

2022-2023 ISO Reliability Assessment - Preliminary Study Results

Study Area: **PG&E Central Coast/Los Padres**

Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)									Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast		
AECCEORTP-ZACA 115 kV	P2-4:A20:5:_MESA_PGE 115KV - SECTION 2D & 1D	P2	Bus/Breaker	Diverge	Diverge	Diverge	Diverge	36	Diverge	Diverge	Diverge	0	Diverge	Diverge	Existing UVLS	
	P5-5C:A20:7:_MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	36	Diverge	Diverge	Diverge	0	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0] & P1-2:A20:23:_MESA-SISQUOC 115KV [2460]	P6	N-1-1	11	30	121	27	21	21	12	20	38	30	31	Continue to monitor	
	P7-1:A20:6:_Mesa-Divide #1 and #2 115 kV Lines	P7	DCTL	64	48	58	144	35	87	49	57	22	120	48	Generation redispatch	
Atascadero-Cayucos 70 kV Line	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	70	Diverge	Diverge	Diverge	80	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	62	Diverge	Diverge	Diverge	73	Diverge	Diverge	Install redundant battery supply	
Atascadero-San Luis Obispo 70 kV Line	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	53	Diverge	Diverge	Diverge	63	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	47	Diverge	Diverge	Diverge	62	Diverge	Diverge	Install redundant battery supply	
CABRILLO-SW149CBOSNYZ 115 kV	P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0] & P1-2:A20:23:_MESA-SISQUOC 115KV [2460]	P6	N-1-1	16	55	168	33	31	24	26	37	36	35	56	Continue to monitor	
Callender Sw. Sta-Mesa 115 kV Line	P2-4:A20:4:_MORROBAY 230KV - SECTION 1E & 2E	P2	Bus/Breaker	120	Diverge	Diverge	161	85	99	115	Diverge	66	138	160	Existing UVLS	
	P5-5A:A20:1:_MESA 230 KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	96	0	0	137	78	86	94	69	57	121	127	Install redundant relay	
	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	0	Diverge	Diverge	Diverge	80	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	0	Diverge	Diverge	Diverge	80	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:15:_DIABLO-MESA 230KV [4620] & P1-2:A20:7:_MORRO BAY-MESA 230KV [5290]	P6	N-1-1	12	136	Diverge	142	80	93	105	Diverge	61	132	140	Existing UVLS	
	P7-1:A20:16:_Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	112	143	Diverge	154	83	97	107	Diverge	66	139	146	Existing UVLS	
	P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	106	136	Diverge	148	80	93	104	Diverge	61	132	140	Existing UVLS	
Coalinga #1-San Miguel 70 kV Line	P1-2:A20:35:_PASO ROBLES-TEMPLETON 70KV [9400]	P1	N-1	193	24	58	207	25	145	2	3	183	204	24	Project: Estrella substation project	
	P1-2:A20:2:_TEMPLETON-GATES 230KV [5934] & P1-2:A20:46:_ESTRELLA-CALFLATSSS #1 230KV [0]	P6	N-1-1	N/A	74	113	N/A	50	N/A	17	20	N/A	N/A	68	Under review	
Crazy Horse-Moss Landing #1 115 kV Line	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	51	89	103	46	38	36	44	56	50	46	90	Continue to monitor	
	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	51	89	103	46	38	36	44	56	50	46	90	Continue to monitor	
Crazy Horse-Moss Landing #2 115 kV Line	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	53	91	107	49	40	38	47	58	52	49	93	Continue to monitor	
	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	53	91	107	49	40	38	47	58	52	49	93	Continue to monitor	
Crazy Horse-Natividad #1 115 kV Line	P5-5C:A19:1:_MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	0	Diverge	Diverge	0	36	0	Diverge	Diverge	0	0	Diverge	Install redundant battery supply	
	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	106	176	203	96	67	64	78	99	99	96	179	Previously proposed RAS	
	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	106	176	203	96	67	64	78	99	99	96	179	Previously proposed RAS	
	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	72	126	139	68	63	43	53	62	67	68	128	Previously proposed RAS	
	P5-5C:A19:1:_MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	0	Diverge	Diverge	0	36	0	Diverge	Diverge	0	0	Diverge	Install redundant battery supply	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)									Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast		
Crazy Horse-Soledad 115 kV Line	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	106	176	203	96	67	64	78	99	99	96	179	Previously proposed RAS	
	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	106	176	203	96	67	64	78	99	99	96	179	Previously proposed RAS	
	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	72	126	139	68	63	43	53	62	67	68	128	Previously proposed RAS	
Divide-Cabrillo 115 kV Line No. 1	P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0] & P1-2:A20:23:_MESA-SISQUOC 115KV [2460]	P6	N-1-1	24	61	174	40	38	29	31	41	43	42	62	Existing UVLS	
ESTRELLA-PSA RBLS 70 kV	P1-2:A20:2:_TEMPLETON-GATES 230KV [5934] & P1-2:A20:3:_MORRO BAY-TEMPLETON 230KV [5933]	P6	N-1-1	N/A	110	61	N/A	33	N/A	45	55	N/A	N/A	111	Under review	
Green Valley 115/60 Transformer #1	P5-5A:A19:1:_SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent Relay	222	Diverge	Diverge	217	242	215	222	220	224	216	Diverge	Install redundant relay	
	P5-5C:A19:1:_MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery supply	0	Diverge	Diverge	0	Diverge	0	Diverge	Diverge	0	0	Diverge	Install redundant battery supply	
Green Valley-Morgan Hill 115 kV Line	P5-5C:A19:1:_MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery supply	N/A	Diverge	Diverge	N/A	Diverge	N/A	Diverge	Diverge	N/A	N/A	Diverge	Install redundant battery supply	
Green Valley-Watsonville 60 kV	P5-5A:A19:1:_SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent Relay	169	Diverge	Diverge	164	180	126	130	131	168	163	Diverge	Install redundant relay	
	P5-5C:A19:1:_MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery supply	0	Diverge	Diverge	0	Diverge	0	Diverge	Diverge	0	0	Diverge	Install redundant battery supply	
	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	140	9	34	143	30	100	32	26	97	143	13	Project: Morgan Hill area reinforcement	
King City-Coburn #2 60 kV Line	P1-2:A19:50:_COBURN-KING CTY 60KV [0]	P1	N-1	82	102	89	53	94	35	41	50	71	53	103	Coburn 60kv bus reliability improvement	
Lagunitas 60 kV Tap	Base Case	P0	Normal	56	87	109	50	23	31	35	44	45	50	88	Continue to monitor	
	P5-5A:A19:1:_SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent Relay	214	Diverge	Diverge	228	235	173	183	169	217	227	Diverge	Install redundant relay	
	P5-5C:A19:1:_MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery supply	0	Diverge	Diverge	0	Diverge	0	Diverge	Diverge	0	0	Diverge	Install redundant battery supply	
	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	56	87	104	50	23	31	35	48	45	50	88	Continue to monitor	
	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	267	91	78	255	84	190	84	71	198	253	99	Under review	
Mesa-Santa Maria 115 kV Line	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	50	78	104	45	20	29	32	45	40	45	78	Continue to monitor	
	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-3:A20:5:_MORROBAY 230/115KV TB 6	P6	N-1-1	70	100	124	72	64	62	67	87	64	75	101	Continue to monitor	
Morro Bay 230/115 Transformer No. 6	P7-1:A20:9:_Mesa-Sisquoc and Callender Sw Sta-Mesa 115 kV Lines	P7	DCTL	72	80	102	57	56	48	52	72	53	59	83	Continue to monitor	
	P2-4:A20:4:_MORROBAY 230KV - SECTION 1E & 2E	P2	Bus/Breaker	114	Diverge	Diverge	117	61	78	87	Diverge	68	120	138	Existing UVLS / Project: Mesa BESS	
	P2-4:A20:5:_MESA_PGE 115KV - SECTION 2D & 1D	P2	Bus/Breaker	Diverge	Diverge	Diverge	Diverge	79	Diverge	Diverge	Diverge	67	Diverge	Diverge	Existing UVLS / Project: Mesa BESS	
	P5-5A:A20:1:_MESA 230 KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent Relay	113	121	67	124	77	79	89	77	70	119	139	Install redundant relay	
	P5-5C:A20:7:_MESA 230-115KV BATT(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery supply	Diverge	Diverge	Diverge	Diverge	79	Diverge	Diverge	Diverge	67	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:15:_DIABLO-MESA 230KV [4620] & P1-2:A20:7:_MORRO BAY-MESA 230KV [5290]	P6	N-1-1	57	142	Diverge	127	77	83	93	Diverge	73	123	145	Existing UVLS / Project: Mesa BESS	
	P7-1:A20:16:_Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	121	143	Diverge	129	79	84	95	Diverge	75	126	146	Existing UVLS / Project: Mesa BESS	
Morro Bay-SLO 115 kV Line No. 1	P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	118	142	Diverge	127	77	83	93	Diverge	73	123	146	Existing UVLS / Project: Mesa BESS	
