



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Bellota-Warnerville 230 kV Line	P7-1-210025_Ext - Cottle-Melones & Melones-Wilson 230kV Lines Out	P7-1	DCTL	25.63	5.29	18.72	N/A	N/A	N/A	27.93	32.32	7.13	23.91	100.13	N/A	47.89	Sensitivity Only
	MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	7.6	12.9	4.91	N/A	N/A	N/A	16.73	49.08	20.39	39.95	102.02	N/A	14.75	Sensitivity Only
	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	7.86	14.18	4.56	N/A	N/A	N/A	12.52	55.85	21.11	47.68	109.16	N/A	14.08	Install Redundant protection
Warnerville - Wilson 230 kV Line	GATES-GREGG 230KV [4700] & P1-2:A14:137: _CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	102.22	<100	100.6	<100	N/A	<100	Generation re-dispatch
	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	30.14	19.22	38.86	N/A	N/A	N/A	57.43	151.01	38.8	134.62	123.57	N/A	32.92	Install Redundant protection
	MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	31.11	15.02	36.65	N/A	N/A	N/A	43.79	129.95	36.42	109.47	114.36	N/A	31.48	Generation re-dispatch
	MUSTANGSS-GATES #1 230KV [0] & MUSTANGSS-GATES #2 230KV [0]	P7-1	DCTL	31.56	14.97	36.45	N/A	N/A	N/A	41.27	128.16	36.39	109.43	110.21	N/A	31.21	Generation re-dispatch
	P7-1-210025_Ext - Cottle-Melones & Melones-Wilson 230kV Lines Out	P7-1	DCTL	7.48	28.3	8.17	N/A	N/A	N/A	19.75	72.7	1.61	55.81	100.07	N/A	11.2	Sensitivity Only
MOSSLNSW-LASAGUILASS #2 230KV	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	2.45	10.69	4.46	N/A	N/A	N/A	24.26	107.29	17.32	87.53	87.13	N/A	5.17	Install Redundant protection
Los Banos 500/230kV TB #1	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	4.7	26.79	7.32	N/A	N/A	N/A	57.3	96.34	21.84	102.32	43.76	N/A	0.81	Install Redundant protection
Los Banos-Panoche #2 230 kV Line	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	10.54	8.56	12.09	N/A	N/A	N/A	24.5	121.38	12.01	112.71	80.89	N/A	8.54	Install Redundant protection
Los Banos-Dos Amigos #1 230 kV Line	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	5.36	23.6	26.64	N/A	N/A	N/A	39.2	108.74	27.15	99.92	67.9	N/A	22.58	Install Redundant protection
Los Banos-San Luis PGP #1 230 kV Line	LOS BANOS-SAN LUIS PUMPS #2 230KV [5060] & Base Case	P6	N1/N1	<100	<100	114.43	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	114.41	Continue to monitor future forecast
Los Banos-San Luis PGP #2 230 kV Line	LOS BANOS-SAN LUIS PUMPS #1 230KV [5050] & Base Case	P6	N1/N1	<100	<100	114.43	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	114.41	Continue to monitor future forecast
Panoche-Gates #1 230 kV Line	P7-1-210012_Ext - Los Banos-Gates #1 & Los Banos-Midway 500kV Lines Out (X-2b)	P7-1	DCTL	48.17	<100	<100	N/A	N/A	N/A	123.53	<100	<100	<100	9.26	N/A	<100	Generation re-dispatch

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Panoche-Gates #2 230 kV Line	P7-1-210012_Ext - Los Banos-Gates #1 & Los Banos-Midway 500kV Lines Out (X-2b)	P7-1	DCTL	48.17	<100	<100	N/A	N/A	N/A	123.53	<100	<100	<100	9.26	N/A	<100	Generation re-dispatch
Helms-Gregg #1 230kV line	HELMS 3 18.00KV GEN UNIT 1 & HELMS-GREGG #2 230KV [4880]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	Sensitivity Only
	BORDEN-GREGG 230KV [4400] & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	Sensitivity Only
	BORDEN-GREGG 230KV [4400] (2) & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	Sensitivity Only
Helms-Gregg #2 230kV line	HELMS 1 18.00KV GEN UNIT 1 & HELMS-GREGG #1 230KV [4870]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	Sensitivity Only
Gregg-Ashlan 230 kV Line (Gregg-Figarden Tap 2)	GREGG-HERNDON #1 230KV [4830] & GREGG-HERNDON #2 230KV [4840]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	104.1	<100	111.56	<100	N/A	131.03	Generation re-dispatch
	GREGG-HERNDON #2 230KV [4840] & GREGG-HERNDON #1 230KV [4830]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	104.1	<100	111.56	<100	N/A	131.03	Generation re-dispatch
	HERNDON-ASHLAN 230KV [4890] & Base Case	P6	N1/N1	<100	<100	101.64	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	101.67	Continue to monitor future forecast
	GREGG-ASHLAN 230KV [4820] & Base Case	P6	N1/N1	<100	<100	100.7	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.52	Continue to monitor future forecast
Gregg-Ashlan 230 kV Line (Figarden Tap 2-Ashlan)	GREGG-HERNDON #1 230KV [4830] & GREGG-HERNDON #2 230KV [4840]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	104.67	<100	N/A	<100	Sensitivity only
	GREGG-HERNDON #2 230KV [4840] & GREGG-HERNDON #1 230KV [4830]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	104.67	<100	N/A	<100	Sensitivity only
Balch-McCall 230 kV Line (Balch-Pine Flats)	GREGG-HERNDON #1 230KV [4830] & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	sensitivity Only
	GREGG-HERNDON #2 230KV [4840] & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	sensitivity Only
McCall 230/115kV TB #2	MC CALL 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	88.99	93.82	107.93	N/A	N/A	N/A	69.96	28.07	97.13	27.21	60.5	N/A	5.14	Continue to monitor future forecast
McCall 230/115kV TB #3	MC CALL 115KV - MIDDLE BREAKER BAY 3	P2-3	Bus/Breaker	95.74	104.39	116.57	N/A	N/A	N/A	81.14	27.02	107.21	33.74	63.29	N/A	5.45	Continue to monitor future forecast
Gates-Gregg 230 kV Line (Henrietta Tap 1-Henrietta)	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & PANOCHÉ-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	101.34	<100	N/A	<100	Sensitivity Only
	P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0] & HELM-MCCALL 230KV [4860]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	101.33	<100	N/A	<100	Sensitivity Only
	P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0] & PANOCHÉ-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	101.73	<100	N/A	<100	Sensitivity Only
Mustang-Gregg 230kV line	HELM-MCCALL 230KV [4860] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	108.1	<100	N/A	<100	Sensitivity Only
	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & HELMS PP3 230/18KV TB 1	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	104.37	<100	N/A	<100	Sensitivity Only
	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	104.49	<100	N/A	<100	Sensitivity Only
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	108.08	<100	N/A	33.96	Sensitivity Only
	PANOCHÉ 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	14.52	29.15	32.05	N/A	N/A	N/A	52.58	82.54	29.22	100.71	48.52	N/A	30.7	Sensitivity Only
	HOLM Gen Unit 1 (CCSF) & GATES-GREGG 230KV [4700]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.89	<100	N/A	<100	Sensitivity Only
	Q877PH12 0.39KV GEN UNIT 12 & GATES-GREGG 230KV [4700]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	103.44	<100	N/A	<100	Sensitivity Only

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Thermal Overloads



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				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Mustang-McCall 230kV line	Q877PH3 0.63KV GEN UNIT 3 & GATES-GREGG 230KV [4700]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	103.71	<100	N/A	<100	Sensitivity Only
	GATES-GREGG 230KV [4700] & HELM-MCCALL 230KV [4860]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	112.37	<100	N/A	<100	Sensitivity Only
	GATES-GREGG 230KV [4700] & PANOCHE-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	114.33	<100	N/A	<100	Sensitivity Only
	LOSBANOS 500/230KV TB 1 & GATES-GREGG 230KV [4700]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	109.84	<100	N/A	<100	Sensitivity Only
	HENTAP1-MUSTANGSS #1 230KV [0] & TRANQLTYSS-MCMULLN1 #1 230KV [0]	P7-1	DCTL	24.73	41.33	41.28	N/A	N/A	N/A	36.65	85.24	41.38	103.91	30.85	N/A	39.17	Sensitivity Only
	HENTAP1-MUSTANGSS #1 230KV [0] & HERNDON-KEARNEY 230KV [4900]	P7-1	DCTL	23.19	39.45	39.37	N/A	N/A	N/A	36.27	84.71	39.32	103.2	31.33	N/A	37.24	Sensitivity Only
	GREGG 230KV - MIDDLE BREAKER BAY 5	P2-3	Bus/Breaker	22.05	36.66	37.38	N/A	N/A	N/A	32.05	84.21	36.27	101.61	31.1	N/A	35.35	Sensitivity Only
	GATES-GREGG 230KV [4700]	P1-2	N-1	22.06	36.59	37.28	N/A	N/A	N/A	32.06	84.2	36.19	101.6	31.1	N/A	35.25	Sensitivity Only
	HENRIETA - 1D 230KV & GATES-GREGG LINE	P2-3	Bus/Breaker	22.06	36.59	37.28	N/A	N/A	N/A	32.06	84.2	36.19	101.6	31.1	N/A	35.25	Sensitivity Only
	MUSTANGSS 230KV - MIDDLE BREAKER BAY 3	P2-3	Bus/Breaker	22.06	36.59	37.28	N/A	N/A	N/A	32.06	84.2	36.19	101.6	31.1	N/A	35.25	Sensitivity Only
Gates-Mustang #1 230kV Line	Q779SPV 0.55KV GEN UNIT 1 & 230KV [2605]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	115.1	<100	101.55	<100	N/A	<100	Generation re-dispatch
	Q877PH12 0.39KV GEN UNIT 12 & 230KV [2605]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	116.94	<100	104.32	<100	N/A	<100	Generation re-dispatch
	Q877PH3 0.63KV GEN UNIT 3 & 230KV [2605]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	117.16	<100	104.59	<100	N/A	<100	Generation re-dispatch
	230KV [5000] & 230KV [2605]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	121.02	<100	108.14	<100	N/A	<100	Generation re-dispatch
	230KV [5481] & 230KV [2605]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	121.02	<100	108.14	<100	N/A	<100	Generation re-dispatch
	LOSBANOS 500/230KV TB 1 & 230KV [2605]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	122.7	<100	111.22	<100	N/A	<100	Generation re-dispatch
	GATES F 230KV - MIDDLE BREAKER BAY 4	P2-3	Bus/Breaker	7.26	27.7	22.82	N/A	N/A	N/A	48.61	115.91	26.44	102.46	88.26	N/A	19.76	Generation re-dispatch
Gates-Mustang #2 230kV Line	KANSAS 12.47KV GEN UNIT 1 & 230KV [2604]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	114.34	<100	101.8	<100	N/A	<100	Generation re-dispatch
	Q877PH12 0.39KV GEN UNIT 12 & 230KV [2604]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	116.94	<100	104.32	<100	N/A	<100	Generation re-dispatch
	Q877PH3 0.63KV GEN UNIT 3 & 230KV [2604]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	117.16	<100	104.59	<100	N/A	<100	Generation re-dispatch
	230KV [5000] & 230KV [2604]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	121.02	<100	108.14	<100	N/A	<100	Generation re-dispatch
	230KV [5481] & 230KV [2604]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	121.02	<100	108.14	<100	N/A	<100	Generation re-dispatch
	LOSBANOS 500/230KV TB 1 & 230KV [2604]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	122.7	<100	111.22	<100	N/A	<100	Generation re-dispatch
	GATES F 230KV - MIDDLE BREAKER BAY 5	P2-3	Bus/Breaker	6.94	27.38	22.46	N/A	N/A	N/A	48.29	115.59	26.15	102.2	88.07	N/A	19.4	Generation re-dispatch
Gates-Arco 230kV line	P7-1-210014_Ext - Los Banos-Midway & Gates-Midway 500kV Lines Out	P7-1	DCTL	57.67	17.91	16.08	N/A	N/A	N/A	119.07	9.41	45.83	43.56	31.6	N/A	16.71	Generation re-dispatch
Gates-Midway 230kV Line	P7-1-210014_Ext - Los Banos-Midway & Gates-Midway 500kV Lines Out	P7-1	DCTL	49.78	3.78	4.92	N/A	N/A	N/A	163.1	22.57	35.64	68.17	47.87	N/A	4.06	Generation re-dispatch
Atwater-Merced 115 kV Line (Atwater-Atwater Jct)	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	42.65	N/A	N/A	N/A	29.63	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	42.66	7.32	N/A	N/A	29.63	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan

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				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Chowchilla-Kerckhoff #2 115 kV Line (Certanteed Jct 1-Chowchilla)	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	152.1	<100	<100	N/A	<100	Sensitivity Only
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	152	<100	<100	N/A	<100	Sensitivity Only
Chowchilla-Kerckhoff #2 115 kV Line (Certanteed Jct 1-Sharon Tap)	DAIRYLAND-MENDOTA 115KV [1360] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	123.85	117.15	110.98	<100	N/A	<100	Generation re-dispatch
	WILSON-LE GRAND 115KV [4170] & DAIRYLAND-MENDOTA 115KV [1360]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	124.51	114.63	<100	<100	N/A	<100	Generation re-dispatch
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	116.16	195.97	<100	<100	N/A	<100	Generation re-dispatch
Atwater-Merced 115 kV Line (Atwater Jct-Merced)	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	43.66	N/A	N/A	N/A	30.83	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	43.67	8.01	N/A	N/A	30.83	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
Exchequer-LeGrand 115 kV Line	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	84.96	N/A	N/A	N/A	77.23	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	EXCHEQUR 70/115KV TB 1 & Base Case	P6	N1/N1	100.47	<100	<100	N/A	N/A	N/A	100.52	<100	<100	<100	<100	N/A	<100	New Exchequer SPS
	MERCED-MERCED FALLS 70KV [9010] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	100.27	<100	<100	<100	<100	N/A	<100	New Exchequer SPS
	Moccasin 230/13.8kV Transformer #1 (CCSF) & EXCHEQUR 70/115KV TB 1	P6	N1/N1	<100	<100	122.04	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	New Exchequer SPS
	WILSON 230/115KV TB 2 & EXCHEQUR 70/115KV TB 1	P6	N1/N1	111.04	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	New Exchequer SPS
	Moccasin 230/13.8kV Transformer #1 (CCSF) & EXCHEQUR 70/115KV TB 1	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	125.34	New Exchequer SPS
	EXCHEQUR 70/115KV TB 1	P1-3	N-1	99.84	69.56	122.04	N/A	N/A	N/A	99.83	40.7	2.86	36.67	2.89	N/A	125.34	New Exchequer SPS
	EXCHEQUR - 1D 70KV & MERCED FALLS-EXCHEQUER LINE	P2-3	Bus/Breaker	99.8	69.52	121.96	N/A	N/A	N/A	99.82	40.68	2.86	36.61	2.89	N/A	125.26	New Exchequer SPS
	EXCHEQUR 70KV SECTION 1D	P2-2	Bus/Breaker	99.77	69.51	121.86	N/A	N/A	N/A	99.78	40.62	2.86	36.54	2.89	N/A	125.16	New Exchequer SPS
	EXCHEQUR - 1D 70KV & EXCHEQUER-YOSEMITE LINE	P2-3	Bus/Breaker	99.77	69.51	121.86	N/A	N/A	N/A	99.78	40.62	2.86	36.54	2.89	N/A	125.16	New Exchequer SPS
	MERCED FALLS-EXCHEQUER 70KV [8990] (MCSWAINJ-MRCDFLLS)	P2-1	Line Section w/o Fault	84.1	49.69	119.97	N/A	N/A	N/A	97.14	48.85	28.96	46.83	17.29	N/A	123.24	New Exchequer SPS
	MRCDFLLS 70KV SECTION 1D	P2-2	Bus/Breaker	84.08	49.67	119.91	N/A	N/A	N/A	97.14	48.87	28.95	46.86	17.29	N/A	123.19	New Exchequer SPS
	MERCED 70KV SECTION MA	P2-2	Bus/Breaker	76.88	40.86	113.83	N/A	N/A	N/A	96.79	59.38	41.11	59.2	20.78	N/A	117.67	New Exchequer SPS
	MERCED-MERCED FALLS 70KV [9010]	P1-2	N-1	76.85	40.86	113.61	N/A	N/A	N/A	96.76	59.35	41.06	59.2	20.78	N/A	117.44	New Exchequer SPS
	MERCED 115/70KV TB 2	P1-3	N-1	86.54	38.38	112.69	N/A	N/A	N/A	99.8	69.59	37.27	58.61	23.29	N/A	117.11	New Exchequer SPS



