.96	1.03	0.92	0.96	0.91	Project: Garberville Area Reinforcement
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2	P1	N-1	0.89	0.91	1.01	0.88	0.91	1.01	0.96	1.03	0.90	0.96	0.91	Project: Garberville Area Reinforcement
	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC, NEWBURG	P1	N-1	0.87	0.89	1.01	0.87	0.90	1.01	0.96	1.03	0.89	0.96	0.88	Project: Garberville Area Reinforcement
	P1-2:A1:19:_HMBOBAYPPC-HMBLT BY 60 kV Line [9999]	P1	N-1	0.89	0.91	1.01	0.88	0.89	1.01	0.96	1.03	0.92	0.96	0.91	Project: Garberville Area Reinforcement
	P1-2:A1:1:_HUMBOLDT-BRIDGEVILLE 115KV [1810]	P1	N-1	0.90	0.92	1.01	0.90	0.88	1.01	0.99	1.03	0.94	0.99	0.92	Project: Garberville Area Reinforcement
	P1-2:A1:22:_RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA SWNS FLT	P1	N-1	0.88	0.90	1.01	0.88	0.91	1.01	0.96	1.03	0.92	0.96	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:23:_RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA SWNS FLT (2)	P1	N-1	0.88	0.90	1.01	0.88	0.91	1.01	0.96	1.03	0.92	0.96	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:24:_BRIDGEVILLE-GARBerville 60KV [6220] MOAS OPENED ON BRDGVLE FRUTLDT	P1	N-1	0.47	0.44	NA	0.45	0.44	NA	0.57	1.03	0.50	0.57	0.45	Project: Garberville Area Reinforcement
	P1-2:A1:25:_BRIDGEVILLE-GARBerville 60KV [6220] MOAS OPENED ON FTSWRDJT GRBRVLE	P1	N-1	0.54	0.54	NA	0.53	0.52	NA	0.95	1.03	0.58	0.95	0.54	Project: Garberville Area Reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
GRBRVLE 60 KV	P1-2:A1:2:_HUMBOLDT-TRINITY 115KV [1820] MOAS OPENED ON TRINITY_JESSTAP	P1	N-1	0.89	0.90	1.01	0.88	0.90	1.00	0.96	1.03	0.91	0.96	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.87	0.87	1.00	0.87	0.85	NConv	0.93	1.02	0.83	0.93	0.87	Project: Garberville Area Reinforcement
	P1-2:A1:4:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800]	P1	N-1	0.87	0.89	1.01	0.85	0.83	0.95	0.96	1.03	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P1-2:A1:5:_KEKAWAKA-GRBRVLE-LYTNVLE 60KV [0]	P1	N-1	0.67	0.63	NA	0.69	0.75	NA	0.92	1.03	0.75	0.92	0.62	Project: Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	0.78	0.77	NA	0.79	0.72	NA	0.93	1.03	0.82	0.93	0.77	Project: Garberville Area Reinforcement
	P1-3:A1:4:_HMBOBAYPPB 115/13.8KV TB 1	P1	N-1	0.87	0.89	1.01	0.85	0.83	0.95	0.96	1.03	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P1-3:A1:8:_HMBOBAYPPC 60/13.8KV TB 2	P1	N-1	0.89	0.91	1.01	0.88	0.89	1.01	0.96	1.03	0.92	0.96	0.91	Project: Garberville Area Reinforcement
	P1-4:A1:4:_HUMBOLDT 60.00KV ID=7H & HUMBOLDT 60.00KV ID=5H & HUMBOLDT 60.00KV ID=1H & HUMBOLDT 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.90	0.92	1.01	0.89	0.88	1.01	0.97	1.03	0.93	0.97	0.92	Project: Garberville Area Reinforcement
	P1-4:A1:5:_GRBRVLE 60.00KV ID=8H & GRBRVLE 60.00KV ID=7H & GRBRVLE 60.00KV ID=5H & GRBRVLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.79	0.78	0.85	0.78	0.81	0.82	0.87	0.95	0.81	0.87	0.78	Load forecast under review
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	NA	NA	0.83	NA	NA	0.78	NA	NA	NA	NA	NA	Load forecast under review
	P2-1:A1:2:_BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.87	0.87	1.01	0.87	0.85	NConv	0.93	1.02	0.84	0.93	0.87	Project: Garberville Area Reinforcement
	P2-1:A1:3:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800] (HMBOBAYPPB-HUMBOLDT)	P2	Bus/Breaker	0.87	0.89	1.01	0.85	0.83	0.95	0.96	1.03	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P2-1:A1:52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	0.88	0.89	0.97	0.88	0.90	0.90	0.96	1.03	0.91	0.96	0.89	Project: Garberville Area Reinforcement
	P2-2:A1:11:_HMBOBAYPPB 13.8KV SECTION 1D	P2	Bus/Breaker	0.87	0.89	1.01	0.85	0.83	0.95	0.96	1.03	0.88	0.96	0.89	Project: Garberville Area Reinforcement
	P2-2:A1:13:_HMBOBAYPPC 13.8KV SECTION 1D	P2	Bus/Breaker	0.89	0.91	1.01	0.88	0.89	1.01	0.96	1.03	0.92	0.96	0.91	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.87	0.81	NConv	0.82	1.03	0.71	0.82	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2:_LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.87	0.87	1.00	0.87	0.85	NConv	0.93	1.02	0.83	0.93	0.87	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.76	0.73	NA	0.75	0.59	NA	0.90	1.03	0.58	0.90	0.73	Project: Garberville Area Reinforcement
	P2-3:A1:19:_BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.76	0.73	NA	0.75	0.59	NA	0.91	1.03	0.58	0.91	0.73	Project: Garberville Area Reinforcement
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	1.01	NConv	NConv	NConv	NConv	1.03	0.70	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.76	0.73	NA	0.75	0.59	NA	0.90	1.03	0.58	0.90	0.73	Project: Garberville Area Reinforcement
