



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
30760 COBURN 230 36075 COBURN 60.0 1	COBURN 230/60kV TB 2	P1	N-1	32	69	9	63	64	37	72	19	67	101	50	9	sensitivity only
	COBURN 230kV Section 1E	P2-2	Bus	32	69	7	63	65	37	72	19	67	101	50	7	sensitivity only
35910 CRZY_HRS 115 35913 NTVD SW2 115 1	Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	129	132	138	36	35	83	92	93	139	29	73	138	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
	CRAZY HORSE CANYON-SALINAS-SOLEDAD #1 115kV & MOSS LANDING-SALINAS #2 115kV	P6	N-1-1	111	113	<100	<100	<100	<100	<100	<100	118	<100	<100	<100	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
	MOSS LANDING-SALINAS #2 115kV & SALINAS-MOSSLNSW-DOLAN RD 115kV	P6	N-1-1	128	132	<100	<100	<100	<100	<100	<100	139	<100	<100	<100	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
35910 CRZY_HRS 115 35914 NTVD SW1 115 1	Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	129	132	138	36	35	83	92	93	139	29	73	138	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
	CRAZY HORSE CANYON-SALINAS-SOLEDAD #2 115kV & MOSS LANDING-SALINAS #2 115kV	P6	N-1-1	111	113	<100	<100	<100	<100	<100	<100	118	<100	<100	<100	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
	MOSS LANDING-SALINAS #2 115kV & SALINAS-MOSSLNSW-DOLAN RD 115kV	P6	N-1-1	128	132	<100	<100	<100	<100	<100	<100	139	<100	<100	<100	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
35913 NTVD SW2 115 35920 SALINAS 115 1	Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	114	115	120	34	33	74	82	82	120	29	67	120	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
	SALINAS-MOSSLNSW-DOLAN RD 115kV & MOSS LANDING-SALINAS #2 115kV	P6	N-1-1	113	114	<100	<100	<100	<100	<100	<100	120	<100	<100	<100	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
35914 NTVD SW1 115 35920 SALINAS 115 1	Moss Landing - Salinas #1 and #2 115 kV Lines	P7	DCTL	114	115	120	34	33	74	82	82	120	29	67	120	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
	MOSS LANDING-SALINAS #2 115kV & SALINAS-MOSSLNSW-DOLAN RD 115kV	P6	N-1-1	113	114	<100	<100	<100	<100	<100	<100	120	<100	<100	<100	Project: RAS Identified in 2018-2019 TPP In-service date: TBD Short term: Action plan
36048 B.VSTA J 60.0 36050 FIRESTNE 60.0 1	SALINAS-FIRESTONE #2 60kV MOAS OPENED on SPNCE J1-SPENCE	P1	N-1	108	NA	102	30	NA	41	NA	47	NA	NA	56	102	Possible Reconductor or rerate of the Salinas-Firestone #2 Line
	DIABLO 2 25.00kV Gen Unit 1 & SALINAS-FIRESTONE #2 60kV MOAS OPENED on SPNCE J1-SPENCE	P3	G-1/N-1	108	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Possible Reconductor or rerate of the Salinas-Firestone #2 Line
	DUKMOSS1 18.00kV & DUKMOSS2 18.00kV & DUKMOSS3 18.00kV Gen Units & SALINAS-FIRESTONE #2 60kV MOAS OPENED on SPNCE J1-SPENCE	P3	G-1/N-1	108	<100	103	<100	<100	<100	<100	<100	<100	<100	<100	103	Possible Reconductor or rerate of the Salinas-Firestone #2 Line
36251 FTHILTP2 115 36254 SN LS OB 115 1 1	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	101	Diverge	Diverge	<100	<100	<100	<100	<100	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	123	112	122	42	40	74	79	90	125	35	Diverge	124	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	Diverge	64	61	59	19	Diverge	63	60	66	19	106	62	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan



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				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
36252 MORRO BY 115 30915 MORROBAY 230 6 1	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	Diverge	69	NA	66	29	Diverge	52	NA	72	26	111	NA	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	Diverge	69	70	70	29	Diverge	52	49	72	26	117	71	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	101	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	161	Diverge	Diverge	<100	<100	103	Diverge	Diverge	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
36252 MORRO BY 115 36303 GLDTRJC1 115 1 1	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	109	Diverge	Diverge	<100	<100	<100	Diverge	Diverge	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
36252 MORRO BY 115 36304 GLDTRJC2 115 1 1	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	107	Diverge	Diverge	<100	<100	<100	<100	<100	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
36253 FTHILTP1 115 36254 SN LS OB 115 1 1	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	103	Diverge	Diverge	<100	<100	<100	Diverge	Diverge	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
36254 SN LS OB 115 34796 CARRIZO 115 1 1	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	<100	Diverge	Diverge	<100	<100	<100	Diverge	<100	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
36254 SN LS OB 115 36266 SNTA MRA 115 1	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	229	205	237	68	73	135	156	204	250	65	Diverge	236	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	Diverge	81	85	95	37	Diverge	63	67	86	33	159	87	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	Diverge	72	NA	88	32	Diverge	66	NA	75	29	145	NA	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	Diverge	72	75	94	32	Diverge	66	65	75	29	153	76	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	134	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan