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
	MERCED 115 KV #1 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	86.34	40.69	113.05	N/A	N/A	N/A	99.33	59.45	40.97	59.3	23.29	N/A	116.87	New Exchequer SPS
	MERCED FALLS-EXCHEQUER 70KV [8990]	P1-2	N-1	74.37	43.44	112.74	N/A	N/A	N/A	87.78	38.87	29.49	36.79	17.33	N/A	116.03	New Exchequer SPS
	EL CAPITAN-WILSON 115KV [1510] & EXCHEQUR 70/115KV TB 1	P6	N1/N1	<100	100.55	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	107.01	New Exchequer SPS
	P7-1-210036_Ext - Helms-Gregg #1 & Helms-Gregg #3 230kV Lines Out	P7-1	DCTL	69.14	34.19	97.91	N/A	N/A	N/A	70.63	39.56	26.39	38.45	19.01	N/A	100.81	New Exchequer SPS
	HELMS-GREGG #1 230KV [4870] & HELMS-GREGG #2 230KV [4880]	P7-1	DCTL	69.13	34.17	97.89	N/A	N/A	N/A	70.63	39.56	26.39	38.45	19.01	N/A	100.79	New Exchequer SPS
	WESTLND5 0.48KV GEN UNIT 1 & EXCHEQUR 70/115KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.13	New Exchequer SPS
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	85.03	21.31	N/A	N/A	77.22	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
Exchequer 115/70 kV Transformer Bank 1	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	24.27	N/A	N/A	N/A	22.98	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	24.27	8.2	N/A	N/A	22.98	N/A	N/A	
Le Grand-Chowchilla 115kV Line	PANOCHÉ-MENDOTA 115KV [3230] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	110.38	N/A	<100	Sensitivity only
	PANOCHÉ-MENDOTA 115KV [3230] & TOMATAK-MENDOTA #1 70KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	100.01	N/A	<100	Sensitivity only
	TOMATAK-MENDOTA #1 70KV [0] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	100.03	N/A	<100	Sensitivity only
Wilson-Oro Loma 115 kV Line (LeGrand Jct-Wilson)	CHV.COAL 9.11KV GEN UNIT 1 & ARCO-TULARE LAKE 70KV [8460]	P3	G1/N1	108.74	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Disable automatic restoration
	SANDDRAG 12.00KV GEN UNIT 1 & ARCO-TULARE LAKE 70KV [8460]	P3	G1/N1	103.72	<100	<100	N/A	N/A	N/A	<100	<100	100.68	<100	<100	N/A	<100	Disable automatic restoration
	SUNCTY D 12.00KV GEN UNIT 1 & ARCO-TULARE LAKE 70KV [8460]	P3	G1/N1	103.52	<100	100.07	N/A	N/A	N/A	<100	<100	100.85	<100	<100	N/A	<100	Disable automatic restoration
	P1-2:A14:121:_ARCO-TULARE LAKE 70KV [8460] & GATES D 230/70KV TB 5	P6	N1/N1	111.75	108.64	128.71	N/A	N/A	N/A	<100	<100	111.63	<100	<100	N/A	128.51	Disable automatic restoration
	GATES D 230/70KV TB 5 & P1-2:A14:121:_ARCO-TULARE LAKE 70KV [8460]	P6	N1/N1	111.54	111.17	128.37	N/A	N/A	N/A	<100	<100	112.48	<100	<100	N/A	127.25	Disable automatic restoration
	P1-2:A14:121:_ARCO-TULARE LAKE 70KV [8460] & Base Case	P6	N1/N1	125.66	112.04	114.14	N/A	N/A	N/A	<100	100.46	114.02	<100	<100	N/A	114.16	Disable automatic restoration
	ARCO-TULARE LAKE 70KV [8460]	P1-2	N-1	108.42	96.72	98.41	N/A	N/A	N/A	37	99.09	98.45	64.29	57.18	N/A	98.44	Disable automatic restoration
	TLRE LKE 70KV SECTION MA	P2-2	Bus/Breaker	108.43	96.73	98.41	N/A	N/A	N/A	37.01	99.08	98.46	64.29	57.19	N/A	98.44	Disable automatic restoration
	TLRE LKE - MA 70KV & ARCO-TULARE LAKE LINE	P2-3	Bus/Breaker	108.42	96.72	98.41	N/A	N/A	N/A	37	99.09	98.45	64.29	57.18	N/A	98.44	Disable automatic restoration
	MELONES-WILSON 230KV [5080] & PANOCHÉ-ORO LOMA 115KV [3240]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	106.54	<100	<100	N/A	<100	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Wilson-Oro Loma 115 kV Line (LeGrand Jct-Wilson)	WILSONPGAE SVD=V & PANOCHÉ-ORO LOMA 115KV [3240]	P6	N1/N1	<100	105.49	<100	N/A	N/A	N/A	<100	<100	109.84	<100	<100	N/A	<100	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2-4	Bus/Breaker	122.76	158.38	89.11	N/A	N/A	N/A	N/A	22.57	181.02	28.12	N/A	N/A	129.3	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ-ORO LOMA 115KV [3240] (PANOCHÉJ-PANOCHÉ2)	P2-1	Line Section w/o Fault	104.12	157.47	88.89	N/A	N/A	N/A	N/A	18.5	171.79	22.76	N/A	N/A	129.04	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ2 115KV SECTION 2D	P2-2	Bus/Breaker	122.72	157.49	88.88	N/A	N/A	N/A	N/A	18.66	171.83	22.95	N/A	N/A	129.03	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ2 - 2D 115KV & PANOCHÉ2-EXCELSIORSS LINE	P2-3	Bus/Breaker	122.71	157.45	88.88	N/A	N/A	N/A	N/A	18.66	171.95	22.95	N/A	N/A	129.02	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ-ORO LOMA 115KV [3240] (PANOCHÉJ-HAMMONDS)	P2-1	Line Section w/o Fault	122.7	130.94	78	N/A	N/A	N/A	N/A	22	137.6	26.31	N/A	N/A	113.22	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ-ORO LOMA 115KV [3240] & Base Case	P6	N1/N1	<100	115.19	<100	N/A	N/A	N/A	<100	<100	118.95	<100	<100	N/A	108.4	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ-ORO LOMA 115KV [3240] (HAMMONDS-DFSTP)	P2-1	Line Section w/o Fault	N/A	105.1	67.71	N/A	N/A	N/A	N/A	20.24	108.72	24.01	N/A	N/A	98.28	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	PANOCHÉ-ORO LOMA 115KV [3240]	P1-2	N-1	N/A	100.97	65.58	N/A	N/A	N/A	N/A	21.44	104.3	25.17	N/A	N/A	95.2	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	HAMMONDS 115 KV #1 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	N/A	100.97	65.58	N/A	N/A	N/A	N/A	21.44	104.3	25.17	N/A	N/A	95.2	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
Wilson-Oro Loma 115 kV Line (LeGrand Jct-El Nido)	LOS BANOS-PANOCHÉ #1 230KV [5030] & PANOCHÉ-ORO LOMA 115KV [3240]	P7-1	DCTL	N/A	100.98	65.59	N/A	N/A	N/A	N/A	20.39	104.32	24.32	N/A	N/A	95.2	Project: Wilson-Oro Loma Reconductoring In-service date: 01/26 Short term: Action plan
	HAMMONDS 115 KV #1 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	N/A	100.79	65.69	N/A	N/A	N/A	N/A	21.08	104.11	24.84	N/A	N/A	94.98	Reconductoring project Wilson-Oro loma
	DAIRYLAND-MENDOTA 115KV [1360] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	121.4	120.35	108.54	<100	N/A	<100	Generation re-dispatch
Chowchilla-Kerckhoff #2 115 kV Line (Sharon Tap-Oakhurst Jct)	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	102.75	<100	N/A	N/A	N/A	<100	<100	199.12	<100	<100	N/A	<100	Continue to monitor future forecast
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	102.73	<100	N/A	N/A	N/A	<100	113.73	199	<100	<100	N/A	<100	Under review
Chowchilla-Kerckhoff #2 115 kV Line (Kerckhoff Jct 1-Kerckhoff 2)	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	136.1	<100	<100	N/A	<100	Sensitivity only
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	136.07	<100	<100	N/A	<100	Sensitivity only
Chowchilla-Kerckhoff #2 115 kV Line (Oakhurst Jct-Kerckhoff Jct 1)	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	136.1	<100	<100	N/A	<100	Sensitivity only
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	136.07	<100	<100	N/A	<100	Sensitivity only



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Wilson-Atwater #2 115 kV Line	EL CAPITAN-WILSON 115KV [1510] & LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED	P6	N1/N1	129.44	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED & EL CAPITAN-WILSON 115KV [1510]	P6	N1/N1	129.46	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
Wilson-Merced #1 115 kV Line	WILSON B 115KV SECTION 2D	P2-2	Bus/Breaker	111.88	N/A	N/A	N/A	N/A	N/A	35.56	N/A	N/A	N/A	66.01	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON B - 2D 115KV & WILSON-ORO LOMA LINE	P2-3	Bus/Breaker	111.84	N/A	N/A	N/A	N/A	N/A	35.56	22.75	N/A	N/A	65.99	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON-MERCED #2 115KV [4190] & EL CAPITAN-WILSON 115KV [1510]	P6	N1/N1	111.47	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
Wilson-Atwater #2 115 kV Line	EL CAPITAN-WILSON 115KV [1510] & LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED	P6	N1/N1	<100	139.51	144.55	N/A	N/A	N/A	<100	<100	141.98	<100	<100	N/A	144.63	Expand Atwater SPS
	LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED & EL CAPITAN-WILSON 115KV [1510]	P6	N1/N1	<100	139.79	144.48	N/A	N/A	N/A	<100	<100	143.85	<100	<100	N/A	144.5	Expand Atwater SPS
El Capitan-Wilson 115 kV Line	WILSON-ATWATER #2 115KV [4160] & LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED	P6	N1/N1	105.3	112.75	117.07	N/A	N/A	N/A	<100	<100	114.54	<100	<100	N/A	139.24	Expand Atwater SPS
	LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED & WILSON-ATWATER #2 115KV [4160]	P6	N1/N1	105.32	112.97	117.02	N/A	N/A	N/A	<100	<100	115.92	<100	<100	N/A	139.17	Expand Atwater SPS
Wilson-Merced #2 115 kV Line	EL CAPITAN-WILSON 115KV [1510] & WILSON-MERCED #2 115KV [4190]	P6	N1/N1	111.47	114.23	126.67	N/A	N/A	N/A	<100	<100	120.49	<100	<100	N/A	149.39	Expand Atwater SPS
	ATWATER-EL CAPITAN 115KV [1020] & WILSON-ATWATER #2 115KV [4160]	P7-1	DCTL	88.65	98.85	98.73	N/A	N/A	N/A	32.17	31.54	108.55	38.12	54.12	N/A	116.57	Sensitivity Only
	EL CAPITAN-WILSON 115KV [1510] & WILSON-ATWATER #2 115KV [4160]	P7-1	DCTL	<100	99.04	98.05	N/A	N/A	N/A	<100	47.42	107.81	59.4	<100	N/A	115.77	Sensitivity Only
	WILSON-MERCED #1 115KV [4180] & EL CAPITAN-WILSON 115KV [1510]	P6	N1/N1	115.1	117.82	130.68	N/A	N/A	N/A	<100	<100	124.21	<100	<100	N/A	130.59	Expand Atwater SPS
	EL CAPITAN-WILSON 115KV [1510] & WILSON-MERCED #1 115KV [4180]	P6	N1/N1	115.1	117.82	130.72	N/A	N/A	N/A	<100	<100	124.28	<100	<100	N/A	129.83	Expand Atwater SPS
	ATWATER-EL CAPITAN 115KV [1020] & WILSON-ATWATER #2 115KV [4160]	P7-1	DCTL	88.65	93.93	93.81	N/A	N/A	N/A	32.17	29.97	103.13	36.23	54.12	N/A	93.28	Sensitivity only
	EL CAPITAN-WILSON 115KV [1510] & WILSON-ATWATER #2 115KV [4160]	P7-1	DCTL	88.59	94.11	93.17	N/A	N/A	N/A	44.4	45.06	102.44	56.44	65.92	N/A	92.63	Sensitivity only
	WILSONPGAE 115KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	<100	89.18	84.33	N/A	N/A	N/A	<100	<100	103.24	42.9	<100	N/A	83.48	Sensitivity only
	WILSON-MERCED #1 115KV [4180]	P1-2	N-1	<100	87.49	83.67	N/A	N/A	N/A	<100	39.16	100.43	43.63	<100	N/A	82.81	Sensitivity only
	WILSON-MERCED #1 115KV [4180] & EL CAPITAN-WILSON 115KV [1510]	P6	N1/N1	115.11	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON A 115KV SECTION 1D	P2-2	Bus/Breaker	105.16	N/A	N/A	N/A	N/A	N/A	28.56	N/A	N/A	N/A	63.89	N/A	N/A	
	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT	P5-5	Redundent	Diverge	N/A	N/A	N/A	N/A	N/A	43.53	N/A	N/A	N/A	21.77	N/A	N/A	

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	43.53	68.35	N/A	N/A	21.76	N/A	N/A	
	HELM-MCCALL 230KV [4860] & P1-2:A14:137: _CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.29	<100	N/A	<100	Sensitivity only
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	29.4	32.56	28.81	N/A	N/A	N/A	20.08	90.35	33.66	100.25	8.61	N/A	28.81	Sensitivity Only
	HERNDON #1 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	29.21	32.45	28.68	N/A	N/A	N/A	59.57	112.91	33.19	117.94	8.08	N/A	28.68	Generation re-dispatch
	HERNDON 115KV - SECTION 1D & 2D	P2-4	Bus/Breaker	29.17	32.43	28.66	N/A	N/A	N/A	59.14	112.73	33.16	117.77	8.69	N/A	28.67	Generation re-dispatch
	HERNDON 230KV - SECTION 1E & 2E	P2-4	Bus/Breaker	28.88	32.33	28.65	N/A	N/A	N/A	57.56	106	33.25	110.42	7.88	N/A	28.66	Generation re-dispatch
Panoche-Schindler #2 115 kV Line (Cheny Tap-Panoche)	SCHINDLR 115/12.47KV TB 2 & PANOCHE-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHE1_KAMM	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	104.32	<100	102.88	<100	N/A	<100	Generation re-dispatch
	PANOCHE-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHE1_KAMM & GATES D 230/70KV TB 5	P6	N1/N1	<100	102.05	153.27	N/A	N/A	N/A	<100	<100	104.96	164.66	141.44	N/A	153.29	Monitor future forecast
	GATES D 230/70KV TB 5 & PANOCHE-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHE1_KAMM	P6	N1/N1	<100	<100	148.75	N/A	N/A	N/A	<100	<100	103.11	159.85	138.13	N/A	149.56	Monitor future forecast
	WESTLND5-EXCELSIORSS #1 115KV [0] MOAS OPENED ON PANOCHE1_KAMM & GATES D 230/70KV TB 5	P6	N1/N1	<100	100.16	119.72	N/A	N/A	N/A	<100	<100	100.21	148.95	130.17	N/A	119.84	Monitor future forecast
PANOCHE2-EXCELSIORSS 115kV Line	PANOCHE-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHE1_KAMM & GATES D 230/70KV TB 5	P6	N1/N1	129.96	137.99	178.54	N/A	N/A	N/A	<100	<100	141.27	155.56	133.68	N/A	178.57	Continue to monitor Fresno procedure
	GATES D 230/70KV TB 5 & PANOCHE-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHE1_KAMM	P6	N1/N1	122.97	136.32	175.33	N/A	N/A	N/A	<100	<100	139.53	151.01	130.56	N/A	174.87	Continue to monitor Fresno procedure
	WESTLND5-EXCELSIORSS #1 115KV [0] MOAS OPENED ON PANOCHE1_KAMM & GATES D 230/70KV TB 5	P6	N1/N1	113.24	122.6	149.45	N/A	N/A	N/A	<100	<100	125.43	140.78	123.09	N/A	149.56	Continue to monitor Fresno procedure
Dairyland-Le Grand 115 kV Line (Newhall-Dairyland)	HELMS 1 18.00KV GEN UNIT 1 & PANOCHE-MENDOTA 115KV [3230]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	101.28	N/A	<100	Sensitivity only
	HELMS 2 18.00KV GEN UNIT 1 & PANOCHE-MENDOTA 115KV [3230]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	101.28	N/A	<100	Sensitivity only
	Q1158S 0.42KV GEN UNIT 1 & PANOCHE-MENDOTA 115KV [3230]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	100.96	N/A	<100	Sensitivity only
	MENDOTA 115/70KV TB 1 & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	104.77	N/A	<100	Sensitivity only
	PANOCHE-MENDOTA 115KV [3230] & TOMATAK-MENDOTA #1 70KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	105.74	N/A	<100	Sensitivity only
	TOMATAK-MENDOTA #1 70KV [0] & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	105.74	N/A	<100	Sensitivity only
Panoche-Schindler #1 115 kV Line	GATES D 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	80.02	N/A	<100	N/A	N/A	N/A	31.99	107.52	N/A	N/A	83.69	N/A	N/A	Generation re-dispatch
	EXCELSIORSS-PANOCHE2 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	132.24	144.68	183.12	N/A	N/A	N/A	<100	<100	147.81	165.13	141.98	N/A	183.2	Continue to monitor Fresno procedure
	PANOCHE2-EXCELSIORSS 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	132.24	144.68	183.12	N/A	N/A	N/A	<100	<100	147.81	165.13	141.98	N/A	183.2	Continue to monitor Fresno procedure