	P1-2:A20:15:_DIABLO-MESA 230KV [4620] & P1-2:A20:7:_MORRO BAY-MESA 230KV [5290]	P6	N-1-1	33	87	Diverge	78	48	50	57	27	45	77	89	Existing UVLS	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)									Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast		
Morro Bay-SLO 115 kV Line No. 2	P1-2:A20:15:_DIABLO-MESA 230KV [4620] & P1-2:A20:7:_MORRO BAY-MESA 230KV [5290]	P6	N-1-1	34	88	Diverge	79	48	65	74	36	44	78	90	Existing UVLS	
Moss Landing-Salinas #1 115 kV Line	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:19:_MOSS LANDING-CRAZY HORSE CANYON #2 115KV [2983]	P6	N-1-1	52	89	103	47	39	37	46	56	51	48	91	Continue to monitor	
	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	52	89	103	48	39	37	46	56	51	48	91	Continue to monitor	
Moss Landing-Salinas #2 115 kV Line	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:19:_MOSS LANDING-CRAZY HORSE CANYON #2 115KV [2983]	P6	N-1-1	52	90	103	48	40	38	46	57	51	48	92	Continue to monitor	
	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	52	90	103	48	40	38	46	57	51	48	92	Continue to monitor	
MOSSLNSW-DOLAN J1 115 kV	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:19:_MOSS LANDING-CRAZY HORSE CANYON #2 115KV [2983]	P6	N-1-1	59	96	111	53	43	43	52	64	56	53	98	Continue to monitor	
	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	59	96	111	53	43	43	52	64	56	53	98	Continue to monitor	
MOSSLNSW-DOLAN J2 115 kV	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:22:_SALINAS-MOSSLNSW-DOLAN RD 115KV [0]	P6	N-1-1	60	96	110	54	43	44	53	65	56	54	98	Continue to monitor	
	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	52	90	103	48	40	39	47	58	51	48	91	Continue to monitor	
MOSSLNSW-MOSSLNSW 230/115 kV	P1-3:A19:7:_MOSSLNSW 230/115KV TB 1 & P1-3:A19:8:_MOSSLNSW 230/115KV TB 2	P6	N-1-1	65	92	101	54	45	52	58	82	45	54	95	Continue to monitor	
Oceano-Callender Sw. Sta 115 kV Line	P2-4:A20:4:_MORROBAY 230KV - SECTION 1E & 2E	P2	Bus/Breaker	121	Diverge	Diverge	159	81	97	113	Diverge	64	136	160	Existing UVLS	
	P5-5A:A20:1:_MESA 230 KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	95	4	2	135	75	84	92	68	56	119	126	Install redundant relay	
	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	3	Diverge	Diverge	Diverge	79	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	3	Diverge	Diverge	Diverge	78	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:15:_DIABLO-MESA 230KV [4620] & P1-2:A20:7:_MORRO BAY-MESA 230KV [5290]	P6	N-1-1	14	135	Diverge	141	76	90	102	Diverge	60	131	139	Existing UVLS	
	P7-1:A20:16:_Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	114	143	Diverge	153	79	94	105	Diverge	63	137	146	Existing UVLS	
	P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	105	135	Diverge	146	76	90	101	Diverge	60	131	140	Existing UVLS	
Salinas-Firestone #1 60 kV Line	Base Case	P0	Normal	66	114	120	64	64	44	47	54	87	63	114	Review project: Salinas- Firestone #1 and #2 reconductor	
	P1-2:A19:38:_SALINAS-FIRESTONE #2 60KV [7910]	P1	N-1	108	97	104	114	57	90	45	52	149	114	97	Review project: Salinas- Firestone #1 and #2 reconductor	
	P2-3:A19:25:_MOSSLNSW 115KV - MIDDLE BREAKER BAY 3	P2	Bus/Breaker	58	102	120	56	56	42	44	50	76	56	103	Review project: Salinas- Firestone #1 and #2 reconductor	
	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:19:_MOSS LANDING-CRAZY HORSE CANYON #2 115KV [2983]	P6	N-1-1	66	115	121	64	64	44	47	54	87	63	103	Review project: Salinas- Firestone #1 and #2 reconductor	
	P1-2:A19:16:_CRAZY HORSE CANYON-SALINAS-SOLEDAD #2 115KV [2910] & P1-2:A19:22:_SALINAS-MOSSLNSW-DOLAN RD 115KV [0]	P6	N-1-1	59	96	114	57	59	40	43	50	80	57	97	Review project: Salinas- Firestone #1 and #2 reconductor	
	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	58	102	114	56	56	42	44	51	78	56	103	Review project: Salinas- Firestone #1 and #2 reconductor	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)									Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast		
	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	58	102	120	56	56	42	44	51	76	56	103	Review project: Salinas- Firestone #1 and #2 reconductor	
Salinas-Firestone #2 60 kV Line	P1-2:A19:37:_SALINAS1-FIRESTONE 60KV [0]	P1	N-1	109	98	107	115	56	90	45	52	151	115	98	Review project: Salinas- Firestone #1 and #2 reconductor	
San Luis Obispo-Oceano 115 kV Line	P2-4:A20:4:_MORROBAY 230KV - SECTION 1E & 2E	P2	Bus/Breaker	116	Diverge	Diverge	142	83	91	109	Diverge	58	125	154	Existing UVLS	
	P5-5A:A20:1:_MESA 230 KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	101	32	42	127	78	83	95	76	52	114	130	Install redundant relay	
	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	30	Diverge	Diverge	Diverge	70	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	31	Diverge	Diverge	Diverge	69	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:15:_DIABLO-MESA 230KV [4620] & P1-2:A20:7:_MORRO BAY-MESA 230KV [5290]	P6	N-1-1	34	134	Diverge	129	79	85	101	Diverge	55	121	139	Existing UVLS	
	P7-1:A20:16:_Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	112	139	Diverge	137	81	89	103	Diverge	58	125	142	Existing UVLS	
	P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	107	134	Diverge	133	79	85	100	Diverge	55	121	140	Existing UVLS	
San Luis Obispo-Santa Maria 115 kV Line	P2-4:A20:4:_MORROBAY 230KV - SECTION 1E & 2E	P2	Bus/Breaker	154	Diverge	Diverge	192	112	118	139	Diverge	82	169	204	Existing UVLS	
	P2-4:A20:5:_MESA_PGE 115KV - SECTION 2D & 1D	P2	Bus/Breaker	Diverge	Diverge	Diverge	Diverge	173	Diverge	Diverge	Diverge	0	Diverge	Diverge	Existing UVLS	
	P5-5A:A20:1:_MESA 230 KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	135	0	0	172	105	108	121	96	74	155	173	Install redundant relay	
	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	0	Diverge	Diverge	Diverge	96	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	0	Diverge	Diverge	Diverge	95	Diverge	Diverge	Install redundant battery supply	
	P5-5C:A20:7:_MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	174	Diverge	Diverge	Diverge	0	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:15:_DIABLO-MESA 230KV [4620] & P1-2:A20:7:_MORRO BAY-MESA 230KV [5290]	P6	N-1-1	42	178	Diverge	174	106	111	129	Diverge	78	164	184	Existing UVLS	
	P7-1:A20:16:_Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	147	183	Diverge	186	110	115	131	Diverge	82	169	188	Existing UVLS	
P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	141	178	Diverge	181	106	111	128	Diverge	78	164	185	Existing UVLS		
San Miguel-Paso Robles 70 kV Line	P1-2:A20:35:_PASO ROBLES-TEMPLETON 70KV [9400]	P1	N-1	158	N/A	N/A	169	N/A	122	N/A	N/A	158	167	N/A	Project: Estrella substation project	
Santa Maria-Sisquoc 115 kV Line	P2-4:A20:5:_MESA_PGE 115KV - SECTION 2D & 1D	P2	Bus/Breaker	Diverge	Diverge	Diverge	Diverge	83	Diverge	Diverge	Diverge	0	Diverge	Diverge	Existing UVLS	
	P5-5C:A20:7:_MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	106	Diverge	Diverge	Diverge	0	Diverge	Diverge	Install redundant battery supply	
Sisquoc-Santa Ynez 115 kV	P2-4:A20:5:_MESA_PGE 115KV - SECTION 2D & 1D	P2	Bus/Breaker	Diverge	Diverge	Diverge	Diverge	43	Diverge	Diverge	Diverge	0	Diverge	Diverge	Existing UVLS	
	P5-5C:A20:7:_MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	43	Diverge	Diverge	Diverge	0	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0] & P1-2:A20:23:_MESA-SISQUOC 115KV [2460]	P6	N-1-1	25	23	111	14	18	13	6	13	24	18	24	Continue to monitor	
	P7-1:A20:6:_Mesa-Divide #1 and #2 115 kV Lines	P7	DCTL	77	55	65	158	43	97	55	63	36	134	55	Continue to monitor	
Sisquoc-Santa Ynez Sw.Sta. 115 kV Line	P2-4:A20:5:_MESA_PGE 115KV - SECTION 2D & 1D	P2	Bus/Breaker	Diverge	Diverge	Diverge	Diverge	46	Diverge	Diverge	Diverge	0	Diverge	Diverge	Existing UVLS	
	P2-4:A20:5:_MESA_PGE 115KV - SECTION 2D & 1D	P2	Bus/Breaker	Diverge	Diverge	Diverge	Diverge	35	Diverge	Diverge	Diverge	0	Diverge	Diverge	Existing UVLS	
	P5-5C:A20:7:_MESA 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	47	Diverge	Diverge	Diverge	0	Diverge	Diverge	Install redundant battery supply	
	P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0] & P1-2:A20:23:_MESA-SISQUOC 115KV [2460]	P6	N-1-1	7	34	127	37	21	29	14	22	49	41	35	Continue to monitor	
	P7-1:A20:6:_Mesa-Divide #1 and #2 115 kV Lines	P7	DCTL	83	58	70	163	45	101	57	65	42	138	58	Continue to monitor	