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.87	0.81	NConv	0.82	1.03	0.71	0.82	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.87	0.81	NConv	0.82	1.03	0.71	0.82	NConv	Project: Garberville Area Reinforcement
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	NConv	NConv	NConv	NConv	1.03	0.70	NConv	NConv	Project: Garberville Area Reinforcement
	P5-5C:A1:2:_BRIDGEVILLE 115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	0.47	0.44	NA	0.45	0.44	NA	0.57	1.03	0.50	0.57	0.45	Project: Garberville Area Reinforcement
	P7-1:A1:2:_HUMBOLDT BAY & HUMBOLDT BAY LINES	P7	DCTL	0.87	NA	1.01	0.85	NA	NA	0.96	NA	0.88	0.96	NA	Project: Garberville Area Reinforcement
	P7-1:A1:6:_ARCATA-HUMBOLDT & FAIRHAVEN-HUMBOLDT & HUMBOLDT #1 LINES	P7	DCTL	0.88	NA	1.01	0.87	NA	NA	0.96	NA	0.92	0.96	NA	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.02	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.01	1.03	0.85	1.01	1.03	sensitivity only
	P2-3:A1:19:_BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.03	1.03	0.86	1.03	1.03	sensitivity only

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
HARRIS 60 kV	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.01	1.03	0.85	1.01	1.03	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.02	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.98	1.02	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
HARRISST 60 kV	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.00	0.98	1.02	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.01	1.03	0.85	1.01	1.03	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.03	1.03	0.86	1.03	1.03	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.01	1.03	0.85	1.01	1.03	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.00	0.98	1.02	NConv	0.51	1.03	0.48	0.51	NConv	Project: Garberville Area Reinforcement
HMBLT BY 60 kV	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.00	0.98	1.02	NConv	0.51	1.03	0.48	0.51	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Install Redundant Battery
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.00	1.03	0.82	1.00	1.01	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.01	1.03	0.83	1.01	1.01	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	1.00	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.00	1.03	0.81	1.00	1.01	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
HMBOBAYPPA 60 kV	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-3:A1:3:_BRDGVILLE 115/60KV TB 1	P3	G-1/N-1	NA	NA	NA	NA	0.87	NA	NA	NA	NA	NA	NA	Load forecast under review
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.00	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.00	1.03	0.82	1.00	1.01	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.01	1.03	0.83	1.01	1.01	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	1.01	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.00	1.03	0.81	1.00	1.01	sensitivity only
HMBOBAYPPA 60 kV	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2&P1-3:A1:3:_BRDGVILLE 115/60KV TB 1	P3	G-1/N-1	NA	NA	NA	NA	0.87	NA	NA	NA	NA	NA	NA	Load forecast under review
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.98	0.98	0.99	0.98	0.99	0.99	0.96	0.96	0.81	0.95	0.98	sensitivity only

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
HMBOBAYPPB 115 kV	P2-3:A1:19: BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.98	0.98	0.99	0.98	0.99	0.99	0.97	0.96	0.82	0.97	0.98	sensitivity only
	P2-3:A1:20: BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.98	0.98	0.99	0.98	0.99	0.99	0.96	0.96	0.81	0.95	0.98	sensitivity only
HMBOBAYPPC 60 kV	P2-2:A1:1: HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18: BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.00	1.03	0.82	1.00	1.01	sensitivity only
	P2-3:A1:19: BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.01	1.03	0.83	1.01	1.01	sensitivity only
	P2-3:A1:1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	1.01	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20: BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	1.01	1.01	1.03	1.02	1.02	1.02	1.00	1.03	0.81	1.00	1.01	sensitivity only
	P2-3:A1:2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P1-1:A1:2: HRCGENSAB 13.80KV GEN UNIT 2&P1-3:A1:3: BRDGVLE 115/60KV TB 1	P3	G-1/N-1	NA	NA	NA	NA	0.87	NA	NA	NA	NA	NA	NA	Load forecast under review
	P5-5A:A1:1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.98	1.01	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P5-5C:A1:1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
HOOPA 60 kV	P1-2:A1:14: HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	0.68	1.02	1.02	0.73	1.02	1.02	0.84	1.03	0.80	0.84	1.02	Project: Garberville Area Reinforcement