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				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	281	Diverge	Diverge	<100	<100	175	Diverge	Diverge	Diverge	<100	125	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MESA-SISQUOC 115kV & MESA-PGE-SNTA MRA 115kV	P6	N-1-1	100	103	109	<100	<100	<100	<100	<100	108	<100	<100	109	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MORRO BAY-DIABLO 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	239	<100	<100	<100	<100	142	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MORRO BAY-MESA 230kV & DIABLO-MESA 230kV	P6	N-1-1	<100	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
36254 SN LS OB 115 36278 OCEANO 115 1	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	Diverge	61	64	68	25	Diverge	45	48	65	21	114	66	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	Diverge	55	NA	63	22	Diverge	48	NA	57	18	104	NA	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	Diverge	55	55	68	22	Diverge	48	46	57	18	109	58	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	<100	Diverge	Diverge	<100	<100	<100	Diverge	Diverge	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MORRO BAY-MESA 230kV & DIABLO-MESA 230kV	P6	N-1-1	<100	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MORRO BAY-MESA 230kV & MORRO BAY-DIABLO 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	102	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
36256 MESA_PGE 115 36280 CALLENDERSS 115 1	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	Diverge	45	50	75	22	Diverge	29	33	47	21	127	50	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	Diverge	34	NA	68	18	Diverge	30	NA	36	19	112	NA	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	Diverge	34	44	74	18	Diverge	30	33	36	19	120	46	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	102	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	<100	Diverge	Diverge	<100	<100	<100	Diverge	Diverge	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MORRO BAY-MESA 230kV & DIABLO-MESA 230kV	P6	N-1-1	<100	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan



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	MORRO BAY-MESA 230kV & MORRO BAY-DIABLO 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	110	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
36260 SISQUOC 115 36286 PALMR 115 1	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	127	59	63	42	26	64	39	49	71	23	Diverge	63	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Mesa-Divide #1 and #2 115 kV Lines	P7	DCTL	76	41	42	92	50	55	33	31	42	48	134	42	sensitivity only
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	110	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA-DIVIDE #2 115kV & MESA-DIVIDE #1 115kV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	113	<100	sensitivity only
36264 S.YNZ JT 115 36288 ZACA 115 1	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	98	41	43	28	18	51	28	33	48	15	Diverge	43	sensitivity only
	Mesa-Divide #1 and #2 115 kV Lines	P7	DCTL	59	29	29	86	41	43	23	22	29	38	128	29	sensitivity only
	MESA-DIVIDE #2 115kV & MESA-DIVIDE #1 115kV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	104	<100	sensitivity only
36266 SNTA MRA 115 36269 FRWAYTP 115 1	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	133	117	127	44	48	87	102	126	141	43	Diverge	126	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	177	<100	<100	<100	<100	141	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MORRO BAY-DIABLO 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	<100	<100	<100	<100	<100	197	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
36269 FRWAYTP 115 36260 SISQUOC 115 1 1	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	118	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MORRO BAY-DIABLO 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	<100	<100	<100	<100	<100	101	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
36278 OCEANO 115 36280 CALLENDERSS 115 1	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	Diverge	46	50	79	26	Diverge	29	32	47	25	131	50	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Diablo-Mesa 230 kV Lines	P7	DCTL	Diverge	35	NA	72	21	Diverge	29	NA	37	21	116	NA	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Morro Bay-Mesa and Morro Bay-Diablo 230 kV Lines	P7	DCTL	Diverge	35	43	79	21	Diverge	29	32	37	21	124	44	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	106	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	<100	Diverge	Diverge	<100	<100	<100	Diverge	Diverge	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
	MORRO BAY-MESA 230kV & DIABLO-MESA 230kV	P6	N-1-1	<100	<100	<100	<100	<100	Diverge	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MORRO BAY-MESA 230kV & MORRO BAY-DIABLO 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	114	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan



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36286 PALMR 115 36287 AECCEORTP 115 1	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	118	56	59	40	24	60	37	46	66	22	Diverge	59	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	Mesa-Divide #1 and #2 115 kV Lines	P7	DCTL	71	39	40	90	49	51	31	30	40	46	130	40	sensitivity only
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	102	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA-DIVIDE #2 115kV & MESA-DIVIDE #1 115kV	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	108	<100	sensitivity only
36287 AECCEORTP 115 36288 ZACA 115 1	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	95	46	49	27	19	49	31	37	54	16	Diverge	48	sensitivity only
	Mesa-Divide #1 and #2 115 kV Lines	P7	DCTL	57	33	33	76	42	42	26	24	33	39	115	33	sensitivity only
36303 GLDTRJC1 115 36251 FTHILTP2 115 1 1	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	101	Diverge	Diverge	<100	<100	<100	<100	<100	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
36304 GLDTRJC2 115 36253 FTHILTP1 115 1 1	DIABLO-MESA 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	107	Diverge	Diverge	<100	<100	<100	<100	<100	Diverge	<100	<100	Diverge	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
36354 SAN MIGL 70.0 34574 COLNGA 1 70.0 1	PASO ROBLES-TEMPLETON 70kV	P1	N-1	Diverge	38	29	91	6	69	19	22	39	16	66	29	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
	DIABLO 1 25.00kV Gen Unit 1 & PASO ROBLES-TEMPLETON 70kV	P3	G-1/N-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
	TEMPLETON 230kV/70kV	P1	N-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
PASO ROBLES-TEMPLETON 70kV	TEMPLETON 230kV/70kV	P1	N-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
SAN MIGUEL-PASO ROBLES 70kV	TEMPLETON 230kV/70kV	P1	N-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
	PASO ROBLES-TEMPLETON 70kV	P1	N-1	Diverge	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan