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)									Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast		
SW149CBOSNYZ-SANTAYNEZSS 115 kV	P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0] & P1-2:A20:23:_MESA-SISQUOC 115KV [2460]	P6	N-1-1	16	55	169	33	31	24	26	37	37	35	56	Continue to monitor	
Temblor-San Luis Obispo 115 kV Line	P2-4:A20:4:_MORROBAY 230KV - SECTION 1E & 2E	P2	Bus/Breaker	92	Diverge	Diverge	138	114	71	88	Diverge	41	88	128	Existing UVLS	
	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	2	Diverge	Diverge	Diverge	132	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	2	Diverge	Diverge	Diverge	129	Diverge	Diverge	Install redundant battery supply	
	P5-5C:A20:4:_SOLAR SW STA 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	61	78	59	103	89	51	63	77	17	56	85	Install redundant battery supply	
	P5-5C:A20:5:_CALIENTE 230KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	61	77	58	103	34	51	63	77	12	56	84	Install redundant battery supply	
	P1-2:A20:4:_MORRO BAY-SOLAR SW STA #1 230KV [5300] & P1-2:A20:5:_MORRO BAY-SOLAR SW STA #2 230KV [5310]	P6	N-1-1	46	78	60	101	97	51	63	78	26	56	85	Continue to monitor	
	P7-1:A10:14:_SOLARSS-CALNTESS 230 kV Line No. 1 & 2	P7	DCTL	61	77	58	103	38	51	63	77	11	56	84	Continue to monitor	
	P7-1:A20:13:_MORROBAY-SOLARSS 230 kV Line No. 1 & 2	P7	DCTL	61	78	60	103	97	51	63	78	26	56	85	Continue to monitor	
	P7-1:A20:15:_MIDWAY-CALNTESS 230 kV Line No. 1 & 2	P7	DCTL	61	77	58	103	13	51	64	77	12	56	84	Continue to monitor	
	P7-1:A20:16:_Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	71	89	Diverge	103	69	55	65	Diverge	26	75	95	Existing UVLS	
P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	70	88	Diverge	101	68	54	64	Diverge	25	73	94	Existing UVLS		
Templeton 230/70 kV Transformer	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	27	Diverge	Diverge	Diverge	67	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	25	Diverge	Diverge	Diverge	67	Diverge	Diverge	Install redundant battery supply	
Templeton-Atascadero 70 kV Line	P5-5A:A20:6:_MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Diverge	Diverge	Diverge	Diverge	68	Diverge	Diverge	Diverge	84	Diverge	Diverge	Install redundant relay	
	P5-5C:A20:3:_MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Diverge	Diverge	Diverge	Diverge	63	Diverge	Diverge	Diverge	82	Diverge	Diverge	Install redundant battery supply	
Watsonville-Salinas 60 kV	P5-5A:A19:1:_SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	230	Diverge	Diverge	222	248	174	179	178	231	221	Diverge	Install redundant relay	
	P5-5C:A19:1:_MOSS LANDING 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	0	Diverge	Diverge	0	Diverge	0	Diverge	Diverge	0	0	Diverge	Install redundant battery supply	
	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	270	91	78	257	84	191	84	71	200	257	99	Project: Morgan Hill area reinforcement	