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
(Panoche-Kamm)	GATES D 230/70KV TB 5 & EXCELSIORSS-PANOCH2 115KV [0]	P6	N1/N1	129.72	143.5	180.58	N/A	N/A	N/A	<100	<100	146.84	161.37	139.64	N/A	179.35	Continue to monitor Fresno procedure
	GATES D 230KV - SECTION 2D & 1D	P2-4	Bus/Breaker	N/A	85.23	100.13	N/A	N/A	N/A	N/A	N/A	87.62	99.94	N/A	N/A	100.24	Continue to monitor future forecast
	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	74.81	81.49	97.27	N/A	N/A	N/A	31.6	104.07	83.47	96.06	80.75	N/A	97.35	Generation re-dispatch
Panoche-Oro Loma 115 kV Line (Panoche Jct-Hammonds)	WILSON 230/115KV TB 1 & WILSON 230/115KV TB 2	P6	N1/N1	148.12	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON 230/115KV TB 2 & WILSON 230/115KV TB 1	P6	N1/N1	148.11	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	
Panoche-Oro Loma 115 kV Line (Hammonds-DFS Tap)	WILSON 230/115KV TB 1 & WILSON 230/115KV TB 2	P6	N1/N1	137.72	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	
	WILSON 230/115KV TB 2 & WILSON 230/115KV TB 1	P6	N1/N1	137.72	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	
Panoche-Oro Loma 115 kV Line (DeFrancesco Tap-Oro Loma)	WILSON 230/115KV TB 1 & WILSON 230/115KV TB 2	P6	N1/N1	135.14	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	
	WILSON 230/115KV TB 2 & WILSON 230/115KV TB 1	P6	N1/N1	135.14	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	
Wilson-Oro Loma 115 kV Line (Oro Loma-El Nido)	WILSON 230/115KV TB 1 & WILSON 230/115KV TB 2	P6	N1/N1	105.78	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	Continue to monitor future forecast
	WILSON 230/115KV TB 2 & WILSON 230/115KV TB 1	P6	N1/N1	105.78	N/A	N/A	N/A	N/A	N/A	<100	<100	<100	N/A	<100	N/A	N/A	
	PANOCH2 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	134.77	100.01	N/A	N/A	N/A	<100	19.08	157.05	21.96	<100	N/A	100.02	
Coalinga1-Coalinga2 70 kV Line (Tornado Jct-Penn Zier Jct)	GATES D 230/70KV TB 5 & SCHINDLR 115/12.47KV TB 2	P6	N1/N1	Diverge	Diverge	Diverge	N/A	N/A	N/A	<100	101.12	Diverge	<100	<100	N/A	Diverge	System Reconfiguration
	SCHINDLR 115/12.47KV TB 2 & GATES D 230/70KV TB 5	P6	N1/N1	Diverge	Diverge	Diverge	N/A	N/A	N/A	<100	124.09	Diverge	<100	<100	N/A	Diverge	System Reconfiguration
	TEMPLETON-GATES 230KV [5934] & P1-2:A14:123: _GATES-JAYNE SW STA 70KV [8652]	P6	N1/N1	100.04	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	System Reconfiguration
Chowchilla-Dairyland 115kv Line	PANOCH2-MENDOTA 115KV [3230] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	111.12	N/A	<100	Sensitivity Only
	PANOCH2-MENDOTA 115KV [3230] & TOMATAK-MENDOTA #1 70KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	100.65	N/A	<100	Sensitivity Only
	TOMATAK-MENDOTA #1 70KV [0] & PANOCH2-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	100.66	N/A	<100	Sensitivity Only
Oro Loma-Canal #1 70 kV Line (Oro Loma-Dos Palos)	CANAL-MERCYSRNGSS 70KV [0] & LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	103.74	<100	N/A	<100	Sensitivity Only
	LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940] & CANAL-MERCYSRNGSS 70KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	103.74	<100	N/A	<100	Sensitivity Only
Oro Loma-Mendota 70 kV Line (Oro Loma-Poso Jct 1)	PANOCH2-HELM 230KV [5370] & PANOCH2-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	135.72	<100	137.57	<100	N/A	<100	Generation re-dispatch
	PANOCH2-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	118.98	<100	111.69	<100	N/A	<100	Generation re-dispatch
	WILSON-LE GRAND 115KV [4170] & PANOCH2-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	165.13	<100	161.65	<100	N/A	<100	Generation re-dispatch
	PANOCH2-MENDOTA 115KV [3230]	P1-2	N-1	46.16	45.73	49.21	N/A	N/A	N/A	67.35	99.82	46.81	100.18	22.73	N/A	49.22	Sensitivity Only
	PANOCH2-MENDOTA 115KV [3230] (PANOCH2-MENDOTA)	P2-1	Line Section w/o Fault	46.16	45.73	49.21	N/A	N/A	N/A	67.35	99.82	46.81	100.18	22.73	N/A	49.22	Sensitivity Only
	PANOCH2-MENDOTA 115KV [3230] (PANOCH2-PANOCH2)	P2-1	Line Section w/o Fault	46.16	45.73	49.21	N/A	N/A	N/A	66.93	99.81	46.81	100.16	22.73	N/A	49.22	Sensitivity Only

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Merced 115/70 kV Transformer #2	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	75.1	N/A	N/A	N/A	42.9	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	101.23	<100	<100	N/A	<100	Sensitivity Only
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	101.78	<100	<100	N/A	<100	Sensitivity Only
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	75.1	66.03	N/A	N/A	42.89	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
Merced-Merced Falls 70 kV Line	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	148.55	N/A	N/A	N/A	136.37	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	DAIRYLAND-MENDOTA 115KV [1360] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.68	100.59	<100	<100	N/A	<100	Generation re-dispatch
	EXCHEQUER-LE GRAND 115KV [1560] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.69	<100	100.72	<100	N/A	<100	Generation re-dispatch
	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	150.25	<100	<100	N/A	<100	Generation re-dispatch
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	149.7	<100	<100	N/A	<100	Generation re-dispatch
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	148.55	68.12	N/A	N/A	136.35	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
Los Banos-Livingston-Canal 70 kV Line (Chevron Pipeline-Santa Nella)	LOS BANOS-MERCY SPRINGS SW STA 70KV [8929] & Base Case	P6	N1/N1	104.1	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	128.93	Under review
Los Banos 230/70 kV Transformer Bank #3	GATES D 230/70KV TB 5 & LOSBANOS 230/70KV TB 4	P6	N1/N1	<100	<100	100.01	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Monitor future forecast
Los Banos-Pacheco 70 kV Line (Los Banos-Pacheco Wind)	LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940] & Base Case	P6	N1/N1	<100	<100	115.91	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	115.88	Monitor future forecast
	LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940] & LOSBANOS 230/70KV TB 3	P6	N1/N1	<100	<100	108.48	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	108.45	Monitor future forecast
	LOSBANOS 230/70KV TB 3 & LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P6	N1/N1	<100	<100	108.48	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	108.45	Monitor future forecast
	VEGA 0.36KV GEN UNIT 1 & LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P3	G1/N1	<100	<100	105.19	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	105.16	Monitor future forecast
Oro Loma-Mendota 115 kV Line (Poso Jct 1-Firebaugh)	LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_CHWCHLASLRJT & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	144.47	<100	N/A	<100	Sensitivity only
	PANOCHÉ-MENDOTA 115KV [3230] & LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_CHWCHLASLRJT	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	138.35	<100	N/A	<100	Sensitivity only
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	116.84	<100	114.37	<100	N/A	<100	Redispatch Generation
Borden 230/70 kV Transformer	FRIANTDM 6.60KV GEN UNIT 2 & BORDEN 230/70KV TB 4	P3	G1/N1	105.04	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Project: Borden 230/70kV TB Capacity increase Project
	FRIANTDM 6.60KV GEN UNIT 3 & BORDEN 230/70KV TB 4	P3	G1/N1	101.71	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	
	HELMS 1 18.00KV GEN UNIT 1 & BORDEN 230/70KV TB 4	P3	G1/N1	100.79	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	

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Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Bank 1	BORDEN 230/70KV TB 4 & Base Case	P6	N1/N1	121.54	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	In-service date: 01/25 Short term: Action plan
	BORDEN 230/70KV TB 4 & FRIANT-COPPERMINE 70KV [8660]	P6	N1/N1	109.4	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	
	FRIANT-COPPERMINE 70KV [8660] & BORDEN 230/70KV TB 4	P6	N1/N1	109.49	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	
Borden-Coppermine 70 kV Line (Borden-Cassidy)	BORDEN 230/70KV TB 1 & BORDEN 230/70KV TB 4	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	108.59	<100	<100	104.32	<100	N/A	<100	Generation re-dispatch
	BORDEN 230/70KV TB 4 & BORDEN 230/70KV TB 1	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	108.59	<100	<100	104.32	<100	N/A	<100	Generation re-dispatch
	HERNDON #1 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	58.49	64.24	61.83	N/A	N/A	N/A	41.91	93.72	65.21	100.23	18.75	N/A	61.83	Sensitivity only
	HERNDON 115KV - SECTION 1D & 2D	P2-4	Bus/Breaker	58.47	64.23	61.82	N/A	N/A	N/A	41.53	93.57	65.18	100.08	19.56	N/A	61.82	Sensitivity only
Borden-Coppermine 70 kV Line (Cassidy-River Rock)	BORDEN 230/70KV TB 1 & BORDEN 230/70KV TB 4	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	152.37	<100	<100	123.15	<100	N/A	<100	Generation re-dispatch
	BORDEN 230/70KV TB 4 & BORDEN 230/70KV TB 1	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	152.37	<100	<100	123.15	<100	N/A	<100	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	102.77	<100	N/A	<100	Sensitivity only
	HERNDON #1 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	29.42	32.62	28.84	N/A	N/A	N/A	59.23	112.47	33.35	117.49	7.8	N/A	28.85	Continue to Monitor future forecast
	HERNDON 115KV - SECTION 1D & 2D	P2-4	Bus/Breaker	29.37	32.6	28.83	N/A	N/A	N/A	58.8	112.29	33.32	117.32	8.38	N/A	28.83	Generation re-dispatch
	HERNDON 230KV - SECTION 1E & 2E	P2-4	Bus/Breaker	29.07	32.5	28.81	N/A	N/A	N/A	57.21	105.57	33.41	109.99	7.65	N/A	28.81	Generation re-dispatch
Firebaugh-Mendota 115 kV Line (Firebaugh-Tomatek)	LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_CHWCHLASLRJT & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	136.54	<100	N/A	<100	Sensitivity Only
	PANOCHE-MENDOTA 115KV [3230] & LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_CHWCHLASLRJT	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	130.73	<100	N/A	<100	Sensitivity Only
	WILSON-LE GRAND 115KV [4170] & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	112.66	<100	106.93	<100	N/A	<100	Generation re-dispatch
Oro Loma-Mendota 70 kV Line (Tomatek-Mendota)	LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_CHWCHLASLRJT & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	145.97	<100	N/A	<100	Sensitivity Only
	PANOCHE-HELM 230KV [5370] & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.9	<100	<100	<100	N/A	<100	Generation re-dispatch
	WILSON-LE GRAND 115KV [4170] & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	121.68	<100	115.73	<100	N/A	<100	Generation re-dispatch
Mendota 115/70 kV Transformer Bank 1	LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_CHWCHLASLRJT & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	135.2	<100	N/A	<100	Sensitivity Only
	PANOCHE-MENDOTA 115KV [3230] & LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON LE GRAND_CHWCHLASLRJT	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	135.92	<100	N/A	<100	Sensitivity Only
	WILSON-LE GRAND 115KV [4170] & PANOCHE-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	106.85	<100	102.03	<100	N/A	<100	Generation re-dispatch
	NORTHSTAR 0.36KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	127.36	<100	N/A	<100	Sensitivity Only

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Mendota-San Juaquin-Helm 70kV Line (Mendota-Bio Mass)	Q1028Q1029PV 34.50KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	127.5	<100	N/A	<100	Sensitivity Only
	Q1032G3 0.55KV GEN UNIT 3 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	127.75	<100	N/A	<100	Sensitivity Only
	230KV [5000] & 230KV [5481]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	122.26	<100	132.39	<100	N/A	<100	Generation re-dispatch
	230KV [5481] & 230KV [5000]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	122.26	<100	132.39	<100	N/A	<100	Generation re-dispatch
	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & PANOCHÉ-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	128	<100	<100	<100	N/A	<100	Generation re-dispatch
	HELM 230/70KV TB 1	P1-3	N-1	<100	<100	<100	N/A	N/A	N/A	<100	98.79	<100	127.3	<100	N/A	<100	Sensitivity Only
	HELM 230KV SECTION 1D	P2-2	Bus/Breaker	<100	<100	<100	N/A	N/A	N/A	<100	98.8	<100	127.43	<100	N/A	<100	Sensitivity Only
	PANOCHÉ 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	<100	<100	<100	N/A	N/A	N/A	<100	118.72	<100	119.84	<100	N/A	<100	Generation re-dispatch
Mendota-San Juaquin-Helm 70kV Line (Bio Mass-Adams East)	PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7-1	DCTL	<100	<100	<100	N/A	N/A	N/A	<100	121.44	<100	131.24	<100	N/A	<100	Generation re-dispatch
	Q1028Q1029PV 34.50KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	128.75	<100	N/A	<100	Sensitivity Only
	Q1032G3 0.55KV GEN UNIT 3 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	129	<100	N/A	<100	Sensitivity Only
	Q829SPV1 0.42KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	128.61	<100	N/A	<100	Sensitivity Only
	230KV [5000] & 230KV [5481]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	123.56	<100	133.8	<100	N/A	<100	Generation re-dispatch
	230KV [5481] & 230KV [5000]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	123.56	<100	133.8	<100	N/A	<100	Generation re-dispatch
	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & PANOCHÉ-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	129.27	<100	<100	<100	N/A	<100	Generation re-dispatch
	HELM 230/70KV TB 1	P1-3	N-1	N/A	N/A	N/A	N/A	N/A	N/A	41.06	99.81	N/A	128.55	N/A	N/A	N/A	Sensitivity Only
Mendota-San Juaquin-Helm 70kV Line (Adams East-Westlands Sub)	HELM 230KV SECTION 1D	P2-2	Bus/Breaker	N/A	N/A	N/A	N/A	N/A	N/A	41.02	99.82	N/A	128.68	N/A	N/A	N/A	Sensitivity Only
	PANOCHÉ 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	N/A	N/A	N/A	N/A	N/A	N/A	52.17	119.99	N/A	121.13	N/A	N/A	N/A	Generation re-dispatch
	PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7-1	DCTL	N/A	N/A	N/A	N/A	N/A	N/A	46.31	122.73	N/A	132.63	N/A	N/A	N/A	Generation re-dispatch
	Q1028Q1029PV 34.50KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	128.79	<100	N/A	<100	Sensitivity Only
	Q1032G3 0.55KV GEN UNIT 3 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	129.04	<100	N/A	<100	Sensitivity Only
	Q829SPV1 0.42KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	128.65	<100	N/A	<100	Sensitivity Only
	230KV [5000] & 230KV [5481]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	117.49	<100	133.87	<100	N/A	<100	Generation re-dispatch
	230KV [5481] & 230KV [5000]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	117.49	<100	133.87	<100	N/A	<100	Generation re-dispatch
Mendota-San Juaquin-Helm 70kV Line (Adams East-Westlands Sub)	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & PANOCHÉ-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	122.47	<100	<100	<100	N/A	<100	Generation re-dispatch
	PANOCHÉ 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	0.77	2.47	3.89	N/A	N/A	N/A	51.79	113.75	2.57	121.2	37.85	N/A	4.07	Generation re-dispatch



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
	PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7-1	DCTL	0.75	2.46	3.88	N/A	N/A	N/A	45.81	116.52	2.56	132.71	37.85	N/A	4.06	Generation re-dispatch
	HELM 230/70KV TB 1	P1-3	N-1	N/A	N/A	N/A	N/A	N/A	N/A	40.86	93.01	N/A	128.59	N/A	N/A	N/A	Sensitivity Only
	HELM 230KV SECTION 1D	P2-2	Bus/Breaker	N/A	N/A	N/A	N/A	N/A	N/A	40.82	93.05	N/A	128.72	N/A	N/A	N/A	Sensitivity Only
Merced Falls-Exchequer 70 kV Line (McSwain Jct-Merced Falls)	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	142.58	N/A	N/A	N/A	136.85	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	136.35	<100	<100	N/A	<100	Sensitivity Only
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	128.41	<100	<100	N/A	<100	Sensitivity Only
	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	142.58	49.66	N/A	N/A	136.84	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
Merced Falls-Exchequer 70 kV Line (McSwain Jct-Exchequer)	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	N/A	N/A	N/A	N/A	N/A	168.3	41.34	N/A	N/A	183.4	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	N/A	N/A	N/A	N/A	N/A	168.31	N/A	N/A	N/A	183.42	N/A	N/A	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
	PANOCHÉ-MENDOTA 115KV [3230] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	178.7	<100	<100	N/A	<100	Generation re-dispatch
	WILSON-LE GRAND 115KV [4170] & DAIRYLAND-MENDOTA 115KV [1360]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	108.66	<100	<100	N/A	<100	Generation re-dispatch
	WILSON-LE GRAND 115KV [4170] & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	171.55	<100	<100	N/A	<100	Generation re-dispatch
Panoche-Schindler #1 115 kV Line (Kamm-Cantua)	GATES D 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	72.32	<100	<100	N/A	N/A	N/A	27.37	103.91	<100	<100	81.48	N/A	<100	Under Review
	EXCELSIORSS-PANOCHÉ2 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	121.64	133.08	169.03	N/A	N/A	N/A	<100	<100	135.99	158.12	136.13	N/A	169.11	Under Review
	PANOCHÉ2-EXCELSIORSS 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	121.64	133.08	169.03	N/A	N/A	N/A	<100	<100	135.99	158.12	136.13	N/A	169.11	Under Review
	GATES D 230/70KV TB 5 & EXCELSIORSS-PANOCHÉ2 115KV [0]	P6	N1/N1	119.25	131.96	166.66	N/A	N/A	N/A	<100	<100	135.07	154.58	133.93	N/A	165.52	Under Review
	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	67.46	73.61	88.3	N/A	N/A	N/A	27	100.65	75.45	93.12	78.72	N/A	88.37	Generation re-dispatch
Panoche-Schindler #1 115 kV Line (Cantua-Westlands)	EXCELSIORSS-PANOCHÉ2 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	109.19	119.68	152.93	N/A	N/A	N/A	<100	<100	122.38	137.97	118.61	N/A	153.01	Under Review
	PANOCHÉ2-EXCELSIORSS 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	109.19	119.68	152.93	N/A	N/A	N/A	<100	<100	122.38	137.97	118.61	N/A	153.01	Under Review
	GATES D 230/70KV TB 5 & EXCELSIORSS-PANOCHÉ2 115KV [0]	P6	N1/N1	106.87	118.53	150.57	N/A	N/A	N/A	<100	<100	121.48	134.42	116.43	N/A	149.57	Under Review
	KERCKHOFF-CLOVIS-SANGER #2 115KV [1900] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.06	<100	<100	<100	N/A	<100	Generation re-dispatch