	P1-2:A1:3: BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.93	1.02	1.02	0.95	1.02	NConv	0.96	1.03	0.90	0.96	1.02	continue to monitor
	P2-1:A1:2: BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.93	1.02	1.02	0.95	1.02	NConv	0.96	1.03	0.90	0.95	1.02	continue to monitor
	P2-2:A1:1: HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.88	0.96	NConv	0.48	1.03	0.45	0.48	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2: LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.93	1.02	1.02	0.95	1.02	NConv	0.96	1.03	0.89	0.96	1.02	continue to monitor
	P2-3:A1:18: BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.93	1.02	1.02	0.95	1.01	1.02	0.95	1.03	0.78	0.94	1.02	sensitivity only
	P2-3:A1:19: BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.93	1.02	1.02	0.95	1.02	1.02	0.96	1.03	0.79	0.96	1.02	sensitivity only
	P2-3:A1:1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.97	NConv	NConv	NConv	NConv	1.03	0.40	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20: BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.93	1.02	1.02	0.95	1.01	1.02	0.95	1.03	0.77	0.94	1.02	sensitivity only
	P2-3:A1:2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.88	0.96	NConv	0.48	1.03	0.45	0.48	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.88	0.96	NConv	0.48	1.03	0.45	0.48	NConv	Project: Garberville Area Reinforcement
	P5-5C:A1:1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.97	NConv	NConv	NConv	NConv	1.03	0.40	NConv	NConv	Project: Garberville Area Reinforcement
HRCGEN 60 kV	P1-1:A1:1: HRCGENSAB 13.80KV GEN UNIT 1	P1	N-1	0.94	0.94	0.94	0.95	0.96	0.89	0.97	1.00	0.95	0.97	0.94	continue to monitor
	P1-1:A1:2: HRCGENSAB 13.80KV GEN UNIT 2	P1	N-1	0.94	0.94	0.94	0.95	0.96	0.89	0.97	1.00	0.85	0.97	0.94	continue to monitor
	P1-2:A1:16: HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC_NEWBURG	P1	N-1	0.89	0.88	0.96	0.89	0.90	0.94	0.94	1.00	0.81	0.94	0.88	Project: Garberville Area Reinforcement
	P1-2:A1:3: BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.95	0.95	0.95	0.96	0.96	NConv	0.97	1.01	0.89	0.97	0.95	continue to monitor
	P2-2:A1:1: HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.96	0.93	0.91	NConv	0.66	1.02	0.52	0.66	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2: LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.95	0.95	0.95	0.96	0.96	NConv	0.97	1.01	0.89	0.97	0.95	continue to monitor
	P2-3:A1:18: BRDGVLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.92	0.92	NA	0.93	0.89	NA	0.96	1.03	0.68	0.96	0.92	Load forecast under review
	P2-3:A1:19: BRDGVLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.92	0.92	NA	0.93	0.89	NA	0.97	1.03	0.69	0.97	0.92	Load forecast under review
	P2-3:A1:1: HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.02	0.50	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20: BRDGVLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.92	0.92	NA	0.93	0.89	NA	0.96	1.03	0.67	0.96	0.92	Load forecast under review
	P2-3:A1:2: HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.96	0.93	0.91	NConv	0.66	1.02	0.52	0.66	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1: HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	0.93	0.91	NConv	0.66	1.02	0.52	0.66	NConv	Project: Garberville Area Reinforcement
	P5-5C:A1:1: HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.02	0.50	NConv	NConv	Project: Garberville Area Reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
HUMBOLDT 115 kV	P2-3:A1:18_ BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.96	0.96	0.98	0.96	0.98	0.97	0.94	0.96	0.79	0.94	0.96	sensitivity only
	P2-3:A1:19_ BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.96	0.96	0.98	0.96	0.98	0.97	0.95	0.96	0.81	0.95	0.96	sensitivity only
	P2-3:A1:20_ BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.96	0.96	0.98	0.96	0.98	0.97	0.94	0.96	0.79	0.94	0.96	sensitivity only
HUMBOLDT 60 kV	P2-2:A1:1_ HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.02	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18_ BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.02	1.03	0.85	1.01	1.03	sensitivity only
	P2-3:A1:19_ BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.03	1.03	0.86	1.03	1.03	sensitivity only
	P2-3:A1:1_ HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20_ BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	1.03	1.03	1.03	1.03	1.04	1.03	1.02	1.03	0.85	1.01	1.03	sensitivity only
	P2-3:A1:2_ HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.98	1.02	NConv	0.52	1.03	0.48	0.52	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1_ HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.98	1.02	NConv	0.52	1.03	0.48	0.52	NConv	Install Redundant Relay