Study Area: **PG&E Central Coast/Los Padres**



High/Low Voltages

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast	
MESA PGE 230 kV	Base Case	P0	Normal	High	1.02	1.03	1.01	1.03	1.06	1.02	1.04	1.02	1.04	1.03	1.02	System adjustments or voltage support if needed
HOLLISTR 115 kV	Base Case	P0	Normal	High	1.02	1.01	0.98	1.03	1.07	1.03	1.04	1.01	1.03	1.03	1.01	System adjustments or voltage support if needed
CRZY_H&1 115 kV	Base Case	P0	Normal	High	1.02	1.01	0.99	1.03	1.05	1.03	1.03	1.01	1.03	1.03	1.01	System adjustments or voltage support if needed
CRZY_H&1 115 kV	Base Case	P0	Normal	High	1.02	1.01	0.99	1.03	1.05	1.03	1.03	1.01	1.03	1.03	1.01	System adjustments or voltage support if needed
HLSL_TP 115 kV	Base Case	P0	Normal	High	1.02	1.01	0.98	1.03	1.07	1.03	1.04	1.01	1.03	1.03	1.01	System adjustments or voltage support if needed
HOLST D 115 kV	Base Case	P0	Normal	High	1.02	1.01	0.98	1.03	1.07	1.03	1.04	1.01	1.03	1.03	1.01	System adjustments or voltage support if needed
SNBENITO 115 kV	Base Case	P0	Normal	High	1.02	1.01	0.99	1.03	1.05	1.03	1.03	1.01	1.03	1.03	1.01	System adjustments or voltage support if needed
BIG BASN 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.04	1.04	1.05	1.04	1.04	1.04	1.05	1.04	1.06	System adjustments or voltage support if needed
BURNS 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.03	1.04	1.05	1.03	1.03	1.04	1.05	1.04	1.06	System adjustments or voltage support if needed
BURNS J2 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.03	1.04	1.05	1.03	1.03	1.04	1.05	1.04	1.06	System adjustments or voltage support if needed
BURNS J1 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.03	1.04	1.05	1.03	1.03	1.04	1.05	1.04	1.06	System adjustments or voltage support if needed
LONE STR 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.03	1.04	1.05	1.03	1.03	1.04	1.05	1.04	1.05	System adjustments or voltage support if needed
L.STAR J 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.03	1.04	1.05	1.03	1.03	1.04	1.05	1.04	1.05	System adjustments or voltage support if needed
PT MRTTI 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.03	1.04	1.05	1.03	1.03	1.04	1.05	1.04	1.05	System adjustments or voltage support if needed
CRUSHER 60 kV	Base Case	P0	Normal	High	1.04	1.06	1.03	1.04	1.05	1.03	1.03	1.04	1.05	1.04	1.05	System adjustments or voltage support if needed
GREENVALLEY 60 kV	Base Case	P0	Normal	High	1.06	1.07	1.03	1.07	1.08	1.05	1.06	1.03	1.08	1.07	1.06	System adjustments or voltage support if needed
ERTA 60 kV	Base Case	P0	Normal	High	1.06	1.06	1.02	1.07	1.07	1.05	1.05	1.02	1.08	1.07	1.06	System adjustments or voltage support if needed
CIC JCT 60 kV	Base Case	P0	Normal	High	1.06	1.06	1.01	1.06	1.07	1.04	1.05	1.02	1.07	1.07	1.06	System adjustments or voltage support if needed
WTSNVILLE 60 kV	Base Case	P0	Normal	High	1.06	1.06	1.01	1.06	1.07	1.04	1.05	1.01	1.07	1.06	1.06	System adjustments or voltage support if needed
ERTA JCT 60 kV	Base Case	P0	Normal	High	1.06	1.06	1.02	1.07	1.07	1.05	1.05	1.02	1.08	1.07	1.06	System adjustments or voltage support if needed
AGRILINK 60 kV	Base Case	P0	Normal	High	1.06	1.06	1.01	1.06	1.07	1.04	1.05	1.01	1.07	1.06	1.06	System adjustments or voltage support if needed
TEXCO J2 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
TEXCO J1 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
OILFLDS 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
CHVSANARDO 60 kV	Base Case	P0	Normal	High	1.03	1.03	1.02	1.06	1.03	1.01	1.05	1.02	1.04	1.06	1.03	System adjustments or voltage support if needed
SARG CYN 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
SALN RVR 60 kV	Base Case	P0	Normal	High	1.03	1.03	1.02	1.06	1.03	1.02	1.05	1.02	1.04	1.06	1.03	System adjustments or voltage support if needed
AERA_ENG 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
AERA_MTR 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
AERA_TP1 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
AERA_TP2 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
AERA_TP3 60 kV	Base Case	P0	Normal	High	1.02	1.02	1.02	1.05	1.03	1.02	1.04	1.02	1.03	1.05	1.02	System adjustments or voltage support if needed
CHOLAME 70 kV	Base Case	P0	Normal	High	1.05	1.04	1.00	1.05	1.05	1.04	1.06	1.03	1.03	1.03	1.03	System adjustments or voltage support if needed