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Chowchilla-Kerckhoff #2 115 kV Line (Kerckhoff 2-Woodward Jct)	KERCKHOFF-CLOVIS-SANGER #2 115KV [1900] & CHOWCHILLA-KERCKHOFF 115KV [1250] MOAS OPENED ON OAKH_JCT_K1-JCT	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.57	<100	N/A	<100	Sensitivity only
	LE GRAND 115KV SECTION MA	P2-2	Bus/Breaker	47.77	40.42	46.48	N/A	N/A	N/A	84.14	100.11	22.51	79.83	15.85	N/A	50.44	Generation re-dispatch
	LE GRAND - MA 115KV & LE GRAND-DAIRYLAND LINE	P2-3	Bus/Breaker	47.77	40.42	46.48	N/A	N/A	N/A	84.14	100.11	22.51	79.83	15.85	N/A	50.44	Generation re-dispatch
Barton-Airways-Sanger 115 kV Line (Airways Jct 2-Barton)	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.09	<100	N/A	<100	Sensitivity only
	HERNDON 115KV SECTION 2D	P2-2	Bus/Breaker	42.95	32.01	37.64	N/A	N/A	N/A	82.97	101.86	35.74	99.69	3.22	N/A	35.42	Generation re-dispatch
	HERNDON - 2D 115KV & HERNDON-BULLARD #2 LINE	P2-3	Bus/Breaker	42.95	32.03	37.64	N/A	N/A	N/A	82.97	101.87	35.75	99.68	3.23	N/A	35.42	Generation re-dispatch
	HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2-3	Bus/Breaker	42.31	31.64	37.29	N/A	N/A	N/A	83.32	102.12	35.36	99.94	2.87	N/A	35.07	Generation re-dispatch
Kerckhoff-Clovis-Sanger #1 115 kV Line (Woodward Jct-Shepherd)	BARTON-AIRWAYS-SANGER 115KV [1060] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7-1	DCTL	19.55	27.82	28.19	N/A	N/A	N/A	101.03	90.31	24.09	82.5	12.79	N/A	30.3	Generation re-dispatch
Barton-Airways-Sanger 115 kV Line (Sanger-Airways Jct 2)	KERCKHOFF-CLOVIS-SANGER #1 115KV [1890] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	100.03	<100	<100	<100	<100	N/A	<100	Generation re-dispatch
Kingsriver-Sanger-Reedley 115 kV Line (Sanger-Rainbow Tap)	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	141.27	142.75	231.92	N/A	N/A	N/A	<100	<100	146.59	<100	<100	N/A	283.94	System upgrade, operating solution or SPS
	SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	141.15	142.8	231.93	N/A	N/A	N/A	<100	<100	146.63	<100	<100	N/A	276.3	System upgrade, operating solution or SPS
	SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON WAHTOKE_REEDLEY	P6	N1/N1	<100	<100	117.24	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	139.69	Monitor future forecast
	KINGSRIV 13.80KV GEN UNIT 1 & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	113.17	Re-rate sensitivity
Sanger-Reedley 115 kV Line	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & KINGS RIVER-SANGER-REEDLEY 115KV [2030]	P6	N1/N1	<100	<100	101.69	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	101.71	Monitor future forecast
	KINGS RIVER-SANGER-REEDLEY 115KV [2030] & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	<100	<100	101.69	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	101.7	Monitor future forecast
McCall 230/115kV TB #2	MC CALL 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	86.83	91.55	104.13	N/A	N/A	N/A	69.16	29.02	94.75	28.07	59.18	N/A	4.97	Monitor future forecast
McCall 230/115kV TB #3	MC CALL 115KV - MIDDLE BREAKER BAY 3	P2-3	Bus/Breaker	94.2	102.45	114.58	N/A	N/A	N/A	79.68	25.86	105.18	33.34	63.08	N/A	5.36	Continue to Monitor future forecast
McCall-Reedley 115 kV Line (McCall-Wahtoke)	KINGS RIVER-SANGER-REEDLEY 115KV [2030] & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	<100	<100	105.37	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	105.39	Monitor future forecast
	SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & KINGS RIVER-SANGER-REEDLEY 115KV [2030]	P6	N1/N1	<100	<100	105.37	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	105.39	Monitor future forecast

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
McCall-Kingsburg #1 115 kV Line (McCall-Kingsburg Jct 1)	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	118.99	N/A	<100	Sensitivity only
	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	134.69	<100	136.46	<100	N/A	<100	Generation re-dispatch
	HENRIETA 230/115KV TB 3 & MCCALL-KINGSBURG #2 115KV [2300]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	121.89	116.64	N/A	<100	Sensitivity Only
Kingsriver-Sanger-Reedley 115 kV Line (Reedley-Piedra 1)	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	134.53	134.56	205.85	N/A	N/A	N/A	<100	<100	137.63	<100	<100	N/A	298.36	System upgrade, operating solution or SPS
	SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	134.4	134.56	205.84	N/A	N/A	N/A	<100	<100	137.63	<100	<100	N/A	298.3	System upgrade, operating solution or SPS
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON WAHTOKE_REEDLEY & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	<100	<100	111.37	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	161.41	System upgrade, operating solution or SPS
McCall-Reedley 115 kV Line (Wahtoke-Reedley)	KINGS RIVER-SANGER-REEDLEY 115KV [2030] & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	111.81	113.54	130.96	N/A	N/A	N/A	<100	<100	115.53	<100	<100	N/A	130.98	System upgrade, operating solution or SPS
	SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & KINGS RIVER-SANGER-REEDLEY 115KV [2030]	P6	N1/N1	111.81	113.54	130.95	N/A	N/A	N/A	<100	<100	115.53	<100	<100	N/A	130.98	System upgrade, operating solution or SPS
McCall-Kingsburg #1 115 kV Line (Kingsburg Jct1-Kingsburg Jct 2)	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	101.19	N/A	<100	Sensitivity only
	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	123.88	<100	125.45	<100	N/A	<100	Generation re-dispatch
	MCCALL-KINGSBURG #2 115KV [2300] & P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0]	P6	N1/N1	<100	103.55	116.16	N/A	N/A	N/A	<100	<100	105.21	<100	<100	N/A	116.17	Continue to Monitor future forecast
	P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0] & MCCALL-KINGSBURG #2 115KV [2300]	P6	N1/N1	<100	103.55	116.16	N/A	N/A	N/A	<100	<100	105.2	<100	<100	N/A	116.17	Continue to Monitor future forecast
Kingsriver-Sanger-Reedley 115 kV Line (Rainbow Tap-Piedra 1)	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	121.06	120.49	210.56	N/A	N/A	N/A	<100	<100	124.06	<100	<100	N/A	257.79	System upgrade, operating solution or SPS
	SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	120.96	120.53	210.57	N/A	N/A	N/A	<100	<100	124.1	<100	<100	N/A	250.85	System upgrade, operating solution or SPS
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON WAHTOKE_REEDLEY & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	113.7	Sensitivity only
McCall-California Ave 115 kV Line (Danish Creamery-McCall)	MCCALL-WEST FRESNO #2 115KV [2370] & SANGER-CALIFORNIA AVE 115KV [9130]	P6	N1/N1	<100	<100	116.67	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	116.71	Monitor Future forecast
	SANGER-CALIFORNIA AVE 115KV [9130] & MCCALL-WEST FRESNO #2 115KV [2370]	P6	N1/N1	<100	<100	116.67	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	116.71	Monitor Future forecast
EXCELSIORSS-SCHINDLR #1 115kV Line	EXCELSIORSS-SCHINDLR #2 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	113.66	122.71	152.46	N/A	N/A	N/A	<100	<100	125.61	<100	<100	N/A	152.54	Monitor Fresno Procedure
	GATES D 230/70KV TB 5 & EXCELSIORSS-SCHINDLR #2 115KV [0]	P6	N1/N1	106.76	117.91	150.13	N/A	N/A	N/A	<100	<100	121.01	<100	<100	N/A	149.81	Monitor Fresno Procedure
EXCELSIORSS-SCHINDLR #2 115kV Line	EXCELSIORSS-SCHINDLR #1 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	113.66	122.71	152.46	N/A	N/A	N/A	<100	<100	125.61	<100	<100	N/A	152.54	Monitor Fresno Procedure
	GATES D 230/70KV TB 5 & EXCELSIORSS-SCHINDLR #1 115KV [0]	P6	N1/N1	106.76	117.91	150.13	N/A	N/A	N/A	<100	<100	121.01	<100	<100	N/A	149.81	Monitor Fresno Procedure

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
California Ave-Sanger 115 kV Line	CALIFORNIA AVE-MCCALL 115KV [2360] & MCCALL-WEST FRESNO #2 115KV [2370]	P7-1	DCTL	88.62	93.99	106.8	N/A	N/A	N/A	32.43	7.49	95.41	3.66	70.06	N/A	106.82	Continue to Monitor future forecast
	CALIFORNIA AVE-MCCALL 115KV [2360] & MCCALL-WEST FRESNO #2 115KV [2370]	P6	N1/N1	<100	<100	106.77	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	106.79	Continue to Monitor future forecast
	MCCALL-WEST FRESNO #2 115KV [2370] & CALIFORNIA AVE-MCCALL 115KV [2360]	P6	N1/N1	<100	<100	106.77	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	106.79	Continue to Monitor future forecast
McCall-California Ave 115 kV Line (California Ave-Danish Creamery)	MCCALL-WEST FRESNO #2 115KV [2370] & SANGER-CALIFORNIA AVE 115KV [9130]	P6	N1/N1	<100	<100	114.41	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	114.46	Continue to Monitor future forecast
	SANGER-CALIFORNIA AVE 115KV [9130] & MCCALL-WEST FRESNO #2 115KV [2370]	P6	N1/N1	<100	<100	114.41	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	114.46	Continue to Monitor future forecast
McCall-West Fresno 115 kV Line	CALIFORNIA AVE-MCCALL 115KV [2360] & SANGER-CALIFORNIA AVE 115KV [9130]	P6	N1/N1	<100	<100	105.75	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	105.78	Continue to Monitor future forecast
	SANGER-CALIFORNIA AVE 115KV [9130] & CALIFORNIA AVE-MCCALL 115KV [2360]	P6	N1/N1	<100	<100	105.75	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	105.78	Continue to Monitor future forecast
Herndon-Barton 115 kV Line	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	106.2	<100	115.34	<100	N/A	<100	Generation re-dispatch
	PANOCHE-HELM 230KV [5370] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	104.79	<100	113.88	<100	N/A	<100	Generation re-dispatch
	PANOCHE-HELM 230KV [5370] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	104.96	<100	114.06	<100	N/A	<100	Generation re-dispatch
	HERNDON - 2D 115KV & HERNDON-BULLARD #2 LINE	P2-3	Bus/Breaker	94.38	85.6	95.47	N/A	N/A	N/A	79.07	113.78	90.59	113.85	37.44	N/A	92.88	Generation re-dispatch
	HERNDON 115KV SECTION 2D	P2-2	Bus/Breaker	94.36	85.58	95.43	N/A	N/A	N/A	79.07	113.78	90.57	113.85	37.43	N/A	92.84	Generation re-dispatch
	HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2-3	Bus/Breaker	93.84	85.14	94.93	N/A	N/A	N/A	79.46	114.08	90.12	114.15	36.99	N/A	92.35	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	77.84	78.2	82.46	N/A	N/A	N/A	26.05	99.57	83.12	108.63	16.71	N/A	77.48	Sensitivity only
Herndon-Bullard #1 115 kV Line	HERNDON-BULLARD #1 115KV [1760] & Base Case	P6	N1/N1	<100	<100	100.06	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.09	Continue to monitor future forecast
Manchester-Airways-Sanger 115 kV Line (Manchester-Las Palmas)	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	102.11	<100	108.24	<100	N/A	<100	Generation re-dispatch
	PANOCHE-HELM 230KV [5370] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.76	<100	106.82	<100	N/A	<100	Generation re-dispatch
	PANOCHE-HELM 230KV [5370] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.93	<100	107.01	<100	N/A	<100	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	38.5	37.15	39.06	N/A	N/A	N/A	37.01	95.95	41.22	102.12	11.72	N/A	34.5	Sensitivity Only
Herndon-Manchester 115 kV Line	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	104.39	<100	N/A	<100	Sensitivity only
	PANOCHE-HELM 230KV [5370] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	103.05	<100	N/A	<100	Sensitivity only
	PANOCHE-HELM 230KV [5370] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	103.22	<100	N/A	<100	Sensitivity only
Herndon-Woodward 115 kV Line(Henrdon-Children's Hospital)	HERNDON-BARTON 115KV [1750] & HERNDON-MANCHESTER 115KV [1780]	P7-1	DCTL	86.2	81.68	89.32	N/A	N/A	N/A	61.92	106.31	86.99	109.23	38.4	N/A	87.08	Continue to Monitor future forecast
	HERNDON-BARTON 115KV [1750] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7-1	DCTL	71.83	67.22	74.13	N/A	N/A	N/A	67.19	107.83	72.29	110.09	27.42	N/A	71.92	Continue to Monitor future forecast
	BARTON-AIRWAYS-SANGER 115KV [1060] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7-1	DCTL	52.12	46.38	51.09	N/A	N/A	N/A	74.31	107.16	51.12	107.88	15.47	N/A	48.92	Continue to Monitor future forecast

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Herndon-Woodward 115 kV Line(Woodward-Children's Hospital)	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.32	<100	N/A	<100	Sensitivity Only
	HERNDON-BARTON 115KV [1750] & HERNDON-MANCHESTER 115KV [1780]	P7-1	DCTL	84.29	79.64	87.23	N/A	N/A	N/A	64.07	107.82	84.92	110.75	36.39	N/A	84.99	Generation re-dispatch
	HERNDON-BARTON 115KV [1750] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7-1	DCTL	69.97	65.19	72.07	N/A	N/A	N/A	69.26	109.32	70.23	111.59	25.4	N/A	69.86	Generation re-dispatch
	BARTON-AIRWAYS-SANGER 115KV [1060] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7-1	DCTL	50.35	44.36	49.1	N/A	N/A	N/A	76.4	108.62	49.08	109.35	13.4	N/A	46.93	Generation re-dispatch
McCall-Kingsburg #1 115 kV Line (Kingsburg Jct 2-Kingsburg)	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	101.32	N/A	<100	Sensitivity only
	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	123.96	<100	125.52	<100	N/A	<100	Generation re-dispatch
	MCCALL-KINGSBURG #2 115KV [2300] & P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0]	P6	N1/N1	<100	103.58	116.19	N/A	N/A	N/A	<100	<100	105.24	<100	<100	N/A	116.2	Continue to Monitor future forecast
	P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0] & MCCALL-KINGSBURG #2 115KV [2300]	P6	N1/N1	<100	103.58	116.19	N/A	N/A	N/A	<100	<100	105.23	<100	<100	N/A	116.2	Continue to Monitor future forecast
McCall-Kingsburg #1 115 kV Line (Kingsburg Jct 2-Kingsburg)	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	127.65	N/A	<100	Sensitivity only
	HENRIETTA-LEPRINO SW STA 115KV [1737] & MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	107.95	N/A	<100	Sensitivity only
	MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2 & HENRIETTA-LEPRINO SW STA 115KV [1737]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	107.95	N/A	<100	Sensitivity only
GWF-Kingsburg 115 kV Line (Kingsburg-Contadina)	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	139.97	N/A	<100	Sensitivity Only
Kingsburg-Corcoran #2 115 kV Line (Kingsburg-Waukena)	CORCORAN 115/70KV TB 1 & KINGSBURG-CORCORAN #1 115KV [2040] MOAS OPENED ON KINGSBURGE_Q529TP	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	108.5	N/A	<100	Sensitivity Only
	KINGSBURG-CORCORAN #1 115KV [2040] MOAS OPENED ON KINGSBURGE_Q529TP & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	116.2	N/A	<100	Sensitivity Only
	KINGSBURG-CORCORAN #1 115KV [2040] MOAS OPENED ON Q529TP_CORCORAN & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	110.39	N/A	<100	Sensitivity Only
Kingsburg-Corcoran #2 115 kV Line (Kingsburg-Jackson)	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	122.05	<100	118.81	<100	N/A	<100	Generation re-dispatch
McCall-Kingsburg #2 115kV line(Kingsburg-Guardian sub)	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	131.97	<100	133.69	<100	N/A	<100	Generation re-dispatch
	MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_SUNMAIDJCT & P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0]	P6	N1/N1	<100	103.86	116.9	N/A	N/A	N/A	<100	<100	105.55	<100	<100	N/A	116.9	Continue to Monitor future forecast
	MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2 & P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0]	P6	N1/N1	<100	103.89	116.8	N/A	N/A	N/A	<100	<100	105.58	<100	<100	N/A	116.81	Continue to Monitor future forecast
	P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0] & MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2	P6	N1/N1	<100	103.89	116.8	N/A	N/A	N/A	<100	<100	105.56	<100	<100	N/A	116.81	Continue to Monitor future forecast
	CORCORAN 115/70KV TB 1 & KINGSBURG-WAUKENA SW STA 115KV [2050]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	108.17	N/A	<100	Sensitivity Only

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Kingsburg-Corcoran #2 115 kV Line (Kingsburg-529T)	KINGSBURG-WAUKENA SW STA 115KV [2050] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	115.9	N/A	<100	Sensitivity Only
	KINGSBURG-WAUKENA SW STA 115KV [2050] & CORCORAN 115/70KV TB 1	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	108.17	N/A	<100	Sensitivity Only
Kingsburg-Corcoran #2 115 kV Line (Kingsburg-Jackson)	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	124.94	<100	121.62	<100	N/A	<100	Generation re-dispatch
McCall-Kingsburg #2 115kV line(McCall-Guardian sub)	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	110.53	N/A	<100	Sensitivity only
	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	129.17	<100	130.86	<100	N/A	<100	Generation re-dispatch
	GWF-KINGSBURG 115KV [1743] & MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2	P6	N1/N1	102.32	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Under Review
	MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2 & P1-2:A14:140:_JACKSONSWSTA-GWF_HEP 115KV [0]	P6	N1/N1	<100	107.85	120.55	N/A	N/A	N/A	<100	<100	109.57	<100	<100	N/A	120.55	Continue to Monitor future forecast
GWF-Kingsburg 115 kV Line (GWF-Contadina)	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	143.1	N/A	<100	Sensitivity only
	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	143.48	<100	138.54	<100	N/A	<100	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	60.4	90.18	88.6	N/A	N/A	N/A	14.48	97.84	92.39	123.83	13.91	N/A	83.04	Sensitivity only
	MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	43.05	48.22	51.2	N/A	N/A	N/A	26.32	35.19	49.14	5	102.5	N/A	50.15	Sensitivity only
Henrietta 230/115 kV Transformer Bank 3	Q272 0.55KV GEN UNIT 1 & CHSR09SWSTA-MUSTANGSS 230KV [0]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	111.98	<100	N/A	<100	Sensitivity only
	Q877PH12 0.39KV GEN UNIT 12 & CHSR09SWSTA-MUSTANGSS 230KV [0]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	111.85	<100	N/A	<100	Sensitivity only
	Q877PH3 0.63KV GEN UNIT 3 & CHSR09SWSTA-MUSTANGSS 230KV [0]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	111.83	<100	N/A	<100	Sensitivity only
	HELM-MCCALL 230KV [4860] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	127.8	<100	148.86	<100	N/A	<100	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	118.61	<100	140.03	<100	N/A	<100	Generation re-dispatch
	PANOCHHE-HELM 230KV [5370] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	117.42	<100	138.52	<100	N/A	<100	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	28.43	57.51	55.13	N/A	N/A	N/A	25.53	128.04	59.78	148.86	40.15	N/A	0.98	Generation re-dispatch
	PANOCHHE-TRANQLTYSS #1 230KV [0] & PANOCHHE-TRANQLTYSS #2 230KV [0]	P7-1	DCTL	17.81	39.06	38.27	N/A	N/A	N/A	26.77	94.66	40.72	105.89	54.36	N/A	0.7	Sensitivity only
	PANOCHHE 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	16.5	37.68	36.69	N/A	N/A	N/A	28.33	95.44	38.99	106.81	53.72	N/A	0.67	Sensitivity only
	CHSR09SWSTA-MUSTANGSS 230KV [0]	P1-2	N-1	<100	37.6	35.83	N/A	N/A	N/A	<100	93.84	37.44	111.57	<100	N/A	0.64	Sensitivity only
	GATES-MCCALL 230KV [4710] (HENTAP2-MUSTANGSS)	P2-1	Line Section w/o Fault	15.78	37.61	35.78	N/A	N/A	N/A	28.13	93.77	37.44	111.52	37.45	N/A	0.64	Sensitivity only
	CHSR09SWSTA 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	<100	37.6	35.83	N/A	N/A	N/A	<100	<100	37.44	111.57	<100	N/A	0.64	Sensitivity only