	P5-5C:A1:1_ HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.99	NConv	NConv	NConv	NConv	1.03	0.45	NConv	NConv	Install Redundant Battery
KEKAWAKA 60 kV	Base Case	P0	Base Case	0.90	0.92	0.96	0.90	0.92	0.97	0.97	1.03	0.93	0.97	0.92	Project: Garberville Area Reinforcement
	P1-2:A1:16_ HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC NEWBURG	P1	N-1	0.88	0.90	0.96	0.88	0.91	0.97	0.96	1.03	0.90	0.96	0.90	Project: Garberville Area Reinforcement
	P1-2:A1:1_ HUMBOLDT-BRIDGEVILLE 115KV [1810]	P1	N-1	0.91	0.93	0.96	0.91	0.89	0.97	0.99	1.03	0.94	0.99	0.93	Load forecast under review
	P1-2:A1:22_ RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA SWNS FLT	P1	N-1	0.89	0.92	0.96	0.90	0.92	0.97	0.96	1.03	0.93	0.96	0.92	Project: Garberville Area Reinforcement
	P1-2:A1:23_ RIO DELL JCT-BRIDGEVILLE 60KV [7850] MOAS OPENED ON CARLOTTA SWNS FLT (2)	P1	N-1	0.89	0.91	0.96	0.90	0.92	0.97	0.96	1.03	0.93	0.96	0.91	Project: Garberville Area Reinforcement
	P1-2:A1:24_ BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON BRDGVILLE FRUTLDT	P1	N-1	0.52	0.50	0.96	0.51	0.50	0.97	0.61	1.03	0.55	0.61	0.50	Project: Garberville Area Reinforcement
	P1-2:A1:25_ BRIDGEVILLE-GARBERVILLE 60KV [6220] MOAS OPENED ON FTSWRDIT GRBRVLE	P1	N-1	0.58	0.58	0.96	0.58	0.57	0.97	0.95	1.03	0.62	0.95	0.58	Project: Garberville Area Reinforcement
	P1-2:A1:3_ BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.88	0.88	0.96	0.88	0.86	NConv	0.93	1.01	0.84	0.93	0.88	Project: Garberville Area Reinforcement
	P1-2:A1:4_ HUMBOLDT BAY-HUMBOLDT #1 115KV [1800]	P1	N-1	0.89	0.90	0.96	0.86	0.84	0.97	0.97	1.03	0.89	0.97	0.90	Project: Garberville Area Reinforcement
	P1-3:A1:3_ BRDGVILLE 115/60KV TB 1	P1	N-1	0.80	0.79	0.96	0.82	0.74	0.97	0.94	1.03	0.83	0.94	0.79	Project: Garberville Area Reinforcement
	P1-3:A1:4_ HMBOBAYPPB 115/13.8KV TB 1	P1	N-1	0.89	0.90	0.96	0.86	0.84	0.97	0.97	1.03	0.89	0.97	0.90	Project: Garberville Area Reinforcement
	P1-4:A1:4_ HUMBOLDT 60.00KV ID=7H & HUMBOLDT 60.00KV ID=5H & HUMBOLDT 60.00KV ID=1H & HUMBOLDT 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.91	0.93	0.96	0.91	0.89	0.97	0.97	1.03	0.94	0.97	0.93	Load forecast under review
	P1-4:A1:5_ GRBRVLE 60.00KV ID=8H & GRBRVLE 60.00KV ID=7H & GRBRVLE 60.00KV ID=5H & GRBRVLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	0.82	0.81	0.96	0.81	0.83	0.97	0.89	0.96	0.84	0.89	0.80	Project: Garberville Area Reinforcement
	P2-1:A1:2_ BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.88	0.88	0.96	0.88	0.86	NConv	0.93	1.01	0.85	0.93	0.88	Project: Garberville Area Reinforcement
	P2-1:A1:3_ HUMBOLDT BAY-HUMBOLDT #1 115KV [1800] (HMBOBAYPPB-HUMBOLDT)	P2	Bus/Breaker	0.89	0.90	0.96	0.86	0.84	0.97	0.97	1.03	0.89	0.97	0.90	Project: Garberville Area Reinforcement
	P2-1:A1:52_ PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIACT)	P2	Bus/Breaker	0.89	0.90	0.96	0.89	0.91	0.97	0.96	1.03	0.92	0.96	0.90	Project: Garberville Area Reinforcement
	P2-2:A1:11_ HMBOBAYPPB 13.8KV SECTION 1D	P2	Bus/Breaker	0.89	0.90	0.96	0.86	0.85	0.97	0.97	1.03	0.90	0.97	0.90	Project: Garberville Area Reinforcement
	P2-2:A1:1_ HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.96	0.88	0.83	NConv	0.84	1.03	0.74	0.84	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2_ LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.88	0.88	0.96	0.88	0.86	NConv	0.93	1.01	0.84	0.93	0.88	Project: Garberville Area Reinforcement
	P2-3:A1:18_ BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.78	0.75	0.96	0.78	0.62	0.97	0.91	1.03	0.62	0.90	0.75	Project: Garberville Area Reinforcement
	P2-3:A1:19_ BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.78	0.75	0.96	0.78	0.62	0.97	0.91	1.03	0.62	0.91	0.75	Project: Garberville Area Reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.03	0.74	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.78	0.75	0.96	0.78	0.62	0.97	0.91	1.03	0.62	0.90	0.75	Project: Garberville Area Reinforcement
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.96	0.88	0.83	NConv	0.84	1.03	0.74	0.84	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	0.88	0.83	NConv	0.84	1.03	0.74	0.84	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.03	0.74	NConv	NConv	Install Redundant Battery
	P5-5C:A1:2:_BRIDGEVILLE 115-60KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	0.52	0.50	0.96	0.51	0.50	0.97	0.61	1.03	0.55	0.61	0.50	Install Redundant Battery
	P7-1:A1:2:_HUMBOLDT BAY & HUMBOLDT BAY LINES	P7	DCTL	0.89	NA	0.96	0.86	NA	NA	0.97	NA	0.89	0.97	NA	Project: Garberville Area Reinforcement