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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
1257-RD 70 kV	Base Case	P0	Basecase	1.02	1.02	1.05	1.04	1.05	1.02	1.03	1.04	1.02	1.05	1.03	1.04	Load power factor correction and voltage support if needed
AERA_ENG 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
AERA_MTR 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
AERA_TP1 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
AERA_TP2 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
AERA_TP3 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
BA FOOD1 60 kV	Base Case	P0	Basecase	1.05	1.04	1.04	1.05	1.05	1.05	1.04	1.03	1.04	1.04	1.05	1.04	Load power factor correction and voltage support if needed
BA FOOD2 60 kV	Base Case	P0	Basecase	1.05	1.04	1.04	1.05	1.05	1.05	1.04	1.03	1.04	1.04	1.05	1.04	Load power factor correction and voltage support if needed
BIG BASN 60 kV	Base Case	P0	Basecase	1.03	1.04	1.04	1.05	1.05	1.05	1.04	1.03	1.04	1.05	1.06	1.04	Load power factor correction and voltage support if needed
BURNS 60 kV	Base Case	P0	Basecase	1.02	1.04	1.04	1.05	1.05	1.05	1.04	1.03	1.03	1.05	1.06	1.04	Load power factor correction and voltage support if needed
BURNS J1 60 kV	Base Case	P0	Basecase	1.02	1.04	1.04	1.05	1.05	1.05	1.04	1.03	1.03	1.05	1.06	1.04	Load power factor correction and voltage support if needed
BURNS J2 60 kV	Base Case	P0	Basecase	1.02	1.04	1.04	1.05	1.05	1.05	1.04	1.03	1.03	1.05	1.06	1.04	Load power factor correction and voltage support if needed
CHOLAME 70 kV	Base Case	P0	Basecase	1.02	1.02	1.02	1.05	1.05	1.05	1.05	1.02	1.02	1.05	1.02	1.02	Load power factor correction and voltage support if needed
CHVSANARDO 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
CMP EVRS 115 kV	Base Case	P0	Basecase	1.04	1.04	1.04	1.06	1.06	1.04	1.03	1.01	1.04	1.06	1.04	1.04	Load power factor correction and voltage support if needed
COBURN 60 kV	Base Case	P0	Basecase	1.05	1.05	1.04	1.05	1.05	1.05	1.04	1.03	1.05	1.04	1.05	1.04	Load power factor correction and voltage support if needed
COBURN J 60 kV	Base Case	P0	Basecase	1.05	1.05	1.04	1.05	1.05	1.05	1.05	1.03	1.05	1.04	1.05	1.04	Load power factor correction and voltage support if needed
CRUSHER 60 kV	Base Case	P0	Basecase	1.02	1.03	1.04	1.05	1.05	1.05	1.04	1.03	1.03	1.05	1.06	1.04	Load power factor correction and voltage support if needed
DIVIDE 70 kV	Base Case	P0	Basecase	1.03	1.04	1.05	1.04	1.05	1.03	1.03	1.04	1.03	1.05	1.03	1.04	Load power factor correction and voltage support if needed
GRN VLLY 115 kV	Base Case	P0	Basecase	1.04	1.04	1.03	1.06	1.05	1.03	1.03	1.02	1.04	1.05	1.03	1.03	Load power factor correction and voltage support if needed
JOLON 60 kV	Base Case	P0	Basecase	1.06	1.05	1.03	1.06	1.07	1.06	1.05	1.02	1.05	1.06	1.10	1.03	Load power factor correction and voltage support if needed
JOLON TP 60 kV	Base Case	P0	Basecase	1.05	1.04	1.03	1.05	1.05	1.05	1.05	1.03	1.04	1.05	1.06	1.03	Load power factor correction and voltage support if needed
KCTY_TAP 60 kV	Base Case	P0	Basecase	1.05	1.04	1.04	1.05	1.05	1.05	1.04	1.03	1.04	1.04	1.05	1.04	Load power factor correction and voltage support if needed
KING CTY 60 kV	Base Case	P0	Basecase	1.05	1.04	1.03	1.05	1.05	1.05	1.04	1.03	1.04	1.05	1.06	1.03	Load power factor correction and voltage support if needed