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Henrietta-GWF 115 kV Line (Henrietta-Leprino Jct)	ALPAUGHSTH 0.40KV GEN UNIT 1 & CHSR09SWSTA-MUSTANGSS 230KV [0]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	109.51	<100	N/A	<100	Sensitivity only
	KANSASS_S 12.47KV GEN UNIT F & CHSR09SWSTA-MUSTANGSS 230KV [0]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	109.52	<100	N/A	<100	Sensitivity only
	KENT_S 0.80KV GEN UNIT 1 & CHSR09SWSTA-MUSTANGSS 230KV [0]	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	109.5	<100	N/A	<100	Sensitivity only
	HELM-MCCALL 230KV [4860] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	125.63	<100	145.97	<100	N/A	<100	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	116.52	<100	137.3	<100	N/A	<100	Generation re-dispatch
	PANOCHÉ-HELM 230KV [5370] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	115.35	<100	135.76	<100	N/A	<100	Generation re-dispatch
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	28.51	57.03	53.84	N/A	N/A	N/A	25.69	125.93	59.32	145.95	39.92	N/A	48.24	Generation re-dispatch
	PANOCHÉ-TRANQLTYSS #1 230KV [0] & PANOCHÉ-TRANQLTYSS #2 230KV [0]	P7-1	DCTL	17.86	38.72	37.25	N/A	N/A	N/A	26.81	93.06	40.39	104.56	54.35	N/A	34.43	Sensitivity only
	PANOCHÉ 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	16.55	37.35	35.64	N/A	N/A	N/A	28.17	93.83	38.66	105.65	53.76	N/A	32.79	Sensitivity only
	CHSR09SWSTA-MUSTANGSS 230KV [0]	P1-2	N-1	<100	37.26	34.71	N/A	N/A	N/A	<100	92.14	37.11	109.28	<100	N/A	31.32	Sensitivity only
	CHSR09SWSTA 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	<100	37.26	34.71	N/A	N/A	N/A	<100	<100	37.11	109.28	<100	N/A	31.32	Sensitivity only
	GATES-MCCALL 230KV [4710] (HENTAP2-MUSTANGSS)	P2-1	Line Section w/o Fault	15.82	37.27	34.66	N/A	N/A	N/A	28.3	92.07	37.12	109.22	37.26	N/A	31.27	Sensitivity only
Panoche-Schindler #1 115 kV Line	EXCELSIORSS-PANOCHÉ2 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	106.64	117.55	150.7	N/A	N/A	N/A	<100	<100	120.23	139.88	120.94	N/A	150.78	Continue to monitor Fresno procedure
	PANOCHÉ2-EXCELSIORSS 115KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	106.64	117.55	150.7	N/A	N/A	N/A	<100	<100	120.23	139.88	120.94	N/A	150.78	Continue to monitor Fresno procedure
	GATES D 230/70KV TB 5 & EXCELSIORSS-PANOCHÉ2 115KV [0]	P6	N1/N1	104.35	116.4	148.34	N/A	N/A	N/A	<100	<100	119.33	136.33	118.77	N/A	147.36	Continue to monitor Fresno procedure
Kingsburg-Corcoran #1 115 kV Line (S0529 Tap-Corcoran)	KINGSBURG-WAUKENA SW STA 115KV [2050] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	110.49	N/A	<100	Sensitivity only
	P1-2:A14:117:_CORCORAN-ANGIOLA 70KV [8600] & KINGSBURG-WAUKENA SW STA 115KV [2050]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	103.49	N/A	<100	Sensitivity only
	P1-2:A14:142:_JACKSONSWSTA-WAUKENA_SS #1 115KV [0] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.57	<100	115.79	<100	N/A	<100	Generation re-dispatch
Coppermine-Tivy Valley 70 kV Line	BORDEN 230/70KV TB 1 & BORDEN 230/70KV TB 4	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	123.98	<100	<100	150.43	<100	N/A	<100	Generation re-dispatch
	BORDEN 230/70KV TB 4 & BORDEN 230/70KV TB 1	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	123.98	<100	<100	150.43	<100	N/A	<100	Generation re-dispatch
Mendota-Giffen 70 kV Line (Giffen Jct-Westland Jct)	NORTHSTAR 0.36KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	134.95	<100	N/A	<100	sensitivity only
	Q1028Q1029PV 34.50KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	135.11	<100	N/A	<100	sensitivity only
	Q1032G3 0.55KV GEN UNIT 3 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	135.36	<100	N/A	<100	sensitivity only
	230KV [5000] & 230KV [5481]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	123.42	<100	139.59	<100	N/A	<100	Generation re-dispatch
	230KV [5481] & 230KV [5000]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	123.42	<100	139.59	<100	N/A	<100	Generation re-dispatch
	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & PANOCHÉ-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	128.98	<100	106.36	<100	N/A	<100	Generation re-dispatch

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
	PANOCHE 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	10.57	9.61	9.77	N/A	N/A	N/A	64.91	119.77	9.66	127.09	27.14	N/A	9.81	Generation re-dispatch
	PANOCHE-TRANQLTYSS #1 230KV [0] & PANOCHE-TRANQLTYSS #2 230KV [0]	P7-1	DCTL	10.56	9.61	9.77	N/A	N/A	N/A	56.99	122.51	9.66	138.46	27.14	N/A	9.81	Generation re-dispatch
	HELM 230/70KV TB 1	P1-3	N-1	N/A	N/A	N/A	N/A	N/A	N/A	54.08	99.8	N/A	134.89	N/A	N/A	N/A	sensitivity only
	HELM 230KV SECTION 1D	P2-2	Bus/Breaker	N/A	N/A	N/A	N/A	N/A	N/A	54.04	99.84	N/A	135.03	N/A	N/A	N/A	sensitivity only
Mendota-San Joaquin-Helm 70 kV Line (San Joaquin Jct-Giffen Jct)	NORTHSTAR 0.36KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	116.98	<100	N/A	<100	sensitivity only
	Q1028Q1029PV 34.50KV GEN UNIT 1 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	117.11	<100	N/A	<100	sensitivity only
	Q1032G3 0.55KV GEN UNIT 3 & HELM 230/70KV TB 1	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	117.33	<100	N/A	<100	sensitivity only
	230KV [5000] & 230KV [5481]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	109.65	<100	121.24	<100	N/A	<100	Generation re-dispatch
	230KV [5481] & 230KV [5000]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	109.65	<100	121.24	<100	N/A	<100	Generation re-dispatch
	P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0] & PANOCHE-HELM 230KV [5370]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	115.5	<100	<100	<100	N/A	<100	Generation re-dispatch
	PANOCHE-TRANQLTYSS #1 230KV [0] & PANOCHE-TRANQLTYSS #2 230KV [0]	P7-1	DCTL	29.2	31.93	36.54	N/A	N/A	N/A	48.64	108.75	32.31	120.15	70.64	N/A	36.5	Generation re-dispatch
	PANOCHE 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	29.2	31.93	36.54	N/A	N/A	N/A	62.45	106.01	32.31	108.76	70.63	N/A	36.49	Generation re-dispatch
	HELM 230/70KV TB 1	P1-3	N-1	N/A	N/A	N/A	N/A	N/A	N/A	57.02	86.3	N/A	116.93	N/A	N/A	N/A	sensitivity only
	HELM 230KV SECTION 1D	P2-2	Bus/Breaker	N/A	N/A	N/A	N/A	N/A	N/A	56.99	86.34	N/A	117.04	N/A	N/A	N/A	sensitivity only
Helm-Kerman 70 kV Line	GREGG-HERNDON #1 230KV [4830] & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	Sensitivity only
	GREGG-HERNDON #2 230KV [4840] & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	Sensitivity only
Tivy Valley-Reedley 70 kV Line	BORDEN 230/70KV TB 1 & BORDEN 230/70KV TB 4	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	133.12	100.02	<100	159.72	<100	N/A	<100	Generation re-dispatch
	BORDEN 230/70KV TB 4 & BORDEN 230/70KV TB 1	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	133.12	100.02	<100	159.72	<100	N/A	<100	Generation re-dispatch
Sanger-Reedley 115 kV Line(Sanger - Parlier)	KINGS RIVER-SANGER-REEDLEY 115KV [2030] & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	106.58	106.93	129.64	N/A	N/A	N/A	<100	<100	108.84	<100	<100	N/A	129.66	System upgrade, operating solution or SPS
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & KINGS RIVER-SANGER-REEDLEY 115KV [2030]	P6	N1/N1	106.66	106.94	129.64	N/A	N/A	N/A	<100	<100	108.84	<100	<100	N/A	129.66	System upgrade, operating solution or SPS
Sanger-Reedley 115 kV Line(Parlier- Reedley)	KINGS RIVER-SANGER-REEDLEY 115KV [2030] & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	<100	<100	117.54	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	117.56	Monitor future forecast
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & KINGS RIVER-SANGER-REEDLEY 115KV [2030]	P6	N1/N1	<100	<100	117.54	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	117.56	Monitor future forecast
	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY 115/70KV TB 4	P3	G1/N1	<100	<100	114.58	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Maintenance Project
	KINGSRIV 13.80KV GEN UNIT 1 & REEDLEY 115/70KV TB 4	P3	G1/N1	<100	<100	114.54	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Maintenance Project
	MCCALL1T 13.20KV GEN UNIT 1 & REEDLEY 115/70KV TB 4	P3	G1/N1	<100	<100	114.55	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Maintenance Project



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Reedley 115/70 kV Transformer #2	P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050] & REEDLEY 115/70KV TB 4	P6	N1/N1	105.18	107.41	122.92	N/A	N/A	N/A	<100	<100	109.28	<100	<100	N/A	<100	Maintenance Project
	REEDLEY 115/70KV TB 4 & Base Case	P6	N1/N1	118.21	122.14	132.39	N/A	N/A	N/A	<100	<100	123.99	<100	<100	N/A	<100	Maintenance Project
	REEDLEY 115/70KV TB 4 & P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050]	P6	N1/N1	105.17	<100	122.92	N/A	N/A	N/A	<100	<100	109.28	<100	<100	N/A	<100	Maintenance Project
	REEDLEY 115/70KV TB 4	P1-3	N-1	102.2	105.6	114.47	N/A	N/A	N/A	53.42	4.16	107.1	11.83	61.53	N/A	<100	Maintenance Project
	REEDLEY 115KV - RING R3 & R4	P2-3	Bus/Breaker	102.19	105.59	114.47	N/A	N/A	N/A	52.6	4.25	107.19	13.11	61.52	N/A	<100	Maintenance Project
	REEDLEY 115KV - RING R5 & R4	P2-3	Bus/Breaker	102.26	105.61	114.89	N/A	N/A	N/A	50.92	3.5	107.16	10.62	61.53	N/A	<100	Maintenance Project
Reedley 115/70 kV Transformer #2	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY 115/70KV TB 2	P3	G1/N1	<100	<100	101.77	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Continue to monitor future forecast
	KINGSRIV 13.80KV GEN UNIT 1 & REEDLEY 115/70KV TB 2	P3	G1/N1	<100	<100	101.71	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Continue to monitor future forecast
	MCCALL1T 13.20KV GEN UNIT 1 & REEDLEY 115/70KV TB 2	P3	G1/N1	<100	<100	101.73	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Continue to monitor future forecast
	P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050] & REEDLEY 115/70KV TB 2	P6	N1/N1	<100	<100	110.34	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Continue to monitor future forecast
	REEDLEY 115/70KV TB 2 & Base Case	P6	N1/N1	<100	101.36	111.77	N/A	N/A	N/A	<100	<100	102.9	<100	<100	N/A	<100	Continue to monitor future forecast
	REEDLEY 115/70KV TB 2 & P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050]	P6	N1/N1	<100	<100	110.34	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Continue to monitor future forecast
	REEDLEY 115/70KV TB 2	P1-3	N-1	89.38	92.15	101.62	N/A	N/A	N/A	45.22	2.19	93.56	9.18	53.68	N/A	1.12	Continue to monitor future forecast
	REEDLEY 115KV - RING R1 & R6	P2-3	Bus/Breaker	89.37	92.14	101.68	N/A	N/A	N/A	44.72	1.99	93.57	9.92	53.67	N/A	1.12	Continue to monitor future forecast
	REEDLEY 115KV - RING R5 & R6	P2-3	Bus/Breaker	89.46	92.16	102.23	N/A	N/A	N/A	43.11	1.81	93.51	8.23	53.68	N/A	1.12	Continue to monitor future forecast
Reedley-Dinuba 70 kV Line	P1-2:A14:110:_ REEDLEY-OROSI 70KV [9060] & Base Case	P6	N1/N1	122.74	124.92	143.87	N/A	N/A	N/A	<100	<100	127.19	<100	<100	N/A	143.89	
	REEDLEY-OROSI 70KV [9060] (REEDLEY-ORSI JCT)	P2-1	Line Section w/o Fault	115.58	117.68	138.21	N/A	N/A	N/A	39.12	13.9	119.6	24.07	65.75	N/A	138.25	
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & P1-2:A14:110:_ REEDLEY-OROSI 70KV [9060]	P6	N1/N1	108.88	109.93	131.95	N/A	N/A	N/A	<100	<100	111.99	<100	<100	N/A	131.99	
	P1-2:A14:110:_ REEDLEY-OROSI 70KV [9060] & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	108.79	109.79	131.96	N/A	N/A	N/A	<100	<100	112.03	<100	<100	N/A	131.98	
	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY-OROSI 70KV [9060]	P3	G1/N1	105.36	<100	124.34	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	124.35	
	MCCALL1T 13.20KV GEN UNIT 1 & REEDLEY-OROSI 70KV [9060]	P3	G1/N1	105.48	<100	124.03	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	124.06	
	KINGSRIV 13.80KV GEN UNIT 1 & REEDLEY-OROSI 70KV [9060]	P3	G1/N1	105.34	<100	123.88	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	123.9	
	REEDLEY-OROSI 70KV [9060] (OROSI-ORSI JCT)	P2-1	Line Section w/o Fault	104.75	106.59	123.49	N/A	N/A	N/A	35.52	14.21	108.53	23.7	58.87	N/A	123.51	
	REEDLEY-OROSI 70KV [9060]	P1-2	N-1	105.01	106.87	123.11	N/A	N/A	N/A	35.57	14.23	108.82	23.73	59.03	N/A	123.14	



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
	OROSI 70KV SECTION 1D	P2-2	Bus/Breaker	87.47	89.6	102.85	N/A	N/A	N/A	30.26	13.41	91.4	21.96	47.47	N/A	102.87	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
	OROSI - 1D 70KV & REEDLEY-OROSI LINE	P2-3	Bus/Breaker	87.68	89.82	102.57	N/A	N/A	N/A	30.3	13.43	91.64	21.98	47.6	N/A	102.59	
Reedley-Orosi 70 kV Line (Reedley-Orosi Jct)	P1-2:A14:109:_REEDLEY-DINUBA #1 70KV [9050] & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	103.69	104.25	132.77	N/A	N/A	N/A	<100	<100	106.55	<100	<100	N/A	132.91	
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & P1-2:A14:109:_REEDLEY-DINUBA #1 70KV [9050]	P6	N1/N1	103.85	104.14	132.76	N/A	N/A	N/A	<100	<100	106.52	<100	<100	N/A	132.8	
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON WAHTOKE_REEDLEY & P1-2:A14:109:_REEDLEY-DINUBA #1 70KV [9050]	P6	N1/N1	101.76	102.56	127.03	N/A	N/A	N/A	<100	<100	104.77	<100	<100	N/A	127.06	
	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	100.14	<100	122.5	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	122.51	
	MCCALL1T 13.20KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	100.25	<100	122.12	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	122.15	
	KINGSRIV 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	100.11	<100	121.95	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	121.97	
	REEDLEY-DINUBA #1 70KV [9050]	P1-2	N-1	99.77	101.3	121.06	N/A	N/A	N/A	33.52	11.9	103.23	20.56	56.18	N/A	121.09	
	REEDLEY-DINUBA #1 70KV [9050] (DNUBAJCT-DINUBA)	P2-1	Line Section w/o Fault	99.76	101.28	121.03	N/A	N/A	N/A	33.52	11.9	103.21	20.56	56.17	N/A	121.06	
	REEDLEY-DINUBA #1 70KV [9050] (REEDLEY-DNUBAJCT)	P2-1	Line Section w/o Fault	99.69	101.24	120.89	N/A	N/A	N/A	33.52	11.86	103.17	20.53	56.12	N/A	120.92	
	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	<100	100.44	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	
	P1-2:A14:109:_REEDLEY-DINUBA #1 70KV [9050] & Base Case	P6	N1/N1	114.28	116.2	138.89	N/A	N/A	N/A	<100	<100	118.53	<100	<100	N/A	138.98	