	P7-1:A1:6:_ARCATA-HUMBOLDT & FAIRHAVEN-HUMBOLDT & HUMBOLDT #1 LINES	P7	DCTL	0.90	NA	0.96	0.89	NA	NA	0.97	NA	0.93	0.97	NA	Project: Garberville Area Reinforcement
LOW GAP1 115 KV	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.98	0.96	0.92	NConv	0.87	1.05	0.83	0.87	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.05	0.82	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.98	0.96	0.92	NConv	0.87	1.05	0.83	0.87	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.98	0.96	0.92	NConv	0.87	1.05	0.83	0.87	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.05	0.82	NConv	NConv	Install Redundant Battery
LYTNVILLE 60 KV	P1-1:A1:9:_HMBOBAYPPA 13.80KV GEN UNIT 3&P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P3	G-1/N-1	0.90	0.89	NA	NA	NA	NA	NA	NA	NA	NA	NA	Project: Garberville Area Reinforcement
MPLE CRK 60 KV	P1-2:A1:14:_HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	0.76	1.02	1.02	0.79	1.02	1.02	0.88	1.03	0.86	0.88	1.03	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.93	0.97	NConv	0.53	1.03	0.51	0.53	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.99	1.02	1.02	1.00	1.02	1.03	0.99	1.03	0.84	0.98	1.02	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.99	1.02	1.02	1.00	1.02	1.03	1.00	1.03	0.85	1.00	1.02	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.97	NConv	NConv	NConv	NConv	1.03	0.46	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.99	1.02	1.02	1.00	1.02	1.03	0.99	1.03	0.84	0.98	1.02	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.93	0.97	NConv	0.53	1.03	0.51	0.53	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.93	0.97	NConv	0.53	1.03	0.51	0.53	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.97	NConv	NConv	NConv	NConv	1.03	0.46	NConv	NConv	Install Redundant Battery
NEWBURG 60 KV	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC_NEWBURG	P1	N-1	0.86	0.85	NA	0.86	0.87	NA	0.92	0.98	0.80	0.92	0.85	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.91	0.92	0.91	NConv	0.58	1.01	0.49	0.58	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.93	0.92	0.93	0.93	0.90	0.93	0.96	1.02	0.71	0.96	0.92	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.93	0.92	0.93	0.93	0.90	0.93	0.97	1.02	0.72	0.97	0.92	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.90	NConv	NConv	NConv	NConv	1.01	0.47	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.93	0.92	0.93	0.93	0.90	0.93	0.96	1.02	0.70	0.95	0.92	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.91	0.92	0.91	NConv	0.58	1.01	0.49	0.58	NConv	Project: Garberville Area Reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.91	0.92	0.91	NConv	0.58	1.01	0.49	0.58	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.90	NConv	NConv	NConv	NConv	1.01	0.47	NConv	NConv	Install Redundant Battery
PCLUMBER 60 KV	P1-1:A1:1:_HRCGENSAB 13.80KV GEN UNIT 1	P1	N-1	0.95	0.95	0.94	0.95	0.97	0.89	0.97	1.00	0.96	0.97	0.95	continue to monitor
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2	P1	N-1	0.95	0.95	0.94	0.95	0.97	0.89	0.97	1.00	0.90	0.97	0.95	continue to monitor
	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC NEWBURG	P1	N-1	0.88	0.87	0.95	0.88	0.89	0.94	0.93	0.99	0.82	0.93	0.87	Project: Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.95	0.95	0.94	0.95	0.96	NConv	0.97	1.00	0.90	0.97	0.95	continue to monitor
	P1-3:A1:3:_BRDGVILLE 115/60KV TB 1	P1	N-1	0.91	0.90	NA	0.92	0.90	NA	0.97	1.03	0.91	0.97	0.90	Load forecast under review
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	NA	NA	0.92	NA	NA	0.89	NA	NA	NA	NA	NA	continue to monitor
	P2-1:A1:52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	0.92	0.91	0.78	0.92	0.94	0.72	0.95	0.99	0.93	0.95	0.92	continue to monitor
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.95	0.92	0.90	NConv	0.63	1.02	0.53	0.63	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2:_LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.95	0.95	0.94	0.95	0.96	NConv	0.97	1.00	0.90	0.97	0.95	continue to monitor
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.91	0.90	NA	0.91	0.87	NA	0.95	1.03	0.68	0.95	0.90	Load forecast under review
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.91	0.90	NA	0.91	0.87	NA	0.96	1.03	0.70	0.96	0.90	Load forecast under review
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.95	NConv	NConv	NConv	NConv	1.02	0.51	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.91	0.90	NA	0.91	0.87	NA	0.95	1.02	0.68	0.95	0.90	Load forecast under review
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.95	0.92	0.90	NConv	0.63	1.02	0.53	0.63	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.95	0.92	0.90	NConv	0.63	1.02	0.53	0.63	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.95	NConv	NConv	NConv	NConv	1.02	0.51	NConv	NConv	Install Redundant Battery