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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
L.STAR J 60 kV	Base Case	P0	Basecase	1.02	1.03	1.04	1.05	1.04	1.05	1.04	1.03	1.03	1.05	1.06	1.04	Load power factor correction and voltage support if needed
LCCHS J1 60 kV	Base Case	P0	Basecase	1.06	1.05	1.02	1.06	1.06	1.06	1.05	1.02	1.05	1.06	1.07	1.02	Load power factor correction and voltage support if needed
LCCHS J2 60 kV	Base Case	P0	Basecase	1.05	1.04	1.03	1.05	1.05	1.05	1.05	1.02	1.04	1.05	1.06	1.03	Load power factor correction and voltage support if needed
LONE STR 60 kV	Base Case	P0	Basecase	1.02	1.03	1.04	1.05	1.04	1.04	1.04	1.03	1.03	1.05	1.06	1.04	Load power factor correction and voltage support if needed
LOS CCHS 60 kV	Base Case	P0	Basecase	1.06	1.05	1.02	1.06	1.06	1.06	1.05	1.02	1.05	1.06	1.07	1.02	Load power factor correction and voltage support if needed
LOS OSTS 60 kV	Base Case	P0	Basecase	1.05	1.04	1.03	1.05	1.05	1.05	1.05	1.02	1.04	1.05	1.06	1.03	Load power factor correction and voltage support if needed
M 115 kV	Base Case	P0	Basecase	1.03	1.03	1.03	1.06	1.06	1.04	1.03	1.01	1.03	1.06	1.04	1.03	Load power factor correction and voltage support if needed
OILFLDS 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
ORCHRD J 60 kV	Base Case	P0	Basecase	1.05	1.04	1.03	1.05	1.05	1.05	1.05	1.03	1.04	1.05	1.06	1.03	Load power factor correction and voltage support if needed
PAUL SWT 115 kV	Base Case	P0	Basecase	1.03	1.03	1.03	1.06	1.06	1.04	1.03	1.01	1.03	1.06	1.04	1.03	Load power factor correction and voltage support if needed
PT MRTTI 60 kV	Base Case	P0	Basecase	1.02	1.03	1.04	1.05	1.05	1.05	1.04	1.03	1.03	1.05	1.06	1.04	Load power factor correction and voltage support if needed
ROB ROY 115 kV	Base Case	P0	Basecase	1.04	1.04	1.03	1.06	1.06	1.04	1.03	1.01	1.04	1.06	1.04	1.03	Load power factor correction and voltage support if needed
S ARDOJ1 60 kV	Base Case	P0	Basecase	1.04	1.04	1.03	1.05	1.04	1.05	1.05	1.03	1.04	1.04	1.04	1.03	Load power factor correction and voltage support if needed
S ARDOJ2 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.04	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
SALN RVR 60 kV	Base Case	P0	Basecase	1.04	1.04	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
SAN ARDO 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.04	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
SARG CYN 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
TEMPL J 70 kV	Base Case	P0	Basecase	1.03	1.02	1.01	1.05	1.03	1.02	1.03	1.01	1.02	1.03	1.02	1.01	Load power factor correction and voltage support if needed
TEMPLT7 70 kV	Base Case	P0	Basecase	1.03	1.02	1.01	1.05	1.03	1.03	1.03	1.01	1.02	1.03	1.02	1.01	Load power factor correction and voltage support if needed
TEXCO J1 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
TEXCO J2 60 kV	Base Case	P0	Basecase	1.04	1.03	1.03	1.05	1.04	1.05	1.05	1.03	1.03	1.04	1.04	1.03	Load power factor correction and voltage support if needed
VAFB A-N 70 kV	Base Case	P0	Basecase	1.02	1.02	1.05	1.04	1.05	1.02	1.03	1.04	1.02	1.05	1.04	1.04	Load power factor correction and voltage support if needed
VAFB SSA 70 kV	Base Case	P0	Basecase	1.02	1.02	1.05	1.04	1.05	1.02	1.03	1.04	1.02	1.05	1.03	1.04	Load power factor correction and voltage support if needed
VAFB SSB 70 kV	Base Case	P0	Basecase	1.02	1.02	1.05	1.04	1.05	1.02	1.03	1.04	1.02	1.05	1.03	1.04	Load power factor correction and voltage support if needed

Study Area: PG&E Central Coast  
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High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
AGRILINK 60 kV	WTSNVLLE-SALINAS2 60kV	P1	N-1	1.08	1.08	1.07	1.11	1.11	1.08	1.08	1.06	1.08	1.11	1.08	1.07	Continue to monitor
CIC JCT 60 kV	WTSNVLLE-SALINAS2 60kV	P1	N-1	1.08	1.08	1.07	1.11	1.11	1.08	1.08	1.06	1.08	1.11	1.08	1.07	Continue to monitor
ERTA 60 kV	WTSNVLLE-SALINAS2 60kV	P1	N-1	1.08	1.08	1.07	1.11	1.11	1.08	1.08	1.06	1.08	1.11	1.08	1.07	Continue to monitor
ERTA JCT 60 kV	WTSNVLLE-SALINAS2 60kV	P1	N-1	1.08	1.08	1.07	1.11	1.11	1.08	1.08	1.06	1.08	1.11	1.08	1.07	Continue to monitor
GREN VLY 60 kV	GREEN VALLEY-WATSONVILLE 60kV	P1	N-1	1.09	1.09	1.08	1.11	1.11	1.08	1.08	1.07	1.09	1.11	1.08	1.08	Continue to monitor
GREN VLY 60 kV	WTSNVLLE-SALINAS2 60kV	P1	N-1	1.08	1.08	1.07	1.11	1.11	1.08	1.08	1.06	1.08	1.11	1.08	1.07	Continue to monitor
JOLON 60 kV	COBURN 230/60kV TB 1	P1	N-1	1.06	1.05	1.02	1.07	1.07	1.06	1.06	1.01	1.05	1.07	1.11	1.02	sensitivity only
PASO ROBLES AREA 60 kV	TEMPLETON 230kV/70kV	P1	N-1	Diverge	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
PSA RBLs 70 kV	PASO ROBLES-TEMPLETON 70kV	P1	N-1	0.73	1.01	0.99	1.05	1.04	0.82	1.02	0.99	1.01	1.04	0.85	0.99	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
SAN MIGL 70 kV	PASO ROBLES-TEMPLETON 70kV	P1	N-1	0.76	1.00	0.99	1.03	1.03	0.84	1.02	0.99	1.00	1.03	0.88	0.99	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
WTSNVLLE 60 kV	WTSNVLLE-SALINAS2 60kV	P1	N-1	1.08	1.08	1.07	1.11	1.11	1.08	1.08	1.06	1.08	1.11	1.08	1.07	Continue to monitor
AECCEOR 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.61	0.72	0.53	0.99	1.03	0.87	0.89	0.56	0.58	1.02	0.50	0.53	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
AECCEOR 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.35	1.02	0.94	1.02	1.02	0.48	1.04	0.90	1.00	1.03	1.03	0.93	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
AECCEORTP 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.61	0.72	0.53	0.99	1.03	0.87	0.89	0.56	0.58	1.02	0.50	0.53	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
AECCEORTP 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.35	1.02	0.94	1.02	1.02	0.48	1.04	0.90	1.00	1.03	1.03	0.93	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
BUELLTON 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.59	0.72	0.52	0.99	1.04	0.87	0.90	0.55	0.57	1.03	0.45	0.52	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
BUELLTON 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.34	1.02	0.94	1.02	1.02	0.47	1.04	0.90	1.00	1.03	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
CABRILLO 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.59	0.73	0.53	0.99	1.05	0.87	0.91	0.55	0.58	1.03	0.41	0.52	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
CALLENDERSS 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.86	0.89	0.81	1.03	1.03	0.96	0.95	0.82	0.84	1.03	0.89	0.80	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
DIABLOCN 230 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.37	0.98	0.93	1.04	1.02	0.49	1.01	0.89	0.96	1.02	1.01	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan