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Dinuba-Orosi 70 kV Line	P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050] & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	102.27	102.61	132.01	N/A	N/A	N/A	<100	<100	105.46	<100	<100	N/A	132.17	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050]	P6	N1/N1	102.57	102.23	132	N/A	N/A	N/A	<100	<100	105.42	<100	<100	N/A	132.05	
	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	<100	<100	121.16	N/A	N/A	N/A	<100	<100	102.58	<100	<100	N/A	121.17	
	MCCALL1T 13.20KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	<100	<100	120.77	N/A	N/A	N/A	<100	<100	102.67	<100	<100	N/A	120.79	
	KINGSRIV 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	<100	<100	120.58	N/A	N/A	N/A	<100	<100	102.44	<100	<100	N/A	120.61	
	REEDLEY-DINUBA #1 70KV [9050]	P1-2	N-1	98.33	100.08	119.65	N/A	N/A	N/A	32.71	19.06	102.08	28.37	48.71	N/A	119.69	
	REEDLEY-DINUBA #1 70KV [9050] (DNUBAJCT-DINUBA)	P2-1	Line Section w/o Fault	98.31	100.06	119.63	N/A	N/A	N/A	32.71	19.06	102.07	28.37	48.7	N/A	119.66	
	REEDLEY-DINUBA #1 70KV [9050] (REEDLEY-DNUBAJCT)	P2-1	Line Section w/o Fault	98.22	100.06	119.39	N/A	N/A	N/A	32.7	19.29	102.06	28.52	48.64	N/A	119.43	
Reedley-Dinuba 70 kV Line (Dinuba Jct-Dinuba)	P1-2:A14:110:_ REEDLEY-OROSI 70KV [9060] & Base Case	P6	N1/N1	<100	<100	100.33	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.35	
Reedley-Orosi 70 kV Line (Orosi Jct-Orosi)	MCCALL1T 13.20KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	<100	108.43	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
	P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050] & Base Case	P6	N1/N1	124.67	126.3	151.13	N/A	N/A	N/A	<100	<100	128.71	<100	<100	N/A	151.21	
	P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050] & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N1/N1	110.85	111.21	141.9	N/A	N/A	N/A	<100	<100	113.7	<100	<100	N/A	142.06	
	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & P1-2:A14:109:_ REEDLEY-DINUBA #1 70KV [9050]	P6	N1/N1	111.04	111.06	141.89	N/A	N/A	N/A	<100	<100	113.66	<100	<100	N/A	141.94	
	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	107.04	<100	130.87	N/A	N/A	N/A	<100	<100	110.64	<100	<100	N/A	130.88	
	MCCALL1T 13.20KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	107.15	<100	130.47	N/A	N/A	N/A	<100	<100	110.74	<100	<100	N/A	130.5	
	KINGSRIV 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	107	<100	130.28	N/A	N/A	N/A	<100	<100	110.49	<100	<100	N/A	130.3	
	REEDLEY-DINUBA #1 70KV [9050]	P1-2	N-1	106.64	108.05	129.33	N/A	N/A	N/A	35.63	14.28	110.12	23.67	59	N/A	129.36	
	REEDLEY-DINUBA #1 70KV [9050] (DNUBAJCT-DINUBA)	P2-1	Line Section w/o Fault	106.62	108.04	129.3	N/A	N/A	N/A	35.63	14.28	110.1	23.67	58.99	N/A	129.33	
	REEDLEY-DINUBA #1 70KV [9050] (REEDLEY-DNUBAJCT)	P2-1	Line Section w/o Fault	106.52	107.97	129.13	N/A	N/A	N/A	35.59	14.17	110.03	23.6	58.88	N/A	129.17	
Leprino Jct SS-GWF 115 kV Line	GATES-GREGG 230KV [4700] & GATES-MCCALL 230KV [4710]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	143.15	N/A	<100	sensitivity only
	GATES-GREGG 230KV [4700] & P1-2:A14:137:_ CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	143.55	<100	138.6	<100	N/A	<100	Generation re-dispatch
	GATES-GREGG 230KV [4700] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	103.1	<100	N/A	<100	sensitivity only



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	13.92	43.34	41.07	N/A	N/A	N/A	14.82	97.84	45.52	123.83	14.06	N/A	35.53	sensitivity only
	MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	5.63	1.93	5.95	N/A	N/A	N/A	26.32	35.25	2.68	5	102.53	N/A	5.69	sensitivity only
GWF-Henrietta 70kV Line	GATES D 230/70KV TB 5 & SCHINDLR 115/12.47KV TB 2	P6	N1/N1	Diverge	Diverge	Diverge	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	Diverge	System reconfiguration
	GATES D 230/70KV TB 5 & HELMS-GREGG #2 230KV [4880]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	<100	System reconfiguration
Gates 230/70 kV Transformer Bank 5	PANOCHÉ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7-1	DCTL	76.42	82.88	97.67	N/A	N/A	N/A	40.76	105.48	83.99	95.73	81.74	N/A	1.93	Generation re-dispatch
	PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	59.8	74.35	N/A	N/A	N/A	<100	105.38	60.9	95.56	<100	N/A	1.44	Generation re-dispatch
Gates-Jayne SWT 70kV Line	GATES D 230/70KV TB 5 & SCHINDLR 115/12.47KV TB 2	P6	N1/N1	<100	<100	Diverge	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	Diverge	Continue to monitor future forecast
	SCHINDLR 115/12.47KV TB 2 & GATES D 230/70KV TB 5	P6	N1/N1	<100	<100	Diverge	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	Diverge	Continue to monitor future forecast
Jayne SWT-Coalinga #1 70kV Line	GATES D 230/70KV TB 5 & SCHINDLR 115/12.47KV TB 2	P6	N1/N1	<100	Diverge	Diverge	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	Diverge	Continue to monitor future forecast
	SCHINDLR 115/12.47KV TB 2 & GATES D 230/70KV TB 5	P6	N1/N1	<100	<100	Diverge	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	Diverge	Continue to monitor future forecast
Five points-Huron-Gates 70 kV Line (Huron Jct-Calflax)	PANOCHÉ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7-1	DCTL	104.22	127.34	152.56	N/A	N/A	N/A	54.15	177.34	128.74	187	145.53	N/A	152.62	System reconfiguration
	PANOCHÉ-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHÉ1_KAMM & EXCELSIORSS-PANOCHÉ2 115KV [0]	P6	N1/N1	104.13	127.09	152.53	N/A	N/A	N/A	<100	<100	128.47	186.99	145.59	N/A	152.54	System reconfiguration
	PANOCHÉ-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHÉ1_KAMM & PANOCHÉ2-EXCELSIORSS 115KV [0]	P6	N1/N1	104.13	127.09	152.53	N/A	N/A	N/A	<100	<100	128.47	186.99	145.59	N/A	152.54	System reconfiguration
	EXCELSIORSS-PANOCHÉ2 115KV [0] & PANOCHÉ-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHÉ1_KAMM	P6	N1/N1	103.8	127.09	152.37	N/A	N/A	N/A	<100	<100	128.4	187	145.58	N/A	152.36	System reconfiguration
	EXCELSIORSS 115KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	82.74	103.72	127.16	N/A	N/A	N/A	36.24	91.89	104.72	102.95	60.42	N/A	127.22	System reconfiguration
	EXCELSIORSS-PANOCHÉ1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7-1	DCTL	82.34	105.12	123.3	N/A	N/A	N/A	37.02	155.8	106.06	166.7	128.98	N/A	123.35	System reconfiguration
	PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	71.17	92.3	N/A	N/A	N/A	<100	176.79	72.44	186.37	<100	N/A	87.45	Generation re-dispatch
	MUSTANGSS-GATES #1 230KV [0] & MUSTANGSS-GATES #2 230KV [0] (2)	P7-1	DCTL	24.79	51.86	37.98	N/A	N/A	N/A	55.26	76.71	47.65	101.67	32.93	N/A	36.03	Sensitivity only
	MUSTANGSS-GATES #1 230KV [0] & MUSTANGSS-GATES #2 230KV [0]	P7-1	DCTL	19.49	45.92	31.39	N/A	N/A	N/A	57.27	91.61	41.78	105.95	54.89	N/A	29.25	Sensitivity only
	MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	19.5	45.9	31.38	N/A	N/A	N/A	57.06	91.23	41.76	105.94	54.21	N/A	29.23	Sensitivity only
	GATES D 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	105.33	<100	<100	N/A	N/A	N/A	42.6	35.06	<100	<100	20.23	N/A	<100	System reconfiguration



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Schindler-Coalinga #2 70 kV Line (S0526 Tap-Pleasant Valley)	P1-2:A14:129:_SCHLNDLR-FIVEPOINTSSS #1 70KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	173.63	177.49	252.47	N/A	N/A	N/A	<100	<100	183.65	<100	<100	N/A	253.32	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:129:_SCHLNDLR-FIVEPOINTSSS #1 70KV [0]	P6	N1/N1	169.03	176.99	250.52	N/A	N/A	N/A	<100	<100	184.03	<100	<100	N/A	250.64	System reconfiguration
	P1-2:A14:125:_GATES-HURON-FIVEPOINTSSS 70KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	152.67	161.25	176.48	N/A	N/A	N/A	<100	<100	166.38	<100	<100	N/A	176.64	System reconfiguration
	GATES D 230KV - SECTION 2D & 1D	P2-4	Bus/Breaker	<100	101.2	108.03	N/A	N/A	N/A	<100	<100	104.54	17.97	<100	N/A	108.45	System reconfiguration
	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	105.55	98.72	106.96	N/A	N/A	N/A	38.95	14.95	103.2	6.83	25.06	N/A	107.86	Install Redundant protection
	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	95	94.5	102.78	N/A	N/A	N/A	41.76	27.22	97.25	9.4	22.59	N/A	103.12	System reconfiguration
	WESTLND5 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	101	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	101.36	System reconfiguration
	GATES - MA 70KV & GATES-HURON-FIVEPOINTSSS LINE	P2-3	Bus/Breaker	106.48	99.13	100.19	N/A	N/A	N/A	48.57	16.38	102.5	33.04	55.41	N/A	100.72	System reconfiguration
	SUNCTY D 12.00KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.44	System reconfiguration
	SANDDRAG 12.00KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.4	System reconfiguration
	GATES - MA 70KV & GATES-COALINGA #2 LINE	P2-3	Bus/Breaker	101.14	93.57	93.26	N/A	N/A	N/A	46.67	20.01	97.11	37.13	56.76	N/A	93.77	System reconfiguration
	GATES 70KV SECTION MA	P2-2	Bus/Breaker	101.09	93.35	93.09	N/A	N/A	N/A	46.69	19.97	96.86	37.21	56.71	N/A	93.59	System reconfiguration
	GATES - MA 70KV & GATES-TULARE LAKE LINE	P2-3	Bus/Breaker	101.09	93.35	93.09	N/A	N/A	N/A	46.69	19.97	96.86	37.21	56.71	N/A	93.59	System reconfiguration
	PANOCHESCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7-1	DCTL	33.52	50.68	58.79	N/A	N/A	N/A	15.47	143.19	50.97	146.77	143.76	N/A	58.81	Generation re-dispatch
	EXCELSIORSS-PANOCH1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7-1	DCTL	24.68	41.41	41.42	N/A	N/A	N/A	7.5	127.59	41.37	132.1	131.93	N/A	41.44	Generation re-dispatch
	PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	32.41	20.78	N/A	N/A	N/A	<100	142.76	32.45	146.29	<100	N/A	18.08	Generation re-dispatch
	GATES D 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	110.18	<100	<100	N/A	N/A	N/A	41.27	89.56	<100	<100	51.06	N/A	<100	System Reconfiguration
	ELNIDO 13.80KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	100.36	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Monitor future forecast
	Q581 0.38KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	100.35	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	Monitor future forecast
	WESTLND5 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	100.65	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	<100	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:132:_COALINGA #1-SAN MIGUEL 70KV [8580]	P6	N1/N1	106.51	116.57	132.79	N/A	N/A	N/A	<100	<100	117.99	<100	<100	N/A	<100	System reconfiguration
	P1-2:A14:121:_ARCO-TULARE LAKE 70KV [8460] & GATES D 230/70KV TB 5	P6	N1/N1	109.88	106.9	119.69	N/A	N/A	N/A	<100	<100	109.57	<100	<100	N/A	<100	System reconfiguration
	P1-2:A14:132:_COALINGA #1-SAN MIGUEL 70KV [8580] & GATES D 230/70KV TB 5	P6	N1/N1	106.6	116.41	132.62	N/A	N/A	N/A	<100	<100	117.87	<100	<100	N/A	<100	System reconfiguration



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Schindler 115/70 kV Transformer Bank 1	GATES D 230KV - SECTION 2D & 1D	P2-4	Bus/Breaker	<100	105.94	109.18	N/A	N/A	N/A	<100	<100	109.46	66.84	<100	N/A	<100	System reconfiguration
	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	110.38	103.29	108.05	N/A	N/A	N/A	37.54	69.24	108.01	45.59	39.47	N/A	<100	Install Redundant protection
	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	100.21	98.77	104.09	N/A	N/A	N/A	40.39	82.34	101.62	58.75	44.95	N/A	<100	System reconfiguration
	GATES D 230/70KV TB 5	P1-3	N-1	97.49	94.16	100.19	N/A	N/A	N/A	41.65	71.08	96.6	46.87	41.08	N/A	<100	Monitor future forecast
	PANOCHЕ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHЕ2 115KV [3231]	P7-1	DCTL	47.8	61.62	80.08	N/A	N/A	N/A	27.1	133.53	62.28	140.84	122.65	N/A	<100	Generation re-dispatch
	EXCELSIORSS-PANOCHЕ1 115KV [3250] & EXCELSIORSS-PANOCHЕ2 115KV [3231]	P7-1	DCTL	28.55	41.52	58.25	N/A	N/A	N/A	10.46	114.66	41.88	122.63	107.85	N/A	<100	Generation re-dispatch
	PANOCHЕ1 SECTION 1D & PANOCHЕ2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	11.45	34.66	N/A	N/A	N/A	<100	133.36	12.09	140.67	<100	N/A	<100	Generation re-dispatch
Schindler-Coalinga2 70 kV Line (Schindler-Q526 Tap)	GATES D 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	108.27	<100	<100	N/A	N/A	N/A	43.47	64.72	<100	<100	28.73	N/A	<100	Under Review
	P1-2:A14:129:_SCHLNDLR-FIVEPOINTSSS #1 70KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	173	174.47	242.91	N/A	N/A	N/A	<100	<100	180.54	<100	<100	N/A	243.88	System Reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:129:_SCHLNDLR-FIVEPOINTSSS #1 70KV [0]	P6	N1/N1	168.22	173.76	240.72	N/A	N/A	N/A	<100	<100	180.66	<100	<100	N/A	240.85	System Reconfiguration
	P1-2:A14:125:_GATES-HURON-FIVEPOINTSSS 70KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	151.22	154.9	170.74	N/A	N/A	N/A	<100	<100	160.1	<100	<100	N/A	170.94	System Reconfiguration
	GATES D 230KV - SECTION 2D & 1D	P2-4	Bus/Breaker	<100	101.18	108.08	N/A	N/A	N/A	<100	<100	104.63	50.82	<100	N/A	108.53	System Reconfiguration
	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	108.49	98.49	106.91	N/A	N/A	N/A	39.64	45.08	103.2	30.19	17.91	N/A	107.89	Install Redundant protection
	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	97.57	93.83	102.25	N/A	N/A	N/A	42.62	57.63	96.78	42.91	22.6	N/A	102.63	System Reconfiguration
	WESTLND S 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	100.48	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.86	System Reconfiguration
	SUNCTY D 12.00KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	100.04	System Reconfiguration
	GATES - MA 70KV & GATES-HURON-FIVEPOINTSSS LINE	P2-3	Bus/Breaker	107.46	95.59	98.46	N/A	N/A	N/A	49.28	22.17	99.24	5.31	16.15	N/A	99.03	Under Review
	GATES - MA 70KV & GATES-COALINGA #2 LINE	P2-3	Bus/Breaker	102.31	89.1	91.42	N/A	N/A	N/A	47.44	17	92.72	1.9	17.76	N/A	91.97	Under Review
	GATES 70KV SECTION MA	P2-2	Bus/Breaker	102.37	89	91.39	N/A	N/A	N/A	47.48	17	92.61	1.9	17.76	N/A	91.94	Under Review
	GATES - MA 70KV & GATES-TULARE LAKE LINE	P2-3	Bus/Breaker	102.37	89	91.39	N/A	N/A	N/A	47.48	17	92.61	1.9	17.76	N/A	91.94	Under Review
	PANOCHЕ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHЕ2 115KV [3231]	P7-1	DCTL	18.66	35.31	52.01	N/A	N/A	N/A	11.44	110.57	35.65	114.7	107.09	N/A	52.01	Generation re-dispatch
	EXCELSIORSS-PANOCHЕ1 115KV [3250] & EXCELSIORSS-PANOCHЕ2 115KV [3231]	P7-1	DCTL	4.24	22.27	31.89	N/A	N/A	N/A	7.13	95.17	22.25	100.05	95.32	N/A	31.88	Generation re-dispatch
	PANOCHЕ1 SECTION 1D & PANOCHЕ2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	14.81	11.94	N/A	N/A	N/A	<100	110.06	14.69	114.15	<100	N/A	9.49	Generation re-dispatch