Study Area: **PG&E Central Coast/Los Padres**



High/Low Voltages

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast	
PSA RBL5 70 kV	Base Case	P0	Normal	High	1.02	1.03	0.98	1.05	1.05	1.04	1.03	1.01	1.03	1.03	1.03	System adjustments or voltage support if needed
DALLASES 500 kV	Base Case	P0	Normal	High	1.06	1.04	1.05	1.05	1.05	1.06	1.05	1.04	1.06	1.06	1.06	System adjustments or voltage support if needed
LAURELES 60 kV	Base Case	P0	Normal	Low	0.99	0.99	0.95	0.99	1.02	0.99	1.01	0.98	1.01	0.99	0.99	Continue to monitor
OTTER 60 kV	Base Case	P0	Normal	Low	0.98	0.98	0.94	0.99	1.01	0.99	1.00	0.97	1.00	0.99	0.98	Continue to monitor
FIRESTNE 60 kV	P1-2:A19:37: SALINAS1-FIRESTNE 60KV [0]	P1	N-1	Low	0.94	0.93	0.89	0.94	1.01	0.97	1.01	0.94	0.93	0.94	0.93	Continue to monitor
SAN MIGL 70 kV	P1-2:A20:49: SAN MIGL-UNIONPGAE #1 70KV [0]	P1	N-1	Low	N/A	0.90	0.88	N/A	1.01	0.97	1.01	0.95	0.93	0.94	0.93	Continue to monitor
SPENCE 60 kV	P1-2:A19:37: SALINAS1-FIRESTNE 60KV [0]	P1	N-1	Low	0.95	0.93	0.89	0.94	1.01	0.97	1.01	0.95	0.93	0.94	0.93	Continue to monitor
CRZY_H&I 115 kV	P2-3:A19:15: CRZY_HRS 115KV - MIDDLE BREAKER BAY 5	P2	Bus/Breaker	Low	1.01	0.97	0.90	1.03	1.06	1.04	1.03	Diverge	1.04	1.01	0.86	Continue to monitor
DIABLOCN 230 kV	P2-4:A20:4: MORROBAY 230KV - SECTION 1E & 2E	P2	Bus/Breaker	Low	1.01	Diverge	Diverge	1.00	1.06	1.00	1.01	Diverge	1.02	1.01	0.83	Sensitivity only
SNBENITO 115 kV	P2-3:A19:15: CRZY_HRS 115KV - MIDDLE BREAKER BAY 5	P2	Bus/Breaker	Low	1.01	0.97	0.90	1.03	1.09	1.03	1.03	0.97	1.01	1.03	0.96	Continue to monitor
AGRILINK 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.83	Diverge	Diverge	0.85	0.93	0.92	0.92	0.89	0.91	0.92	Diverge	Install redundant battery supply
BNA VSTA 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.29	Diverge	Diverge	0.33	0.86	0.85	0.86	0.82	0.84	0.86	Diverge	Install redundant battery supply
BORONDA 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.30	Diverge	Diverge	0.34	0.84	0.84	0.84	0.80	0.82	0.84	Diverge	Install redundant battery supply
BRIGTANO 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.58	Diverge	Diverge	0.63	0.90	0.89	0.89	0.86	0.88	0.89	Diverge	Install redundant battery supply
ERTA 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.87	Diverge	Diverge	0.90	0.61	0.62	0.62	0.57	0.58	0.63	Diverge	Install redundant battery supply
FIRESTNE 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.28	Diverge	Diverge	0.32	0.43	0.43	0.41	0.36	0.39	0.43	Diverge	Install redundant battery supply
FOOTHILL 115 kV	P5-5A:A20:6: MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	Diverge	Diverge	Diverge	Diverge	0.37	0.34	0.31	0.25	0.28	0.33	Diverge	Install redundant battery supply
FRSHXPRS 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.29	Diverge	Diverge	0.33	0.37	0.34	0.31	0.26	0.29	0.34	Diverge	Install redundant battery supply
GABILAN 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.29	Diverge	Diverge	0.33	0.37	0.34	0.31	0.26	0.29	0.34	Diverge	Install redundant battery supply
GOLDTREE 115 kV	P5-5A:A20:6: MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	Diverge	Diverge	Diverge	Diverge	0.38	0.33	0.30	0.24	0.29	0.33	Diverge	Install redundant battery supply
GRANT RK 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.58	Diverge	Diverge	0.63	0.37	0.33	0.31	0.25	0.28	0.33	Diverge	Install redundant battery supply
GREENVALLEY 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.91	Diverge	Diverge	0.93	0.37	0.33	0.31	0.25	0.28	0.33	Diverge	Install redundant battery supply
IND.ACRE 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.30	Diverge	Diverge	0.33	0.37	0.33	0.31	0.25	0.27	0.33	Diverge	Install redundant battery supply
LAURELES 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.29	Diverge	Diverge	0.33	0.37	0.33	0.30	0.25	0.27	0.32	Diverge	Install redundant battery supply
LAURLS J 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.29	Diverge	Diverge	0.33	0.37	0.33	0.31	0.24	0.27	0.32	Diverge	Install redundant battery supply
OTTER 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.28	Diverge	Diverge	0.32	0.37	0.33	0.31	0.24	0.26	0.31	Diverge	Install redundant battery supply
RSVTN RD 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.29	Diverge	Diverge	0.33	0.37	0.34	0.31	0.26	0.28	0.33	Diverge	Install redundant battery supply
SALINAS1 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.30	Diverge	Diverge	0.34	0.37	0.34	0.31	0.26	0.28	0.33	Diverge	Install redundant battery supply
SALINAS2 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.30	Diverge	Diverge	0.34	0.90	Diverge	Diverge	Diverge	1.00	Diverge	Diverge	Install redundant battery supply
SN LS OB 115 kV	P5-5A:A20:6: MORRO BAY 230KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	Diverge	Diverge	Diverge	Diverge	0.90	Diverge	Diverge	Diverge	1.00	Diverge	Diverge	Install redundant battery supply
SN LS OB 115 kV	P5-5C:A20:3: MORRO BAY SW 230-115KV BATT(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery supply	Low	Diverge	Diverge	Diverge	Diverge	0.90	Diverge	Diverge	Diverge	1.00	Diverge	Diverge	Install redundant battery supply
SPENCE 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.28	Diverge	Diverge	0.31	0.88	Diverge	Diverge	Diverge	1.00	Diverge	Diverge	Install redundant battery supply
WTSNVLL 60 kV	P5-5A:A19:1: SALINAS 115KV BAAH BUS #1 OR #2 (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant Relay	Low	0.82	Diverge	Diverge	0.85	0.90	Diverge	Diverge	Diverge	1.00	Diverge	Diverge	Install redundant battery supply
AGRILINK 60 kV	P1-2:A19:11: MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13: MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.37	1.05	0.99	0.41	1.07	0.44	1.04	1.01	0.59	0.41	1.05	Project: Morgan Hill area reinforcement