RDGE CBN 60 KV	P1-2:A1:14:_HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	0.82	1.02	1.02	0.83	1.02	1.01	0.92	1.03	0.89	0.92	1.02	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.00	0.93	0.93	NConv	0.61	1.03	0.60	0.61	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.99	1.01	1.01	1.00	0.99	1.03	0.98	1.03	0.86	0.98	1.01	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.99	1.01	1.01	1.00	0.99	1.03	0.99	1.03	0.87	0.99	1.01	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.94	NConv	NConv	NConv	NConv	1.02	0.51	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.99	1.01	1.01	0.99	0.99	1.03	0.98	1.03	0.86	0.98	1.01	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.00	0.93	0.93	NConv	0.61	1.03	0.60	0.61	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.00	0.93	0.93	NConv	0.61	1.03	0.60	0.61	NConv	Install Redundant Relay
RIO DELL 60 KV	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.94	NConv	NConv	NConv	NConv	1.02	0.51	NConv	NConv	Install Redundant Battery
	P1-1:A1:1:_HRCGENSAB 13.80KV GEN UNIT 1	P1	N-1	0.94	0.94	0.93	0.95	0.96	0.88	0.97	1.00	0.94	0.97	0.94	continue to monitor
	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2	P1	N-1	0.94	0.94	0.93	0.95	0.96	0.88	0.96	1.00	0.85	0.96	0.94	continue to monitor
	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC NEWBURG	P1	N-1	0.88	0.88	0.96	0.89	0.90	0.93	0.94	1.00	0.81	0.94	0.88	Project: Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.95	0.95	0.95	0.96	0.96	NConv	0.97	1.01	0.89	0.97	0.95	continue to monitor
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	NA	NA	0.93	NA	NA	0.90	NA	NA	NA	NA	NA	continue to monitor
	P2-1:A1:2:_BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.95	0.95	0.95	0.96	0.96	NConv	0.97	1.01	0.90	0.97	0.95	continue to monitor
	P2-1:A1:52:_PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIAJCT)	P2	Bus/Breaker	0.89	0.89	0.74	0.90	0.91	0.68	0.94	0.99	0.90	0.94	0.89	Project: Garberville Area Reinforcement
	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.96	0.93	0.91	NConv	0.66	1.02	0.52	0.66	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2:_LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.95	0.95	0.95	0.96	0.96	NConv	0.97	1.01	0.89	0.97	0.95	continue to monitor

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
	P2-3:A1:18_ BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.92	0.91	NA	0.92	0.89	NA	0.96	1.03	0.68	0.96	0.91	Load forecast under review
	P2-3:A1:19_ BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.92	0.91	NA	0.92	0.89	NA	0.97	1.03	0.69	0.97	0.91	Load forecast under review
	P2-3:A1:1_ HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.02	0.50	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20_ BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.92	0.91	NA	0.92	0.89	NA	0.96	1.03	0.67	0.96	0.91	Load forecast under review
	P2-3:A1:2_ HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.96	0.93	0.91	NConv	0.66	1.02	0.52	0.66	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1_ HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	0.93	0.91	NConv	0.66	1.02	0.52	0.66	NConv	Install Redundant Relay
	P5-5C:A1:1_ HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.02	0.50	NConv	NConv	Install Redundant Battery
RUSS RCH 60 KV	P1-2:A1:14_ HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	0.75	1.03	1.03	0.78	1.03	1.02	0.87	1.03	0.84	0.87	1.03	Project: Garberville Area Reinforcement
	P2-2:A1:1_ HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.01	0.92	0.97	NConv	0.52	1.03	0.50	0.52	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18_ BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.98	1.03	1.03	0.99	1.02	1.03	0.98	1.03	0.83	0.97	1.03	sensitivity only
	P2-3:A1:19_ BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.98	1.03	1.03	0.99	1.02	1.03	0.99	1.03	0.84	0.99	1.03	sensitivity only
	P2-3:A1:1_ HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.97	NConv	NConv	NConv	NConv	1.03	0.44	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20_ BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.98	1.03	1.03	0.99	1.02	1.03	0.98	1.03	0.82	0.97	1.03	sensitivity only
	P2-3:A1:2_ HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.01	0.92	0.97	NConv	0.52	1.03	0.50	0.52	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1_ HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.01	0.92	0.97	NConv	0.52	1.03	0.50	0.52	NConv	Install Redundant Relay