Study Area: PG&E Central Coast  
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High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
FOOTHILL 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.90	0.93	0.87	1.03	1.03	0.99	0.98	0.88	0.89	1.03	0.92	0.86	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
FOOTHILL 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.69	0.99	0.93	1.03	1.02	0.71	1.01	0.90	0.97	1.03	1.01	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
FRWAYTP 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.64	0.73	0.57	1.00	1.02	0.88	0.88	0.59	0.60	1.02	0.59	0.56	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
FTHILTP1 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.90	0.93	0.87	1.03	1.03	0.99	0.98	0.88	0.89	1.03	0.92	0.86	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
FTHILTP1 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.69	0.99	0.93	1.03	1.02	0.71	1.01	0.90	0.97	1.03	1.01	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
FTHILTP2 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.90	0.93	0.87	1.03	1.03	0.99	0.98	0.88	0.89	1.03	0.92	0.86	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
FTHILTP2 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.69	0.99	0.93	1.03	1.02	0.71	1.01	0.90	0.97	1.03	1.01	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
GAREY 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.63	0.73	0.56	0.99	1.02	0.88	0.89	0.58	0.59	1.02	0.57	0.55	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
GLDTRJC1 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.91	0.93	0.87	1.03	1.03	0.99	0.98	0.88	0.89	1.03	0.92	0.87	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
GLDTRJC1 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.70	0.99	0.93	1.03	1.02	0.71	1.01	0.90	0.97	1.03	1.01	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
GLDTRJC2 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.92	0.94	0.88	1.03	1.03	0.99	0.98	0.89	0.90	1.03	0.93	0.88	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
GLDTRJC2 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.71	0.99	0.94	1.03	1.02	0.73	1.01	0.90	0.97	1.03	1.01	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
GOLDTREE 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.91	0.93	0.87	1.03	1.03	0.99	0.98	0.88	0.89	1.03	0.92	0.86	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
GOLDTREE 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.70	0.99	0.93	1.03	1.02	0.71	1.01	0.90	0.97	1.03	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
LOMPCJ2 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	NA	1.00	0.94	1.01	1.01	0.46	1.03	0.89	0.98	1.02	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
MANVILLE 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	NA	1.00	0.93	1.01	1.01	0.46	1.02	0.89	0.98	1.01	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan

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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
MESA PGE 230 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.36	0.97	0.90	1.04	1.01	0.47	1.02	0.86	0.94	1.02	0.98	0.88	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
OCEANO 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.87	0.89	0.81	1.03	1.03	0.96	0.95	0.82	0.85	1.03	0.89	0.80	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
OCEANO 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.64	1.01	0.94	1.03	1.03	0.56	1.03	0.90	0.99	1.03	1.03	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
PALMR 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.62	0.72	0.55	0.99	1.03	0.88	0.89	0.57	0.58	1.02	0.53	0.55	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
PURISIMA 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	NA	1.01	0.94	1.01	1.01	0.46	1.03	0.89	0.98	1.02	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
PURSMAJ1 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	NA	1.01	0.94	1.01	1.01	0.46	1.03	0.89	0.98	1.02	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
S.M.ASSO 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.63	0.73	0.56	0.99	1.02	0.88	0.89	0.58	0.59	1.02	0.56	0.55	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
S.YNZ JT 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.60	0.72	0.52	0.99	1.04	0.87	0.90	0.55	0.58	1.03	0.45	0.52	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
S.YNZ JT 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.34	1.02	0.94	1.02	1.02	0.48	1.04	0.90	1.00	1.03	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SISQUOC 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.63	0.73	0.56	0.99	1.02	0.88	0.89	0.58	0.59	1.02	0.57	0.55	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SN LS OB 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.89	0.91	0.84	1.03	1.03	0.98	0.97	0.85	0.87	1.03	0.90	0.84	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SN LS OB 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.67	1.00	0.93	1.03	1.03	0.69	1.02	0.90	0.98	1.03	1.01	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SNTA MRA 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.66	0.74	0.59	1.00	1.02	0.88	0.88	0.61	0.62	1.01	0.63	0.58	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SNTA YNZ 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.59	0.72	0.52	0.99	1.04	0.87	0.90	0.55	0.58	1.03	0.44	0.52	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SNTA YNZ 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.34	1.02	0.94	1.02	1.02	0.47	1.04	0.90	1.00	1.03	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SURF 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	NA	1.02	0.94	1.01	1.02	0.47	1.04	0.89	1.00	1.02	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan

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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
SW149CBOSNYZ 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.59	0.73	0.53	0.99	1.05	0.87	0.91	0.55	0.58	1.03	0.41	0.52	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SW149MANVLTA 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	NA	1.00	0.94	1.01	1.01	0.46	1.03	0.89	0.98	1.01	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
UNIONOIL 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.86	0.89	0.81	1.03	1.03	0.96	0.95	0.82	0.84	1.03	0.89	0.80	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
ZACA 115 kV	MESA-PGE 115kV - Section 2D & 1D	P2-4	Bus-Tie-Breaker	0.61	0.72	0.53	0.99	1.04	0.87	0.90	0.55	0.58	1.03	0.48	0.53	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
ZACA 115 kV	MORROBAY 230kV - Section 1E & 2E	P2-4	Bus-Tie-Breaker	0.35	1.02	0.94	1.02	1.02	0.48	1.04	0.90	1.00	1.03	1.02	0.92	Project: North of Mesa Upgrades (On Hold) In-service date: TBD Short term: Action plan
SALINAS 115 kV	Salinas 115kV BAAH Bus #2 (failure of non-redundent relay)	P5	Non-Redundant Relay	-5.51	-5.50	-5.61	0.45	0.46	0.25	-4.95	0.21	-5.85	0.50	0.31	-5.61	Protection Upgrade
AECCEOR 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.52	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
AECCEOR 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.52	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
BUELLTON 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
BUELLTON 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
CABRILLO 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
CABRILLO 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
CALLENDERSS 115 kV	CALLENDAR SW STA-MESA 115kV & P1-3:A20:10:_MORROBAY 230/115kV TB 6	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.88	sensitivity only
CALLENDERSS 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.79	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
CALLENDERSS 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.79	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
CALLENDERSS 115 kV	MORROBAY 230/115kV TB 6 & P1-2:A20:9:_CALLENDAR SW STA-MESA 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.91	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only