Study Area: **PG&E Central Coast/Los Padres**



High/Low Voltages

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast	
BRIGTANO 60 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.57	1.01	0.97	0.60	1.03	0.62	1.02	0.99	0.70	0.61	1.01	Project: Morgan Hill area reinforcement
CMP EVRS 115 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.26	1.01	0.90	0.31	1.04	0.33	1.01	0.99	0.52	0.31	1.01	Project: Morgan Hill area reinforcement
ERTA 60 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.33	1.05	1.00	0.37	1.07	0.41	1.04	1.02	0.57	0.38	1.05	Project: Morgan Hill area reinforcement
GRANT RK 60 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.55	1.01	0.96	0.59	1.02	0.61	1.02	0.98	0.69	0.59	1.01	Project: Morgan Hill area reinforcement
GREENVALLEY 115 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.27	1.01	0.98	0.31	1.04	0.34	1.01	1.00	0.52	0.31	1.00	Project: Morgan Hill area reinforcement
GREENVALLEY 60 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.31	1.05	1.00	0.35	1.08	0.39	1.04	1.02	0.56	0.36	1.05	Project: Morgan Hill area reinforcement
PAUL SWT 115 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.26	1.01	0.89	0.31	1.04	0.33	1.01	0.99	0.52	0.31	1.01	Project: Morgan Hill area reinforcement
ROB ROY 115 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.26	1.01	0.90	0.31	1.04	0.33	1.01	0.99	0.52	0.31	1.00	Project: Morgan Hill area reinforcement
WTSNVLE 60 kV	P1-2:A19:11:_MOSS LANDING-GREEN VALLEY #1 115KV [2850] & P1-2:A19:13:_MOSS LANDING-GREEN VALLEY #2 115KV [2860]	P6	N-1-1	Low	0.37	1.05	0.99	0.41	1.07	0.44	1.04	1.01	0.59	0.41	1.05	Project: Morgan Hill area reinforcement
CRZY_H&1 115 kV	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:19:_MOSS LANDING-CRAZY HORSE CANYON #2 115KV [2983]	P6	N-1-1	Low	1.02	1.00	0.89	1.03	1.06	1.03	1.03	1.00	1.02	1.03	1.00	Continue to monitor
HOLLISTR 115 kV	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:19:_MOSS LANDING-CRAZY HORSE CANYON #2 115KV [2983]	P6	N-1-1	Low	1.02	1.00	0.88	1.03	1.07	1.03	1.03	1.00	1.02	1.03	0.99	Continue to monitor
SNBENITO 115 kV	P1-2:A19:18:_MOSS LANDING-CRAZY HORSE CANYON #1 115KV [2930] MOAS OPENED ON PRNDL J1_PRUNEDLE & P1-2:A19:19:_MOSS LANDING-CRAZY HORSE CANYON #2 115KV [2983]	P6	N-1-1	Low	1.02	1.00	0.89	1.03	1.06	1.03	1.03	1.00	1.02	1.03	1.00	Continue to monitor
BNA VSTA 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.98	0.97	0.90	0.99	1.01	0.99	1.01	0.98	0.98	0.99	0.97	Continue to monitor
CAMPORA 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.99	0.97	0.88	1.02	1.04	1.03	1.03	0.98	1.00	1.02	0.97	Continue to monitor
FIRESTNE 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.97	0.96	0.89	0.98	1.01	0.99	1.01	0.97	0.97	0.98	0.96	Continue to monitor
GABILAN 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.98	0.97	0.90	0.99	1.01	0.99	1.01	0.98	0.99	0.99	0.97	Continue to monitor
GONZALES 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.99	0.96	0.87	1.02	1.04	1.03	1.03	0.98	0.99	1.01	0.96	Continue to monitor
LAURELES 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.98	0.97	0.88	0.99	1.02	0.99	1.00	0.96	1.00	0.99	0.98	Continue to monitor
OTTER 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.97	0.96	0.87	0.99	1.01	0.98	0.99	0.95	1.00	0.98	0.97	Continue to monitor
SALINAS 115 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	1.01	0.99	0.88	1.02	1.04	1.02	1.02	1.00	1.02	1.02	0.99	Continue to monitor
SLDAD 4M 115 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	1.00	0.98	0.89	1.02	1.04	1.03	1.03	0.99	1.00	1.02	0.97	Continue to monitor