SWNS FLT 60 KV	P5-5C:A1:1_ HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.97	NConv	NConv	NConv	NConv	1.03	0.44	NConv	NConv	Install Redundant Battery
	P1-2:A1:16_ HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC. NEWBURG	P1	N-1	0.92	0.92	0.96	0.92	0.96	0.96	0.96	0.99	0.90	0.96	0.92	sensitivity only
	P1-2:A1:3_ BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	0.94	0.94	0.95	0.94	0.96	NConv	0.95	0.98	0.89	0.95	0.94	continue to monitor
	P1-3:A1:3_ BRDGVILLE 115/60KV TB 1	P1	N-1	0.86	0.85	NA	0.86	0.83	NA	0.95	1.03	0.88	0.95	0.85	Project: Garberville Area Reinforcement
	P1-4:A1:7_ FRT SWRD SVD=V1	P1	N-1	NA	NA	0.92	NA	NA	0.90	NA	NA	NA	NA	NA	continue to monitor
	P2-1:A1:2_ BRIDGEVILLE-COTTONWOOD 115KV [1110] (FRSTGLEN-LOW GAP1)	P2	Bus/Breaker	0.94	0.94	0.95	0.94	0.96	NConv	0.95	0.98	0.89	0.95	0.94	continue to monitor
	P2-1:A1:52_ PACIFIC LUMBER (SCOTIA) TAP 60KV [7852] (HRCGEN-SCOTIACT)	P2	Bus/Breaker	0.94	0.94	0.89	0.94	0.97	0.84	0.96	0.99	0.95	0.96	0.94	continue to monitor
	P2-2:A1:1_ HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	0.96	0.93	0.89	NConv	0.75	1.03	0.68	0.75	NConv	Project: Garberville Area Reinforcement
	P2-2:A1:2_ LOW GAP1 115KV SECTION 1D	P2	Bus/Breaker	0.94	0.94	0.95	0.94	0.96	NConv	0.95	0.98	0.89	0.95	0.94	continue to monitor
	P2-3:A1:18_ BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.86	0.84	NA	0.85	0.78	NA	0.93	1.03	0.64	0.93	0.84	Project: Garberville Area Reinforcement
	P2-3:A1:19_ BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.86	0.84	NA	0.85	0.78	NA	0.94	1.03	0.65	0.94	0.84	Project: Garberville Area Reinforcement
	P2-3:A1:1_ HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.03	0.67	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20_ BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.86	0.84	NA	0.85	0.78	NA	0.93	1.03	0.64	0.92	0.84	Project: Garberville Area Reinforcement
	P2-3:A1:2_ HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	0.96	0.93	0.89	NConv	0.75	1.03	0.68	0.75	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1_ HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	0.93	0.89	NConv	0.75	1.03	0.68	0.75	NConv	Install Redundant Relay
	P5-5C:A1:1_ HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.96	NConv	NConv	NConv	NConv	1.03	0.67	NConv	NConv	Install Redundant Battery
	P1-2:A1:14_ HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	0.70	1.03	1.03	0.75	1.03	1.03	0.85	1.03	0.81	0.85	1.03	Project: Garberville Area Reinforcement

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
WILLWCRK 60 kV	P2-2:A1:1:_HUMBOLDT 115KV SECTION MA	P2	Bus/Breaker	NConv	NConv	1.02	0.89	0.98	NConv	0.49	1.03	0.46	0.49	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:18:_BRDGVILLE 115KV - RING R3 & R2	P2	Bus/Breaker	0.95	1.03	1.03	0.96	1.03	1.03	0.95	1.03	0.79	0.95	1.03	sensitivity only
	P2-3:A1:19:_BRDGVILLE 115KV - RING R1 & R2	P2	Bus/Breaker	0.95	1.03	1.03	0.96	1.03	1.03	0.97	1.03	0.80	0.96	1.03	sensitivity only
	P2-3:A1:1:_HUMBOLDT - MA 115KV & HUMBOLDT-TRINITY LINE	P2	Bus/Breaker	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.03	0.41	NConv	NConv	Project: Garberville Area Reinforcement
	P2-3:A1:20:_BRDGVILLE 115KV - RING R1 & R3	P2	Bus/Breaker	0.95	1.03	1.03	0.96	1.03	1.03	0.95	1.03	0.79	0.95	1.03	sensitivity only
	P2-3:A1:2:_HUMBOLDT - MA 115KV & HUMBOLDT BAY-HUMBOLDT #1 LINE	P2	Bus/Breaker	NConv	NConv	1.02	0.89	0.98	NConv	0.49	1.03	0.46	0.49	NConv	Project: Garberville Area Reinforcement
	P5-5A:A1:1:_HUMBOLDT 115 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundant battery supply/Relay	NConv	NConv	1.02	0.89	0.98	NConv	0.49	1.03	0.46	0.49	NConv	Install Redundant Relay
	P5-5C:A1:1:_HUMBOLDT 115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundant battery supply/Relay	NConv	NConv	0.98	NConv	NConv	NConv	NConv	1.03	0.41	NConv	NConv	Install Redundant Battery

Substation	Contingency	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
BRDGVLE	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	12	13	<8	11	20	<8	<8	<8	10	<8	13	Project:Garberville Area Reinforcement
CARLOTTA	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC_NEWBURG	P1	N-1	<8	9	<8	9	9	<8	<8	<8	14	<8	9	Project:Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	<8	<8	<8	<8	8	<8	<8	<8	<8	<8	<8	Project:Garberville Area Reinforcement
FRT SWRD	P1-2:A1:24:_BRIDGEVILLE-GARBerville 60KV [6220] MOAS OPENED ON BRDGVLE_FRUTLDJT	P1	N-1	44	48	<8	46	50	<8	41	<8	44	40	47	Project:Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	<8	<8	<8	<8	<8	<8	<8	<8	8	<8	<8	Project:Garberville Area Reinforcement
	P1-2:A1:4:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800]	P1	N-1	<8	<8	<8	<8	8	<8	<8	<8	<8	<8	<8	Project:Garberville Area Reinforcement