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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
CMP EVRS 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.10	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Continue to monitor
CMP EVRS 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & P1-2:A19:34:_MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
CMP EVRS 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.10	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Continue to monitor
CMP EVRS 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & P1-2:A19:33:_MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	Continue to monitor
DIVVIDE 115 kV	MESA-DIVIDE #1 115kV & MESA-DIVIDE #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.90	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
DIVVIDE 115 kV	MESA-DIVIDE #2 115kV & MESA-DIVIDE #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.90	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
FAIRWAY 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.57	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
FAIRWAY 115 kV	MESA PGE 230/115kV TB 2 & P1-3:A20:9:_MESA PGE 230/115kV TB 3	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.16	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
FAIRWAY 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.57	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
FAIRWAY 115 kV	MESA PGE 230/115kV TB 3 & P1-3:A20:8:_MESA PGE 230/115kV TB 2	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.16	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
FOOTHILL 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.84	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
FOOTHILL 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.84	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
GAREY 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.54	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
GAREY 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.54	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
GOLDTREE 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.84	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
GOLDTREE 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.84	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan

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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
GRN VLLY 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & P1-2:A19:34:_MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
GRN VLLY 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & P1-2:A19:33:_MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
M 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.10	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Continue to monitor
M 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & P1-2:A19:34:_MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
M 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.10	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Continue to monitor
M 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & P1-2:A19:33:_MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
MANVILLE 115 kV	MESA-DIVIDE #1 115kV & MESA-DIVIDE #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.88	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MANVILLE 115 kV	MESA-DIVIDE #1 115kV & P1-2:A20:21:_MESA-DIVIDE #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
MANVILLE 115 kV	MESA-DIVIDE #2 115kV & MESA-DIVIDE #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.88	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MANVILLE 115 kV	MESA-DIVIDE #2 115kV & P1-2:A20:20:_MESA-DIVIDE #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
MANVILLE 115 kV	MESA-PGE SVD=v & P1-2:A20:25:_MORRO BAY-MESA 230kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.91	0.92	>0.9,<1.1	>0.9,<1.1	0.90	sensitivity only
MESA PGE 230 kV	MESA-PGE SVD=v & MORRO BAY-MESA 230kV	P6	N-1-1	0.89	>0.9,<1.1	0.88	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MESA PGE 230 kV	MESA-PGE SVD=v & P1-2:A20:25:_MORRO BAY-MESA 230kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	0.90	>0.9,<1.1	>0.9,<1.1	0.87	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MESA PGE 230 kV	MORRO BAY-MESA 230kV & MESA-PGE SVD=v	P6	N-1-1	0.92	0.91	0.89	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MESA PGE 230 kV	MORRO BAY-MESA 230kV & P1-4:A20:4:_MESA-PGE SVD=v	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	0.91	>0.9,<1.1	>0.9,<1.1	0.89	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MESA_PGE 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.58	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MESA_PGE 115 kV	MESA PGE 230/115kV TB 2 & P1-3:A20:9:_MESA PGE 230/115kV TB 3	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.16	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan



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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
MESA_PGE 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.58	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MESA_PGE 115 kV	MESA PGE 230/115kV TB 3 & P1-3:A20:8: _MESA PGE 230/115kV TB 2	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.16	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MORRO BY 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.89	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
MORRO BY 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.89	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
OCEANO 115 kV	CALLENDAR SW STA-MESA 115kV & P1-3:A20:10: _MORROBAY 230/115kV TB 6	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
OCEANO 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.79	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
OCEANO 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.79	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
OCEANO 115 kV	MORROBAY 230/115kV TB 6 & P1-2:A20:9: _CALLENDAR SW STA-MESA 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.91	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
PALMR 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.53	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
PALMR 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.53	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
PAUL SWT 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.10	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Continue to monitor
PAUL SWT 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & P1-2:A19:34: _MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
PAUL SWT 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.10	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Continue to monitor
PAUL SWT 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & P1-2:A19:33: _MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
PURISIMA 115 kV	MESA-DIVIDE #1 115kV & MESA-DIVIDE #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.89	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
PURISIMA 115 kV	MESA-DIVIDE #1 115kV & P1-2:A20:21: _MESA-DIVIDE #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only