Study Area: **PG&E Central Coast/Los Padres**



High/Low Voltages

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast	
SLDAD 5M 115 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	1.00	0.98	0.89	1.02	1.04	1.03	1.03	0.99	1.00	1.02	0.97	Continue to monitor
SOLEDAD 115 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	1.00	0.98	0.89	1.02	1.04	1.02	1.03	0.99	1.01	1.02	0.98	Continue to monitor
SOLEDAD 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	1.00	0.97	0.89	1.02	1.04	1.03	1.03	0.99	1.00	1.02	0.97	Continue to monitor
SPENCE 60 kV	P1-2:A19:22:_SALINAS-MOSSLSNW-DOLAN RD 115KV [0] & P1-2:A19:23:_MOSS LANDING-SALINAS #2 115KV [2890]	P6	N-1-1	Low	0.97	0.96	0.88	0.97	1.01	0.99	1.01	0.97	0.96	0.97	0.96	Continue to monitor
TEMPLETN 230 kV	P1-2:A20:2:_TEMPLETON-GATES 230KV [5934] & P1-2:A20:3:_MORRO BAY-TEMPLETON 230KV [5933]	P6	N-1-1	Low	1.01	0.81	1.00	0.79	1.03	0.80	1.01	0.79	0.78	0.77	0.80	Under review
AECCEOR 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	0.99	0.53	1.01	1.04	1.01	1.02	0.99	1.01	1.02	1.00	Continue to monitor
BUELLTON 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	1.00	0.59	1.01	1.04	1.00	1.02	0.99	1.01	1.01	1.01	Continue to monitor
CABRILLO 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.01	1.02	0.75	1.01	1.04	1.01	1.03	1.01	1.01	1.02	1.02	Continue to monitor
FAIRWAY 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	0.99	0.98	0.43	1.01	1.06	1.01	1.02	0.98	1.00	1.02	0.99	Continue to monitor
GAREY 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	0.99	0.45	1.02	1.06	1.02	1.02	0.99	1.01	1.02	1.00	Continue to monitor
PALMR 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	0.99	0.47	1.01	1.05	1.01	1.02	0.99	1.01	1.02	1.00	Continue to monitor
SANTAYNEZSS 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	1.00	0.59	1.01	1.04	1.00	1.02	0.99	1.01	1.01	1.01	Continue to monitor
SISQUOC 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	0.99	0.45	1.02	1.06	1.02	1.02	0.99	1.01	1.02	1.00	Continue to monitor
SNTA MRA 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	0.99	0.98	0.43	1.01	1.07	1.02	1.02	0.98	1.00	1.02	0.99	Continue to monitor
SNTA YNZ 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	1.00	0.59	1.01	1.04	1.00	1.01	0.99	1.01	1.01	1.01	Continue to monitor
SURF 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.01	1.01	0.77	1.01	1.03	1.01	1.02	1.01	1.01	1.02	1.02	Continue to monitor
SW149C8OSNYZ 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.01	1.02	0.75	1.01	1.04	1.01	1.03	1.01	1.01	1.02	1.02	Continue to monitor
ZACA 115 kV	P1-2:A20:23:_MESA-SISQUOC 115KV [2460] & P1-2:A20:24:_MESA_PGE-SNTA MRA 115KV [0]	P6	N-1-1	Low	1.00	1.00	0.56	1.01	1.04	1.01	1.02	0.99	1.01	1.01	1.01	Continue to monitor
FOOTHILL 115 kV	P1-2:A20:34:_OCEANO-CALLENDER SW STA 115KV [2394] & P1-3:A20:5:_MORROBAY 230/115KV TB 6	P6	N-1-1	Low	1.01	1.00	0.88	1.00	1.01	1.01	1.01	0.96	1.03	1.00	1.01	Continue to monitor
GOLDTREE 115 kV	P1-2:A20:34:_OCEANO-CALLENDER SW STA 115KV [2394] & P1-3:A20:5:_MORROBAY 230/115KV TB 6	P6	N-1-1	Low	1.01	1.00	0.88	1.00	1.01	1.01	1.00	0.96	1.03	1.00	1.01	Continue to monitor
MORRO BY 115 kV	P1-2:A20:34:_OCEANO-CALLENDER SW STA 115KV [2394] & P1-3:A20:5:_MORROBAY 230/115KV TB 6	P6	N-1-1	Low	1.01	1.00	0.88	1.00	1.01	1.01	1.00	0.96	1.04	1.00	1.01	Continue to monitor
OCEANO 115 kV	P1-2:A20:34:_OCEANO-CALLENDER SW STA 115KV [2394] & P1-3:A20:5:_MORROBAY 230/115KV TB 6	P6	N-1-1	Low	1.02	1.01	0.85	1.01	1.03	1.02	1.01	0.89	1.03	1.01	1.02	Continue to monitor
SN LS OB 115 kV	P1-2:A20:34:_OCEANO-CALLENDER SW STA 115KV [2394] & P1-3:A20:5:_MORROBAY 230/115KV TB 6	P6	N-1-1	Low	1.01	1.00	0.89	1.00	1.01	1.01	1.01	0.96	1.03	1.00	1.01	Continue to monitor
MESA PGE 230 kV	P1-2:A20:7:_MORRO BAY-MESA 230KV [5290] & P1-4:A20:9:_MESA_PGE SVD=V	P6	N-1-1	Low	1.00	1.01	0.88	1.00	1.06	1.01	1.03	0.88	1.01	1.01	1.01	Continue to monitor
CALLENDERSS 115 kV	P1-3:A20:5:_MORROBAY 230/115KV TB 6 & P1-2:A20:27:_CALLENDER SW STA-MESA 115KV [1210]	P6	N-1-1	Low	1.02	1.02	0.86	1.01	1.05	1.02	1.02	0.89	1.04	1.02	1.02	Continue to monitor
UNIONOIL 115 kV	P1-3:A20:5:_MORROBAY 230/115KV TB 6 & P1-2:A20:27:_CALLENDER SW STA-MESA 115KV [1210]	P6	N-1-1	Low	1.02	1.02	0.86	1.01	1.05	1.02	1.02	0.89	1.04	1.02	1.02	Continue to monitor
MESA PGE 230 kV	P7-1:A20:16:_Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	Low	1.00	0.99	Diverge	1.00	1.07	1.01	1.01	Diverge	1.02	1.03	0.88	Sensitivity only
MESA PGE 230 kV	P7-1:A20:17:_Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	Low	0.87	0.85	Diverge	0.87	1.06	0.98	0.99	Diverge	1.04	0.95	0.83	Existing UVLS
GREENVALLEY 115 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.27	0.97	0.91	0.31	1.07	0.33	0.99	0.94	0.52	0.31	0.96	Project: Morgan Hill area reinforcement
CMP EVRS 115 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.27	0.97	0.90	0.31	1.07	0.33	1.00	0.94	0.52	0.31	0.96	Project: Morgan Hill area reinforcement
PAUL SWT 115 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.27	0.97	0.89	0.31	1.08	0.33	0.99	0.93	0.52	0.31	0.96	Project: Morgan Hill area reinforcement