Study Area: PG&E Greater Fresno
Thermal Overloads



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Schindler-Five Points 70 kV Line	GATES D 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	100.95	<100	<100	N/A	N/A	N/A	33.43	96.64	<100	<100	62.55	N/A	<100	System reconfiguration
	P1-2:A14:128:_SCHINDLER-COALINGA #2 70KV [9150] & GATES D 230/70KV TB 5	P6	N1/N1	129.81	129.91	153.07	N/A	N/A	N/A	<100	100.4	134.12	<100	<100	N/A	153.25	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:128:_SCHINDLER-COALINGA #2 70KV [9150]	P6	N1/N1	125.79	125.28	149.52	N/A	N/A	N/A	<100	<100	130.07	<100	<100	N/A	149.28	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:132:_COALINGA #1-SAN MIGUEL 70KV [8580]	P6	N1/N1	<100	112.26	137.28	N/A	N/A	N/A	<100	<100	113.57	<100	<100	N/A	137.48	System reconfiguration
	GATES D 230KV - SECTION 2D & 1D	P2-4	Bus/Breaker	<100	101.09	110.8	N/A	N/A	N/A	<100	<100	104.15	69.72	<100	N/A	111.18	System reconfiguration
	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	101.13	98.76	109.86	N/A	N/A	N/A	30.18	79.71	102.97	51.93	52.96	N/A	110.68	Install Redundant protection
	Q532 0.55KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	104.39	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	106.42	Monitor future forecast
	PANOCHESCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7-1	DCTL	69.17	84.28	106.35	N/A	N/A	N/A	41.42	135.42	85.27	144.56	118.8	N/A	106.39	Monitor future forecast
	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	92.03	94.64	105.94	N/A	N/A	N/A	32.73	90.54	97.51	62.87	57.53	N/A	106.25	System reconfiguration
	WESTLND5 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	103.19	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	103.66	System reconfiguration
	Q1032G3 0.55KV GEN UNIT 3 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	102.57	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	102.75	Continue to monitor future forecast
	GATES D 230/70KV TB 5	P1-3	N-1	89.59	90.49	102.13	N/A	N/A	N/A	33.74	81.12	92.96	52.86	54.29	N/A	102.39	Continue to monitor future forecast
	EXCELSIORSS-PANOCH1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7-1	DCTL	48.84	61.94	79.9	N/A	N/A	N/A	25.51	115.72	62.63	125.87	103.63	N/A	79.93	Generation re-dispatch
	PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	32.53	53.49	N/A	N/A	N/A	<100	134.86	33.38	143.95	<100	N/A	49.43	Generation re-dispatch
Schindler-Coalinga2 70 kV Line (Pleasant Valley-Coalinga #2)	P1-2:A14:129:_SCHLNDLR-FIVEPOINTSSS #1 70KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	142.78	145.39	211	N/A	N/A	N/A	<100	100.1	151.11	<100	<100	N/A	211.62	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:129:_SCHLNDLR-FIVEPOINTSSS #1 70KV [0]	P6	N1/N1	138.26	143.93	209.43	N/A	N/A	N/A	<100	<100	150.84	<100	<100	N/A	209.53	System reconfiguration
	P1-2:A14:125:_GATES-HURON-FIVEPOINTSSS 70KV [0] & GATES D 230/70KV TB 5	P6	N1/N1	122.14	127.31	141.71	N/A	N/A	N/A	<100	<100	132.05	<100	<100	N/A	141.88	System reconfiguration
	PANOCHESCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7-1	DCTL	54.11	65.95	84.6	N/A	N/A	N/A	31.23	122.21	66.4	125.92	115.98	N/A	84.61	Generation re-dispatch
	EXCELSIORSS-PANOCH1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7-1	DCTL	39.08	50.2	64.15	N/A	N/A	N/A	21.75	106.55	50.33	111.1	104.13	N/A	64.16	Generation re-dispatch
	PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	26.71	41.81	N/A	N/A	N/A	<100	121.74	27.07	125.4	<100	N/A	38.3	Generation re-dispatch
	P1-2:A14:128:_SCHINDLER-COALINGA #2 70KV [9150] & GATES D 230/70KV TB 5	P6	N1/N1	130.42	130.46	157.96	N/A	N/A	N/A	<100	<100	134.65	<100	<100	N/A	158.11	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:128:_SCHINDLER-COALINGA #2 70KV [9150]	P6	N1/N1	126.6	126.15	154.69	N/A	N/A	N/A	<100	<100	130.86	<100	<100	N/A	154.39	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:132:_COALINGA #1-SAN MIGUEL 70KV [8580]	P6	N1/N1	<100	111.03	141.61	N/A	N/A	N/A	<100	<100	112.5	<100	<100	N/A	141.83	System reconfiguration
	GATES D 230KV - SECTION 2D & 1D	P2-4	Bus/Breaker	N/A	98.4	112.85	N/A	N/A	N/A	N/A	N/A	101.57	35.49	N/A	N/A	113.21	System reconfiguration



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Five Points-Huron-Gates 70 kV Line (Five points-Calflax)	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	100.05	96.09	111.97	N/A	N/A	N/A	29.87	45.56	100.38	19.01	20.43	N/A	112.74	Install Redundant protection
	WESTLND5 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	108.23	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	108.69	System reconfiguration
	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	91.11	92.04	108.32	N/A	N/A	N/A	32.27	56.55	94.92	28.71	24.16	N/A	108.62	System reconfiguration
	SUNCTY D 12.00KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	105.35	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	107.39	System reconfiguration
	PANOCHÉ-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7-1	DCTL	73.81	85.46	107.11	N/A	N/A	N/A	43.39	168.82	86.46	177.54	154.58	N/A	107.16	Monitor future forecast
	Q1032G3 0.55KV GEN UNIT 3 & GATES D 230/70KV TB 5	P3	G1/N1	<100	<100	105.4	N/A	N/A	N/A	<100	<100	<100	<100	<100	N/A	105.56	Sensitivity only
	GATES D 230/70KV TB 5	P1-3	N-1	88.72	88	104.77	N/A	N/A	N/A	33.28	46.5	90.48	19.12	20.56	N/A	105.02	Sensitivity only
	EXCELSIORSS 115KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	54.55	63.37	82.4	N/A	N/A	N/A	25.67	90.42	64.04	100.42	75.52	N/A	82.44	Sensitivity only
	EXCELSIORSS-PANOCHÉ1 115KV [3250] & EXCELSIORSS-PANOCHÉ2 115KV [3231]	P7-1	DCTL	54.18	63.67	81.53	N/A	N/A	N/A	26.58	149.05	64.3	158.93	139.36	N/A	81.58	Generation re-dispatch
	PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2-4	Bus/Breaker	<100	31.28	52.77	N/A	N/A	N/A	<100	168.29	32.23	176.95	<100	N/A	48.28	Generation re-dispatch
	MUSTANGSS-GATES #1 230KV [0] & MUSTANGSS-GATES #2 230KV [0]	P7-1	DCTL	19.12	5.36	9.99	N/A	N/A	N/A	45.95	90.16	2.61	103.18	70.36	N/A	10.47	Sensitivity only
	MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	19.08	5.34	9.98	N/A	N/A	N/A	45.75	89.81	2.58	103.17	69.72	N/A	10.46	Sensitivity only
Gates-Coalinga #1 70 kV Line	GATES D 230/70KV TB 5 & SCHINDLR 115/12.47KV TB 2	P6	N1/N1	Diverge	Diverge	Diverge	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	Diverge	System Reconfiguration
	SCHINDLR 115/12.47KV TB 2 & GATES D 230/70KV TB 5	P6	N1/N1	<100	Diverge	Diverge	N/A	N/A	N/A	<100	<100	Diverge	<100	<100	N/A	Diverge	System Reconfiguration
Coalinga #1-San Miguel 70 kV Line	GATES D 230/70KV TB 5 & SCHINDLR 115/12.47KV TB 2	P6	N1/N1	Diverge	Diverge	Diverge	N/A	N/A	N/A	<100	200.84	Diverge	165.9	144.96	N/A	Diverge	System reconfiguration
	SCHINDLR 115/12.47KV TB 2 & GATES D 230/70KV TB 5	P6	N1/N1	Diverge	Diverge	Diverge	N/A	N/A	N/A	<100	234.4	Diverge	165.9	144.97	N/A	Diverge	System reconfiguration
	GATES D 230/70KV TB 5 & P1-2:A14:129:_SCHLNDLR-FIVEPOINTSSS #1 70KV [0]	P6	N1/N1	<100	105.89	152.45	N/A	N/A	N/A	<100	<100	103.34	<100	<100	N/A	152.31	System reconfiguration
GWF-Kingsburg 115kV Line (Jacksson- Contandina)	GATES-GREGG 230KV [4700] & P1-2:A14:137:_CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	140.92	<100	135.97	<100	N/A	<100	Generation re-dispatch
	GATES-GREGG 230KV [4700] & P1-2:A14:138:_MC CALL-CHSR09SWSTA #1 230KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	105.84	<100	N/A	<100	sensitivity only
	HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7-1	DCTL	<100	87.07	85.13	N/A	N/A	N/A	<100	100.59	89.24	126.61	<100	N/A	79.52	Generation re-dispatch
Kingsburg-Waukena 115kV line (Jacksson-Waukena)	KINGSBURG-CORCORAN #1 115KV [2040] MOAS OPENED ON Q529TP_CORCORAN & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.65	<100	116.11	<100	N/A	<100	Generation re-dispatch
	P1-2:A14:117:_CORCORAN-ANGIOLA 70KV [8600] & P1-2:A14:146:_JACKSONSWSTA-Q529TP #1 115KV [0] MOAS OPENED ON JACKSONSWSTA_Q529TP	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.45	<100	N/A	<100	sensitivity only
	P1-2:A14:146:_JACKSONSWSTA-Q529TP #1 115KV [0] MOAS OPENED ON JACKSONSWSTA_Q529TP & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.3	<100	115.94	<100	N/A	<100	Generation re-dispatch



Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)								Loading % (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
Jacksson-Corcoran 115kV line(Jacksson-529T)	CORCORAN 115/70KV TB 1 & P1-2:A14:142:_JACKSONSWSTA-WAUKENA_SS #1 115KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.07	<100	N/A	<100	sensitivity only
	P1-2:A14:117:_CORCORAN-ANGIOLA 70KV [8600] & P1-2:A14:142:_JACKSONSWSTA-WAUKENA_SS #1 115KV [0]	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	<100	<100	100.04	<100	N/A	<100	sensitivity only
	P1-2:A14:142:_JACKSONSWSTA-WAUKENA_SS #1 115KV [0] & Base Case	P6	N1/N1	<100	<100	<100	N/A	N/A	N/A	<100	100.39	<100	115.62	<100	N/A	<100	Generation re-dispatch

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
MARIPOS2 70 kV	Base Case	P0	Base Case	0.9418	0.9823	0.8933	N/A	N/A	N/A	0.9886	1.0464	0.9499	1.0462	0.9428	N/A	0.8932	System Reconfiguration
MRCDFLLS 70 kV		P0	Base Case	0.9927	1.0252	0.9471	N/A	N/A	N/A	1.0061	1.0344	0.9951	1.0314	0.9765	N/A	0.9467	System Reconfiguration
BER VLLY 70 kV		P0	Base Case	0.9722	1.0122	0.9244	N/A	N/A	N/A	0.9922	1.0319	0.9811	1.0299	0.964	N/A	0.9242	System Reconfiguration
INDN FLT 70 kV		P0	Base Case	0.9617	1.0022	0.9097	N/A	N/A	N/A	0.9857	1.0309	0.9705	1.0293	0.9556	N/A	0.9096	System Reconfiguration
YOSEMITE 70 kV		P0	Base Case	0.9598	1.0003	0.9062	N/A	N/A	N/A	0.9825	1.0289	0.9685	1.0273	0.9536	N/A	0.9061	System Reconfiguration
TOMATAK 70 kV		P0	Base Case	0.8963	0.8913	0.8803	N/A	N/A	N/A	0.9522	1.0455	0.8888	1.0473	0.8986	N/A	0.8803	System Reconfiguration
DUNLAP 70 kV		P0	Base Case	1.0045	1.0154	0.9359	N/A	N/A	N/A	1.0545	1.0484	1.0129	1.0527	1.0314	N/A	0.9357	System Reconfiguration
SANDCRK 70 kV		P0	Base Case	1.0095	1.0197	0.9433	N/A	N/A	N/A	1.0558	1.0489	1.0174	1.0531	1.0356	N/A	0.9431	System Reconfiguration
STONCRRL 70 kV		P0	Base Case	1.0051	1.0136	0.9454	N/A	N/A	N/A	1.0527	1.0437	1.0113	1.0476	1.0296	N/A	0.9452	System Reconfiguration
CAMDEN 70 kV		P0	Base Case	0.9731	0.9407	0.9284	N/A	N/A	N/A	1.0122	1.0384	0.939	1.044	1.0035	N/A	0.9283	System Reconfiguration
CHWCHLLA 115 kV	LE GRAND-CHOWCHILLA 115KV [2110]	P1-2	N-1	0.9994	0.9832	0.9112	N/A	N/A	N/A	1.0336	1.0821	0.9812	1.089	1.0369	N/A	0.9112	Continue to Monitor future forecast
CANAL 70 kV	LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P1-2	N-1	0.9403	0.9523	0.8826	N/A	N/A	N/A	1.0343	1.061	0.945	1.0666	0.9879	N/A	0.8828	System Reconfiguration
DUNLAP 70 kV	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P1-2	N-1	0.9737	0.9908	0.8787	N/A	N/A	N/A	1.0468	1.056	0.9875	1.0612	1.0147	N/A	0.8786	Continue to Monitor future forecast
SANDCRK 70 kV		P1-2	N-1	0.9788	0.9953	0.8867	N/A	N/A	N/A	1.0482	1.0566	0.9921	1.0616	1.019	N/A	0.8865	Continue to Monitor future forecast
STONCRRL 70 kV		P1-2	N-1	0.9743	0.989	0.889	N/A	N/A	N/A	1.045	1.0514	0.9859	1.056	1.0129	N/A	0.8888	Continue to Monitor future forecast
DINUBA 70 kV		P1-2	N-1	0.9817	0.9999	0.8986	N/A	N/A	N/A	1.0481	1.059	0.997	1.0638	1.021	N/A	0.8984	Continue to Monitor future forecast
INDN FLT 70 kV	MERCED FALLS-EXCHEQUER 70KV [8990]	P1-2	N-1	0.9404	0.988	0.8877	N/A	N/A	N/A	0.9532	1.0245	0.9508	1.0253	0.9336	N/A	0.8872	Continue to Monitor future forecast
YOSEMITE 70 kV	MERCED FALLS-EXCHEQUER 70KV [8990]	P1-2	N-1	0.9383	0.9861	0.8842	N/A	N/A	N/A	0.9499	1.0226	0.9489	1.0233	0.9316	N/A	0.8836	Continue to Monitor future forecast
FIREBAGH 70 kV	ORO LOMA-MENDOTA 70KV [9030]	P1-2	N-1	>0.9	>0.9	>0.9	N/A	N/A	N/A	0.8988	1.0302	>0.9	1.0313	>0.9	N/A	>0.9	Under Review
TOMATAK 70 kV		P1-2	N-1	0.8964	0.8915	0.8807	N/A	N/A	N/A	0.8988	1.0302	0.8891	1.0313	0.8987	N/A	0.8807	System Reconfiguration
ORO LOMA 70 kV	PANOCHE-ORO LOMA 115KV [3240]	P1-2	N-1	0.9524	0.8856	0.8795	N/A	N/A	N/A	1.0138	1.0538	0.8673	1.0599	1.0255	N/A	0.8792	Continue to Monitor future forecast
SNTA RTA 70 kV		P1-2	N-1	0.9372	0.8687	0.8622	N/A	N/A	N/A	1.0181	1.0627	0.8497	1.0705	1.0258	N/A	0.8618	Continue to Monitor future forecast
DOS PALS 70 kV		P1-2	N-1	0.9419	0.8738	0.8674	N/A	N/A	N/A	1.0155	1.0588	0.855	1.0658	1.0235	N/A	0.867	Continue to Monitor future forecast
FIREBAGH 70 kV		P1-2	N-1	0.9039	0.8326	0.8249	N/A	N/A	N/A	0.9477	1.0487	0.812	1.0506	0.9994	N/A	0.8245	Continue to Monitor future forecast
DUNLAP 70 kV	REEDLEY-DINUBA #1 70KV [9050]	P1-2	N-1	0.9805	0.9958	0.8888	N/A	N/A	N/A	1.0502	1.0504	0.9924	1.0552	1.0214	N/A	0.8885	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
SANDCRK 70 kV		P1-2	N-1	0.9856	1.0002	0.8966	N/A	N/A	N/A	1.0516	1.0509	0.997	1.0556	1.0256	N/A	0.8964	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
STONCRRL 70 kV		P1-2	N-1	0.9779	0.9918	0.8921	N/A	N/A	N/A	1.0477	1.0463	0.9885	1.0507	1.018	N/A	0.8919	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
DINUBA 70 kV		P1-2	N-1	0.9487	0.9709	0.8443	N/A	N/A	N/A	1.0399	1.0597	0.9669	1.0674	1.0064	N/A	0.8441	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
STONCRRL 70 kV	REEDLEY-OROSI 70KV [9060]	P1-2	N-1	0.9466	0.9559	0.8778	N/A	N/A	N/A	1.0346	1.0398	0.9525	1.0466	0.9906	N/A	0.8776	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
OROSI 70 kV		P1-2	N-1	0.9547	0.9653	0.8887	N/A	N/A	N/A	1.0383	1.0428	0.9622	1.0494	0.9975	N/A	0.8885	Project: Reedley 70 kV Reinforcement (Dinuba Battery Energy Storage) In-service date: 05/22 Short term: Action plan
AVENAL 70 kV	GATES D 230/70KV TB 5	P1-3	N-1	0.9705	0.9558	0.8902	N/A	N/A	N/A	1.0114	1.0682	0.9533	1.0663	1.0418	N/A	0.8902	Continue to Monitor future forecast
KETTLEMN 70 kV		P1-3	N-1	0.9629	0.9499	0.8834	N/A	N/A	N/A	1.0124	1.0624	0.9474	1.0619	1.0313	N/A	0.8834	Continue to Monitor future forecast
CHEVPLIN 70 kV		P1-3	N-1	0.9641	0.9508	0.8847	N/A	N/A	N/A	1.0117	1.0604	0.9483	1.06	1.032	N/A	0.8847	Continue to Monitor future forecast
CALFLAX 70 kV		P1-3	N-1	0.979	0.9772	0.8986	N/A	N/A	N/A	1.0156	1.0428	0.9747	1.0434	1.0304	N/A	0.8985	Continue to Monitor future forecast
PLSNTVLY 70 kV		P1-3	N-1	0.9776	0.9585	0.9018	N/A	N/A	N/A	1.014	1.03	0.9562	1.0317	1.0212	N/A	0.9017	Continue to Monitor future forecast
COLNGA 2 70 kV		P1-3	N-1	0.9627	0.9408	0.8816	N/A	N/A	N/A	1.0155	1.0357	0.9384	1.0384	1.0159	N/A	0.8815	Continue to Monitor future forecast
TORNADO 70 kV		P1-3	N-1	0.9598	0.938	0.8801	N/A	N/A	N/A	1.0136	1.0334	0.9357	1.0371	1.0124	N/A	0.88	Continue to Monitor future forecast
COLNGA 1 70 kV		P1-3	N-1	0.9621	0.9393	0.8801	N/A	N/A	N/A	1.0135	1.037	0.9373	1.0428	1.0126	N/A	0.8801	Continue to Monitor future forecast
PCHCO PP 70 kV	LOSBANOS 230/70KV TB 3	P1-3	N-1	0.9066	0.904	0.9505	N/A	N/A	N/A	0.9491	0.9732	0.896	0.9811	0.9137	N/A	0.9507	Sensitivity only
DUNLAP 70 kV	MCCALL-REEDLEY 115KV [2320] (MC CALL-WAHTOKE)	P2-1	Line Section w/o Fault	0.9737	0.9908	0.8787	N/A	N/A	N/A	1.0468	1.056	0.9875	1.0612	1.0147	N/A	0.8786	Continue to Monitor future forecast
SANDCRK 70 kV		P2-1	Line Section w/o Fault	0.9788	0.9953	0.8867	N/A	N/A	N/A	1.0482	1.0566	0.9921	1.0616	1.019	N/A	0.8865	Continue to Monitor future forecast
STONCRRL 70 kV		P2-1	Line Section w/o Fault	0.9743	0.989	0.889	N/A	N/A	N/A	1.045	1.0514	0.9859	1.056	1.0129	N/A	0.8888	Continue to Monitor future forecast
DINUBA 70 kV		P2-1	Line Section w/o Fault	0.9817	0.9999	0.8986	N/A	N/A	N/A	1.0481	1.059	0.997	1.0638	1.021	N/A	0.8984	Continue to Monitor future forecast
ORO LOMA 70 kV	PANOCHÉ-ORO LOMA 115KV [3240] (DFSTP-ORO LOMA)	P2-1	Line Section w/o Fault	0.9523	0.8855	0.8795	N/A	N/A	N/A	1.0139	1.0539	0.8672	1.0599	1.0255	N/A	0.8792	Continue to Monitor future forecast
SNTA RTA 70 kV		P2-1	Line Section w/o Fault	0.9371	0.8686	0.8622	N/A	N/A	N/A	1.0182	1.0627	0.8495	1.0705	1.0258	N/A	0.8618	Continue to Monitor future forecast
DOS PALS 70 kV		P2-1	Line Section w/o Fault	0.9418	0.8737	0.8674	N/A	N/A	N/A	1.0156	1.0588	0.8549	1.0658	1.0235	N/A	0.867	Continue to Monitor future forecast
FIREBAGH 70 kV		P2-1	Line Section w/o Fault	0.9038	0.8326	0.8248	N/A	N/A	N/A	0.9479	1.0487	0.8118	1.0506	0.9994	N/A	0.8245	Continue to Monitor future forecast
DFS 115 kV	PANOCHÉ-ORO LOMA 115KV [3240] (HAMMONDS-DFSTP)	P2-1	Line Section w/o Fault	0.9247	0.8501	0.8989	N/A	N/A	N/A	0.9828	1.0559	0.8315	1.0618	1.0086	N/A	0.8985	System Reconfiguration
ORO LOMA 70 kV		P2-1	Line Section w/o Fault	0.945	0.8765	0.8767	N/A	N/A	N/A	1.0132	1.0515	0.8572	1.0576	1.0215	N/A	0.8764	System Reconfiguration
SNTA RTA 70 kV		P2-1	Line Section w/o Fault	0.9297	0.8594	0.8593	N/A	N/A	N/A	1.0177	1.0609	0.8393	1.0687	1.0219	N/A	0.8589	System Reconfiguration
DOS PALS 70 kV		P2-1	Line Section w/o Fault	0.9344	0.8646	0.8645	N/A	N/A	N/A	1.015	1.0567	0.8447	1.0637	1.0195	N/A	0.8642	System Reconfiguration
FIREBAGH 70 kV		P2-1	Line Section w/o Fault	0.896	0.8229	0.8218	N/A	N/A	N/A	0.9477	1.0478	0.801	1.0498	0.9954	N/A	0.8215	System Reconfiguration