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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
PURISIMA 115 kV	MESA-DIVIDE #2 115kV & MESA-DIVIDE #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.89	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
PURISIMA 115 kV	MESA-DIVIDE #2 115kV & P1-2:A20:20: MESA-DIVIDE #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
ROB ROY 115 kV	MOSS LANDING-GREEN VALLEY #1 115kV & P1-2:A19:34: MOSS LANDING-GREEN VALLEY #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
ROB ROY 115 kV	MOSS LANDING-GREEN VALLEY #2 115kV & P1-2:A19:33: MOSS LANDING-GREEN VALLEY #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.12	>0.9,<1.1	>0.9,<1.1	sensitivity only
S.M.ASSO 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.56	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
S.M.ASSO 115 kV	MESA PGE 230/115kV TB 2 & P1-3:A20:9: MESA PGE 230/115kV TB 3	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.13	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
S.M.ASSO 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.56	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
S.M.ASSO 115 kV	MESA PGE 230/115kV TB 3 & P1-3:A20:8: MESA PGE 230/115kV TB 2	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	1.13	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SISQUOC 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.54	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SISQUOC 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.54	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SN LS OB 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.81	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SN LS OB 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.81	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SNTA MRA 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.55	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SNTA MRA 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.55	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SNTA MRA 115 kV	MORRO BAY-DIABLO 230kV & MORRO BAY-MESA 230kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.88	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SNTA YNZ 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan

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

High/Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
SNNTA YNZ 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SW149CBOSNYZ115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SW149CBOSNYZ115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.51	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SW149MANVLTA115 kV	MESA-DIVIDE #1 115kV & MESA-DIVIDE #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.89	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SW149MANVLTA115 kV	MESA-DIVIDE #1 115kV & P1-2:A20:21:_MESA-DIVIDE #2 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
SW149MANVLTA115 kV	MESA-DIVIDE #2 115kV & MESA-DIVIDE #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	0.89	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
SW149MANVLTA115 kV	MESA-DIVIDE #2 115kV & P1-2:A20:20:_MESA-DIVIDE #1 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
SW149MANVLTA115 kV	MESA-PGE SVD=v & P1-2:A20:25:_MORROBAY-MESA 230kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.92	0.92	>0.9,<1.1	>0.9,<1.1	0.90	sensitivity only
UNIONOIL 115 kV	CALLENDAR SW STA-MESA 115kV & P1-3:A20:10:_MORROBAY 230/115kV TB 6	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.88	sensitivity only
UNIONOIL 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.79	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
UNIONOIL 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.79	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
UNIONOIL 115 kV	MORROBAY 230/115kV TB 6 & P1-2:A20:9:_CALLENDAR SW STA-MESA 115kV	P6	N-1-1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.91	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	0.89	sensitivity only
ZACA 115 kV	MESA PGE 230/115kV TB 2 & MESA PGE 230/115kV TB 3	P6	N-1-1	0.52	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
ZACA 115 kV	MESA PGE 230/115kV TB 3 & MESA PGE 230/115kV TB 2	P6	N-1-1	0.52	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	>0.9,<1.1	Project: South of Mesa Upgrades In-service date: 2023 Short term: Action plan
CMP EVRS 115 kV	Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	1.04	1.04	1.03	1.10	1.10	1.05	1.05	1.00	1.04	1.12	1.05	1.03	sensitivity only
GRN VLLY 115 kV	Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	1.04	1.04	1.02	1.10	1.09	1.05	1.04	1.00	1.04	1.12	1.05	1.02	sensitivity only
M 115 kV	Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	1.03	1.03	1.03	1.10	1.10	1.05	1.05	1.00	1.03	1.12	1.05	1.03	sensitivity only
PAUL SWT 115 kV	Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	1.03	1.03	1.03	1.10	1.10	1.05	1.05	1.00	1.03	1.12	1.05	1.03	sensitivity only
ROB ROY 115 kV	Moss Landing - Green Valley #1 and #2 115 kV Lines	P7	DCTL	1.04	1.04	1.03	1.10	1.09	1.05	1.04	1.00	1.04	1.12	1.05	1.03	sensitivity only

Study Area: PG&E Central Coast  
PG&E 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)				ISO Approved Projects & Potential Mitigation Solutions
				2021 Summer Peak	2024 Summer Peak	2029 Summer Peak	2021 Winter Peak	2024 Winter Peak	2029 Winter Peak	2021 Spring Off-Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	2021 SP Heavy Renewable & Min Gas Gen	2029 Retirement of QF Generations	
AGRILINK 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	14	14	9	14	12	12	13	8	10	12	13	9	Load power factor correction and voltage support if needed
BRIGTANO 60 kV	GREEN VALLEY-WATSONVILLE 60kV	P1	N-1	9	9	9	9	8	8	8	5	9	8	8	8	Load power factor correction and voltage support if needed
BRIGTANO 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	9	9	6	9	8	8	9	5	7	8	9	6	Load power factor correction and voltage support if needed
CIC JCT 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	14	14	10	14	12	13	13	9	10	12	13	10	Load power factor correction and voltage support if needed
ERTA 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	15	14	10	14	13	13	14	9	11	13	14	10	Load power factor correction and voltage support if needed
ERTA JCT 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	15	14	10	14	13	13	14	9	11	13	14	10	Load power factor correction and voltage support if needed
GRANT JT 60 kV	GREEN VALLEY-WATSONVILLE 60kV	P1	N-1	9	9	9	9	8	8	9	5	9	8	8	9	Load power factor correction and voltage support if needed
GRANT JT 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	9	9	6	9	8	8	9	6	7	8	9	6	Load power factor correction and voltage support if needed
GRANT RK 60 kV	GREEN VALLEY-WATSONVILLE 60kV	P1	N-1	9	9	9	9	8	8	9	5	9	8	8	9	Load power factor correction and voltage support if needed
GRANT RK 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	9	9	6	9	8	8	9	6	7	8	9	6	Load power factor correction and voltage support if needed
GREN VLY 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	15	15	11	15	14	14	15	10	11	14	14	11	Load power factor correction and voltage support if needed
PSA RBLS 70 kV	PASO ROBLES-TEMPLETON 70kV	P1	N-1	29	0	2	2	0	20	1	1	1	0	16	1	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
SAN MIGL 70 kV	PASO ROBLES-TEMPLETON 70kV	P1	N-1	25	0	1	2	0	17	0	1	0	0	13	1	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
SAN MIGL 70 kV	SAN MIGL-ESTRELLA #1 70kV	P1	N-1	NA	9	9	NA	2	NA	4	9	9	2	NA	8	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
SAN MIGL 70 kV	SAN MIGUEL-PASO ROBLES 70kV	P1	N-1	9	NA	NA	4	NA	6	NA	NA	NA	NA	4	NA	Project: Estrella In Service Date: Nov 2023 Short term: Action Plan
WTSNVLLE 60 kV	GREEN VALLEY-WATSONVILLE 60kV	P1	N-1	13	13	13	13	12	12	13	7	13	12	12	13	Load power factor correction and voltage support if needed
WTSNVLLE 60 kV	GRN VLLY 115/60kV TB 1	P1	N-1	14	14	9	13	12	12	13	8	10	12	13	9	Load power factor correction and voltage support if needed