Study Area: **PG&E Central Coast/Los Padres**



High/Low Voltages

Substation	Contingency (All and Worst P6)	Category	Category Description	High/Low Voltage	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
					2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast	
ROB ROY 115 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.27	0.97	0.90	0.31	1.07	0.33	0.99	0.94	0.52	0.31	0.96	Project: Morgan Hill area reinforcement
HOLLISTR 115 kV	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	Low	1.00	0.95	0.88	1.03	1.08	1.03	1.03	0.96	1.00	1.02	0.95	Continue to monitor
CRZY_H&1 115 kV	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	Low	1.00	0.96	0.89	1.02	1.07	1.02	1.02	0.97	1.00	1.02	0.95	Continue to monitor
CRZY_H&1 115 kV	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	Low	1.00	0.96	0.89	1.02	1.07	1.02	1.02	0.97	1.00	1.02	0.95	Continue to monitor
SOLEDAD 115 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.98	0.93	0.89	1.01	1.04	1.01	1.01	0.95	0.98	1.00	0.93	Continue to monitor
SALINAS 115 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.99	0.94	0.88	1.00	1.04	1.00	1.00	0.95	0.99	1.00	0.93	Continue to monitor
SLDAD 4M 115 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.98	0.93	0.89	1.00	1.04	1.01	1.01	0.95	0.98	1.00	0.93	Continue to monitor
SLDAD 5M 115 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.98	0.93	0.89	1.00	1.04	1.01	1.01	0.95	0.98	1.00	0.93	Continue to monitor
SNBENITO 115 kV	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	Low	1.00	0.95	0.89	1.02	1.07	1.02	1.02	0.97	1.00	1.02	0.95	Continue to monitor
GREENVALLEY 60 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.32	1.00	0.93	0.36	1.09	0.39	1.01	0.96	0.56	0.36	1.00	Project: Morgan Hill area reinforcement
ERTA 60 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.34	1.00	0.93	0.38	1.09	0.41	1.01	0.95	0.57	0.38	1.00	Project: Morgan Hill area reinforcement
WTSNVILLE 60 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.37	1.00	0.92	0.41	1.08	0.44	1.00	0.95	0.59	0.41	0.99	Project: Morgan Hill area reinforcement
GRANT RK 60 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.55	0.97	0.92	0.60	1.02	0.61	0.99	0.94	0.69	0.60	0.96	Project: Morgan Hill area reinforcement
AGRILINK 60 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.37	1.00	0.92	0.41	1.08	0.44	1.00	0.95	0.59	0.41	0.99	Project: Morgan Hill area reinforcement
BRIGTANO 60 kV	P7-1:A19:1:_Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	Low	0.57	0.98	0.92	0.61	1.03	0.62	0.99	0.94	0.70	0.61	0.97	Project: Morgan Hill area reinforcement
GABILAN 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.97	0.97	0.90	0.98	1.01	0.98	0.99	0.97	0.97	0.97	0.97	Continue to monitor
LAURELES 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.97	0.97	0.88	0.98	1.02	0.97	0.98	0.95	0.99	0.97	0.97	Continue to monitor
OTTER 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.96	0.96	0.87	0.97	1.01	0.97	0.98	0.94	0.98	0.97	0.96	Continue to monitor
BNA VSTA 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.97	0.96	0.90	0.98	1.01	0.98	0.99	0.97	0.96	0.97	0.96	Continue to monitor
FIRESTNE 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.96	0.96	0.89	0.97	1.01	0.97	0.99	0.96	0.95	0.96	0.96	Continue to monitor
SPENCE 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.96	0.95	0.88	0.96	1.01	0.97	0.99	0.96	0.94	0.95	0.95	Continue to monitor
GONZALES 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.96	0.91	0.87	1.00	1.04	1.02	1.02	0.94	0.97	1.00	0.91	Continue to monitor
GONZALES 60 kV	P7-1:A19:6:_Moss Landing - Crazy Horse #1 and #2 115 kV Lines	P7	DCTL	Low	0.97	0.93	0.89	1.02	1.05	1.03	1.03	0.95	0.98	1.01	0.92	Continue to monitor
CAMPHORA 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.97	0.92	0.88	1.00	1.03	1.02	1.01	0.95	0.98	1.00	0.92	Continue to monitor
SOLEDAD 60 kV	P7-1:A19:4:_Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	Low	0.98	0.93	0.89	1.01	1.04	1.02	1.02	0.95	0.98	1.00	0.92	Continue to monitor

2022-2023 ISO Reliability Assessment - Preliminary Study Results

Study Area: **PG&E Central Coast/Los Padres**

Voltage Deviation



Substation	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)									Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity	2027 SP High CEC Forecast		
SAN MIGL 70 kV	P1-2:A20:49: _SAN MIGL-UNIONPGAE #1 70KV [0]	P1	N-1	<8	<8	10	<8	<8	<8	<8	<8	<8	<8	<8	<8	Continue to monitor

Study Area: **PG&E Central Coast**
PG&E Los Padres

Transient Stability



Contingency	Category	Category Description	Transient Stability Performance						Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios			
			2024 Spring Off-Peak	2027 Summer Peak	2032 Summer Peak	2032 Spring Off-Peak	2024 SP Heavy Renewable & Min Gas Gen	2027 SP High CEC Forecast	

In accordance with TPL-001-4- 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	
			2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity		2027 SP High CEC Forecast

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

Study Area: **PG&E Central Coast/Los Padres**



Single Source Substation with more than 100 MW Load

Substation	Load Served (MW)										Potential Mitigation Solutions	
	2024 Summer Peak	2027 Summer Peak	2032 Summer Peak	2024 Spring Off-Peak	2027 Spring Off-Peak	2024 Winter Peak	2027 Winter Peak	2032 Winter Peak	2024 SP Heavy Renewable & Min Gas Gen	2024 OP Sensitivity		2027 SP High CEC Forecast

No single source substation with more than 100 MW