	P1-2:A1:5:_KEAWAKA-GRBRVLE-LYTNVLE 60KV [0]	P1	N-1	17	23	<8	16	14	<8	<8	<8	14	<8	24	Project:Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	11	13	<8	9	20	<8	<8	<8	10	<8	13	Project:Garberville Area Reinforcement
	P1-4:A1:5:_GRBRVLE 60.00KV ID=8H & GRBRVLE 60.00KV ID=7H & GRBRVLE 60.00KV ID=5H & GRBRVLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	<8	10	<8	8	9	14	<8	<8	8	<8	10	Project:Garberville Area Reinforcement
	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	<8	<8	19	<8	<8	24	<8	<8	<8	<8	<8	continue to monitor
FRUITLND	P1-2:A1:24:_BRIDGEVILLE-GARBerville 60KV [6220] MOAS OPENED ON BRDGVLE_FRUTLDJT	P1	N-1	46	50	<8	47	53	<8	41	<8	45	41	49	Project:Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	<8	<8	<8	<8	<8	<8	<8	<8	8	<8	<8	sensitivity only
	P1-2:A1:4:_HUMBOLDT BAY-HUMBOLDT #1 115KV [1800]	P1	N-1	<8	<8	<8	<8	9	<8	<8	<8	<8	<8	<8	continue to monitor
	P1-2:A1:5:_KEAWAKA-GRBRVLE-LYTNVLE 60KV [0]	P1	N-1	14	19	<8	13	12	<8	<8	<8	11	<8	20	Project:Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	11	13	<8	10	20	<8	<8	<8	10	<8	13	Project:Garberville Area Reinforcement
	P1-3:A1:4:_HMBOBAYPPB 115/13.8KV TB 1	P1	N-1	<8	<8	<8	<8	9	<8	<8	<8	<8	<8	<8	Project:Garberville Area Reinforcement
	P1-4:A1:5:_GRBRVLE 60.00KV ID=8H & GRBRVLE 60.00KV ID=7H & GRBRVLE 60.00KV ID=5H & GRBRVLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	<8	8	10	<8	<8	12	<8	<8	<8	<8	8	under review
GRBRVLE	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	<8	<8	13	<8	<8	17	<8	<8	<8	<8	<8	continue to monitor
	P1-2:A1:24:_BRIDGEVILLE-GARBerville 60KV [6220] MOAS OPENED ON BRDGVLE_FRUTLDJT	P1	N-1	42	46	<8	43	47	<8	39	<8	42	39	45	Project:Garberville Area Reinforcement
	P1-2:A1:25:_BRIDGEVILLE-GARBerville 60KV [6220] MOAS OPENED ON FTSWRDJT_GRBRVLE	P1	N-1	35	36	<8	35	39	<8	<8	<8	34	<8	37	Project:Garberville Area Reinforcement
	P1-2:A1:3:_BRIDGEVILLE-COTTONWOOD 115KV [1110]	P1	N-1	<8	<8	<8	<8	<8	<8	<8	<8	9	<8	<8	Project:Garberville Area Reinforcement
	P1-2:A1:5:_KEAWAKA-GRBRVLE-LYTNVLE 60KV [0]	P1	N-1	21	28	<8	19	16	<8	<8	<8	17	<8	29	Project:Garberville Area Reinforcement
	P1-3:A1:3:_BRDGVLE 115/60KV TB 1	P1	N-1	11	13	<8	9	20	<8	<8	<8	10	<8	13	Project:Garberville Area Reinforcement
	P1-4:A1:5:_GRBRVLE 60.00KV ID=8H & GRBRVLE 60.00KV ID=7H & GRBRVLE 60.00KV ID=5H & GRBRVLE 60.00KV ID=V SHUNT DEVICES	P1	N-1	9	13	16	10	11	19	10	<8	10	10	13	Install reactive support
HOOPA	P1-4:A1:7:_FRT SWRD SVD=V1	P1	N-1	<8	<8	17	<8	<8	22	<8	<8	<8	<8	<8	under review
	P1-2:A1:14:_HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	27	<8	<8	23	<8	<8	14	<8	17	14	<8	under review
MPL CRK	P1-2:A1:14:_HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	24	<8	<8	22	<8	<8	13	<8	16	13	<8	under review

Substation	Contingency	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)								Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2025 Summer Peak	2028 Summer Peak	2035 Summer Peak	2025 Winter Peak	2028 Winter Peak	2035 Winter Peak	2025 Spring Off-Peak	2028 Spring Off-Peak	2025 SP Heavy Renewable & Min Gas Gen	2025 OP Sensitivity	2028 SP High CEC Forecast	
NEWBURG	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC_NEWBURG	P1	N-1	10	11	<8	11	11	<8	<8	<8	16	<8	11	Project:Garberville Area Reinforcement
PCLUMBER	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC_NEWBURG	P1	N-1	<8	9	<8	9	9	<8	<8	<8	14	<8	9	under review
	P1-3:A1:3:_BRDGVILLE 115/60KV TB 1	P1	N-1	<8	<8	<8	<8	8	<8	<8	<8	<8	<8	<8	under review
RIO DELL	P1-1:A1:2:_HRCGENSAB 13.80KV GEN UNIT 2	P1	N-1	<8	<8	<8	<8	<8	<8	<8	<8	9	<8	<8	sensitivity only
	P1-2:A1:16:_HUMBOLDT BAY-RIO DELL JCT 60KV [7100] MOAS OPENED ON EEL RIVER JC_NEWBURG	P1	N-1	<8	8	<8	<8	<8	<8	<8	<8	14	<8	8	under review
RUSS RCH	P1-2:A1:14:_HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	25	<8	<8	22	<8	<8	13	<8	16	13	<8	under review
WILLWCRK	P1-2:A1:14:_HUMBOLDT-MAPLE CREEK 60KV [7130] MOAS OPENED ON HUMBOLDT_MPLE CRK	P1	N-1	26	<8	<8	23	<8	<8	14	<8	16	14	<8	under review

Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			2025 Spring Off-Peak	2028 Summer Peak	2035 Summer Peak	2028 SP High CEC Forecast	2025 OP Sensitivity	
In accordance with TPL-001-5- Requirement R2.6, this area relies on the past studies from the 2020-21 Transmission Planning Process.								
http://www.caiso.com/Documents/BoardApproved2020-2021TransmissionPlan.pdf								

Single Contingency Load Drop

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

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



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

No single source substation with more than 100 MW