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 Summer Peak	2029 Summer Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	
Diablo 3Ø fault with normal clearing.	P1-1	N-1	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Sw Station 3Ø fault with normal clearing.	P1-2	N-1	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Sw Station 230/115 kV Bank #4 3Ø fault with normal clearing.	P1-3	N-1	No issue	No issue	No issue	No issue	No issue	No Violation
Mesa 115 kv SVD 3Ø fault with normal clearing.	P1-4	N-1	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Sw Sta 230 kV line breaker SLG fault with normal clearing.	P2-3	Non-Bus-Tie Breaker	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Sw Station 115kv bus-tie breaker SLG fault with normal clearing.	P2-4	Bus-Tie Breaker	No issue	No issue	WECC criteria not met	No issue	No issue	Under Review With PTO
Diablo 1 3Ø fault with normal clearing with Diablo 2 offline in the base case.	P3-1	G-1/N-1	No issue	No issue	No issue	No issue	No issue	No Violation
MossIndswsta-Lasaguilas 230 kV line 3Ø fault with normal clearing with Diablo Unit #2 offline in the base case.	P3-2	G-1/N-1	No issue	No issue	No issue	No issue	No issue	No Violation
MossIndswsta 230/115 kVBank # 4 3Ø fault with normal clearing with Diablo Unit #2 offline in the base case.	P3-3	G-1/N-1	No issue	No issue	No issue	No issue	No issue	No Violation
Mesa 115 kV SVD 3Ø fault with normal clearing with Diablo offline in the base case.	P3-4	G-1/N-1	No issue	No issue	No issue	No issue	No issue	No Violation
Duke Moss SLG fault expanded to elements lost due to stuck breaker and clear fault from remote breakers with normal clearing time.	P4-1	Stuck Breaker	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Switching Station SLG fault wih stuck breaker expanded o Mosslnsw-Duke Moss and MossIndsw-Mecalf	P4-2	Stuck Breaker	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Switching Station #4 115/230 kv transformer SLG fault wih stuck breaker	P4-3	Stuck Breaker	No issue	No issue	No issue	No issue	No issue	No Violation
Mesa 115 kV SVD SLG fault expanded to elements lost due to stuck breaker and clear fault from remote breakers with normal clearing time.	P4-4	Stuck Breaker	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Sw Station 115 kV bus SVD SLG fault expanded to elements lost due to stuck breaker and clear fault from remote breakers with normal clearing time.	P4-5	Stuck Breaker	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Sw Station 115 kV bus-tie breaker SVD SLG fault expanded to elements lost due to stuck breaker and clear fault from remote breakers with normal clearing time.	P4-6	Stuck Breaker	No issue	No issue	WECC criteria not met	No issue	No issue	Under Review With PTO
Duke Moss #6 unit with delayed clearing	P5-1	Non-Redundant Relay	No issue	No issue	No issue	No issue	No issue	No Violation
Mosslanding Switching Station -Duke Moss 230 KV line SLG Fault with delayed clearing	P5-2	Non-Redundant Relay	No issue	No issue	No issue	No issue	No issue	No Violation



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 Summer Peak	2029 Summer Peak	2024 Spring Off-Peak	2024 SP High CEC Forecast	2024 SpOP Hi Renew & Min Gas Gen	
Mosslanding Switching Station 230/115 KV Transformer Bank # 4 SLG fault with delayed clearing.	P5-3	Non-Redundant Relay	No issue	No issue	No issue	No issue	No issue	No Violation
Mesa 115 KV SVD SLG fault with delayed clearing.	P5-4	Non-Redundant Relay	No issue	No issue	No issue	No issue	No issue	No Violation
Moss Landing #1 or #2 115 kV bus fault. Delayed clearing due to failure of a non-redundent relay.	P5-5	Non-Redundant Relay	No issue	No issue	No issue	No issue	No issue	No Violation
MossIndswsta-Coburn 230 kV line 3Ø fault with normal clearing with Metcalf 500/230 kV #13 Transformer offline in the base case.	P6-1	N-1-1	No issue	No issue	No issue	No issue	No issue	No Violation
MossIndswsta 230 kV bus 3Ø fault with normal clearing with MossIndswsta 500/230 kV #9 Transformer offline in the base case.	P6-2	N-1-1	No issue	No issue	No issue	No issue	No issue	No Violation
Diablo 230 kV SVD 3Ø fault with normal clearing with Mesa 115 kV SVD offline in the base case.	P6-3	N-1-1	No issue	WECC criteria not met	No issue	No issue	No issue	Under Review With PTO

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



Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)										Potential Mitigation Solutions
			Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	

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

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



Single Source Substation with more than 100 MW Load

Substation	Load Served (MW)										Potential Mitigation Solutions
	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	

No single source substation with of more than 100 MW