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
HAMMONDS 115 kV	PANOCHE-ORO LOMA 115KV [3240] (PANOCHEJ-HAMMONDS)	P2-1	Line Section w/o Fault	0.8597	0.7666	0.869	N/A	N/A	N/A	0.9835	1.0605	0.7368	1.0669	0.9715	N/A	0.8686	System Reconfiguration
DFS 115 kV		P2-1	Line Section w/o Fault	0.8667	0.7731	0.8708	N/A	N/A	N/A	0.9833	1.0596	0.7436	1.0659	0.9767	N/A	0.8705	System Reconfiguration
EL NIDO 115 kV		P2-1	Line Section w/o Fault	0.9545	0.913	0.949	N/A	N/A	N/A	1.0151	1.0519	0.8919	1.0568	1.0095	N/A	0.9487	System Reconfiguration
ORO LOMA 70 kV		P2-1	Line Section w/o Fault	0.8905	0.8011	0.8504	N/A	N/A	N/A	1.0134	1.0542	0.7705	1.0606	0.9929	N/A	0.85	System Reconfiguration
SNTA RTA 70 kV		P2-1	Line Section w/o Fault	0.8741	0.7823	0.8323	N/A	N/A	N/A	1.0179	1.0629	0.7505	1.0709	0.9932	N/A	0.832	System Reconfiguration
DOS PALS 70 kV		P2-1	Line Section w/o Fault	0.8792	0.788	0.8377	N/A	N/A	N/A	1.0151	1.0591	0.7566	1.0664	0.9908	N/A	0.8374	System Reconfiguration
FIREBAGH 70 kV		P2-1	Line Section w/o Fault	0.8379	0.7411	0.7934	N/A	N/A	N/A	0.9479	1.0487	0.7065	1.0506	0.9659	N/A	0.793	System Reconfiguration
HAMMONDS 115 kV	PANOCHE-ORO LOMA 115KV [3240] (PANOCHEJ-PANOCHE2)	P2-1	Line Section w/o Fault	0.8093	0.6956	0.8402	N/A	N/A	N/A	0.9784	1.0543	0.6404	1.0609	0.9469	N/A	0.8398	System Reconfiguration
LUIS_#3 115 kV		P2-1	Line Section w/o Fault	0.8032	0.6898	0.837	N/A	N/A	N/A	0.9769	1.0519	0.634	1.0586	0.942	N/A	0.8366	System Reconfiguration
DFS 115 kV		P2-1	Line Section w/o Fault	0.821	0.7058	0.8433	N/A	N/A	N/A	0.9792	1.0544	0.6516	1.061	0.9557	N/A	0.8429	System Reconfiguration
LUIS_#5 115 kV		P2-1	Line Section w/o Fault	0.8035	0.6902	0.8372	N/A	N/A	N/A	0.9769	1.052	0.6344	1.0587	0.9423	N/A	0.8368	System Reconfiguration
OXFORD 115 kV		P2-1	Line Section w/o Fault	0.8043	0.691	0.8379	N/A	N/A	N/A	0.9769	1.052	0.6353	1.0587	0.9429	N/A	0.8375	System Reconfiguration
EL NIDO 115 kV		P2-1	Line Section w/o Fault	0.9338	0.8823	0.9367	N/A	N/A	N/A	1.0137	1.0501	0.849	1.0552	1.0025	N/A	0.9364	System Reconfiguration
WSTLD1RA 115 kV		P2-1	Line Section w/o Fault	0.8046	0.6913	0.838	N/A	N/A	N/A	0.9772	1.0524	0.6357	1.0591	0.9432	N/A	0.8376	System Reconfiguration
ORO LOMA 70 kV		P2-1	Line Section w/o Fault	0.8468	0.7337	0.8242	N/A	N/A	N/A	1.0098	1.0501	0.7034	1.0568	0.974	N/A	0.8238	System Reconfiguration
SNTA RTA 70 kV		P2-1	Line Section w/o Fault	0.8296	0.7129	0.8055	N/A	N/A	N/A	1.0151	1.06	0.6811	1.0683	0.9744	N/A	0.8051	System Reconfiguration
DOS PALS 70 kV		P2-1	Line Section w/o Fault	0.8349	0.7191	0.8111	N/A	N/A	N/A	1.0119	1.0556	0.6878	1.0631	0.9719	N/A	0.8107	System Reconfiguration
FIREBAGH 70 kV		P2-1	Line Section w/o Fault	0.7909	0.6664	0.7649	N/A	N/A	N/A	0.9467	1.0476	0.6304	1.0497	0.9464	N/A	0.7645	System Reconfiguration

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
AVENAL 70 kV	GATES D 230KV SECTION 2D	P2-2	Bus/Breaker	0.9695	0.956	0.8897	N/A	N/A	N/A	1.0102	1.0685	0.9533	1.0666	1.0416	N/A	0.8896	Continue to Monitor future forecast
KETTLEMN 70 kV		P2-2	Bus/Breaker	0.9619	0.9501	0.8829	N/A	N/A	N/A	1.0111	1.0628	0.9474	1.0623	1.0311	N/A	0.8828	Continue to Monitor future forecast
CHEVPLIN 70 kV		P2-2	Bus/Breaker	0.9631	0.951	0.8842	N/A	N/A	N/A	1.0105	1.0608	0.9483	1.0603	1.0318	N/A	0.8841	Continue to Monitor future forecast
CALFLAX 70 kV		P2-2	Bus/Breaker	0.9776	0.9764	0.8971	N/A	N/A	N/A	1.0145	1.0436	0.9736	1.0443	1.0306	N/A	0.8969	Continue to Monitor future forecast
COLNGA 2 70 kV		P2-2	Bus/Breaker	0.9614	0.9406	0.8808	N/A	N/A	N/A	1.0146	1.0371	0.938	1.0398	1.0159	N/A	0.8807	Continue to Monitor future forecast
TORNADO 70 kV		P2-2	Bus/Breaker	0.9584	0.938	0.8794	N/A	N/A	N/A	1.0126	1.0357	0.9354	1.0393	1.0126	N/A	0.8793	Continue to Monitor future forecast
COLNGA 1 70 kV		P2-2	Bus/Breaker	0.9612	0.9401	0.8804	N/A	N/A	N/A	1.0122	1.0391	0.9379	1.0445	1.0122	N/A	0.8803	Continue to Monitor future forecast
PCHCO PP 70 kV	LOSBANOS 230KV SECTION 1D	P2-2	Bus/Breaker	0.8988	0.8963	0.9501	N/A	N/A	N/A	0.9365	0.9664	0.8839	0.9738	0.8913	N/A	0.95	Under Review
DUNLAP 70 kV	MC CALL 230KV SECTION 1D	P2-2	Bus/Breaker	0.9818	0.9922	0.8957	N/A	N/A	N/A	1.0421	1.0454	0.9885	1.053	1.0116	N/A	0.8939	Continue to Monitor future forecast
CAMDEN 70 kV		P2-2	Bus/Breaker	0.9532	0.9197	0.8972	N/A	N/A	N/A	0.9985	1.0356	0.917	1.042	0.9852	N/A	0.8959	Continue to Monitor future forecast
HAMMONDS 115 kV	PANOCHÉ2 115KV SECTION 2D	P2-2	Bus/Breaker	0.8091	0.6955	0.8403	N/A	N/A	N/A	0.9776	1.0538	0.6402	1.0605	0.9469	N/A	0.8399	System Reconfiguration
LUIS_#3 115 kV		P2-2	Bus/Breaker	0.803	0.6897	0.8371	N/A	N/A	N/A	0.9762	1.0514	0.6337	1.0581	0.942	N/A	0.8367	System Reconfiguration
DFS 115 kV		P2-2	Bus/Breaker	0.8209	0.7057	0.8434	N/A	N/A	N/A	0.9785	1.0539	0.6514	1.0605	0.9557	N/A	0.843	System Reconfiguration
LUIS_#5 115 kV		P2-2	Bus/Breaker	0.8034	0.6901	0.8373	N/A	N/A	N/A	0.9762	1.0515	0.6341	1.0582	0.9423	N/A	0.8369	System Reconfiguration
OXFORD 115 kV		P2-2	Bus/Breaker	0.8042	0.6909	0.838	N/A	N/A	N/A	0.9762	1.0515	0.6351	1.0582	0.9429	N/A	0.8376	System Reconfiguration
EL NIDO 115 kV		P2-2	Bus/Breaker	0.9337	0.8822	0.9368	N/A	N/A	N/A	1.0134	1.0498	0.8488	1.0549	1.0025	N/A	0.9364	System Reconfiguration
WSTLD1RA 115 kV		P2-2	Bus/Breaker	0.8045	0.6912	0.838	N/A	N/A	N/A	0.9764	1.0519	0.6354	1.0586	0.9431	N/A	0.8376	System Reconfiguration
ORO LOMA 70 kV		P2-2	Bus/Breaker	0.8467	0.7335	0.8242	N/A	N/A	N/A	1.0089	1.0496	0.7031	1.0563	0.974	N/A	0.8238	System Reconfiguration
SNTA RTA 70 kV		P2-2	Bus/Breaker	0.8294	0.7128	0.8056	N/A	N/A	N/A	1.0144	1.0596	0.6808	1.0679	0.9744	N/A	0.8052	System Reconfiguration
DOS PALS 70 kV		P2-2	Bus/Breaker	0.8348	0.719	0.8112	N/A	N/A	N/A	1.0111	1.0551	0.6875	1.0627	0.9719	N/A	0.8108	System Reconfiguration
FIREBAGH 70 kV		P2-2	Bus/Breaker	0.7907	0.6663	0.765	N/A	N/A	N/A	0.9432	1.0474	0.6302	1.0491	0.9464	N/A	0.7645	System Reconfiguration
SJNO2 70 kV	GREGG 230KV - MIDDLE BREAKER BAY 1	P2-3	Bus/Breaker	0.9863	0.9626	>0.9	N/A	N/A	N/A	1.0218	1.0416	0.896	1.0459	1.008	N/A	>0.9	Sensitivity only
SJNO3 70 kV	GREGG 230KV - MIDDLE BREAKER BAY 1	P2-3	Bus/Breaker	0.9829	0.9592	>0.9	N/A	N/A	N/A	1.0191	1.0436	0.8921	1.0482	1.0021	N/A	>0.9	Sensitivity only
AUBERRY 70 kV	GREGG 230KV - MIDDLE BREAKER BAY 1	P2-3	Bus/Breaker	0.9891	0.9633	>0.9	N/A	N/A	N/A	1.0242	1.0412	0.8968	1.0455	1.0153	N/A	>0.9	Sensitivity only
DUNLAP 70 kV	MC CALL 115KV - MIDDLE BREAKER BAY 2	P2-3	Bus/Breaker	0.9701	0.9876	0.8714	N/A	N/A	N/A	1.0446	1.0574	0.9842	1.0627	1.0122	N/A	0.8712	Continue to Monitor future forecast
SANDCRK 70 kV		P2-3	Bus/Breaker	0.9753	0.9921	0.8795	N/A	N/A	N/A	1.046	1.0579	0.9888	1.0631	1.0165	N/A	0.8792	Continue to Monitor future forecast
STONCRL 70 kV		P2-3	Bus/Breaker	0.9708	0.9858	0.8818	N/A	N/A	N/A	1.0428	1.0528	0.9826	1.0576	1.0104	N/A	0.8815	Continue to Monitor future forecast
DINUBA 70 kV		P2-3	Bus/Breaker	0.9782	0.9968	0.8915	N/A	N/A	N/A	1.0459	1.0604	0.9937	1.0654	1.0185	N/A	0.8913	Continue to Monitor future forecast
OROSI 70 kV		P2-3	Bus/Breaker	0.9805	0.9967	0.8949	N/A	N/A	N/A	1.0471	1.056	0.9936	1.0605	1.0184	N/A	0.8947	Continue to Monitor future forecast
ORO LOMA 70 kV	ORO LOMA 115KV - MIDDLE BREAKER BAY 4	P2-3	Bus/Breaker	0.9264	0.8608	0.8965	N/A	N/A	N/A	1.0024	1.0446	0.8428	1.0508	0.9984	N/A	0.8962	System Reconfiguration
SNTA RTA 70 kV		P2-3	Bus/Breaker	0.9108	0.8434	0.8795	N/A	N/A	N/A	1.0087	1.0555	0.8246	1.0634	0.9988	N/A	0.8792	System Reconfiguration
DOS PALS 70 kV		P2-3	Bus/Breaker	0.9156	0.8487	0.8847	N/A	N/A	N/A	1.0052	1.0506	0.8301	1.0577	0.9964	N/A	0.8843	System Reconfiguration
FIREBAGH 70 kV		P2-3	Bus/Breaker	0.8763	0.806	0.8431	N/A	N/A	N/A	0.9429	1.0453	0.7855	1.0473	0.9716	N/A	0.8428	System Reconfiguration
HAMMONDS 115 kV	PANOCHÉ2 - 2D 115KV & PANOCHÉ2-EXCELSIORSS LINE	P2-3	Bus/Breaker	0.8092	0.6957	0.8404	N/A	N/A	N/A	0.9775	1.0538	0.6397	1.0605	0.9469	N/A	0.8399	System Reconfiguration
LUIS_#3 115 kV		P2-3	Bus/Breaker	0.8031	0.6899	0.8372	N/A	N/A	N/A	0.9761	1.0514	0.6332	1.0581	0.942	N/A	0.8367	System Reconfiguration
DFS 115 kV		P2-3	Bus/Breaker	0.8209	0.7058	0.8435	N/A	N/A	N/A	0.9784	1.0539	0.6509	1.0605	0.9557	N/A	0.8431	System Reconfiguration
LUIS_#5 115 kV		P2-3	Bus/Breaker	0.8035	0.6903	0.8374	N/A	N/A	N/A	0.9761	1.0515	0.6336	1.0582	0.9423	N/A	0.8369	System Reconfiguration
OXFORD 115 kV		P2-3	Bus/Breaker	0.8042	0.6911	0.8381	N/A	N/A	N/A	0.9761	1.0515	0.6346	1.0582	0.9429	N/A	0.8376	System Reconfiguration
EL NIDO 115 kV		P2-3	Bus/Breaker	0.9337	0.8823	0.9368	N/A	N/A	N/A	1.0134	1.0498	0.8485	1.0549	1.0025	N/A	0.9365	System Reconfiguration
WSTLD1RA 115 kV		P2-3	Bus/Breaker	0.8045	0.6914	0.8381	N/A	N/A	N/A	0.9763	1.0519	0.6349	1.0586	0.9431	N/A	0.8377	System Reconfiguration
ORO LOMA 70 kV		P2-3	Bus/Breaker	0.8468	0.7337	0.8243	N/A	N/A	N/A	1.0089	1.0496	0.7025	1.0563	0.974	N/A	0.8239	System Reconfiguration
SNTA RTA 70 kV		P2-3	Bus/Breaker	0.8295	0.713	0.8057	N/A	N/A	N/A	1.0144	1.0596	0.6802	1.0679	0.9744	N/A	0.8053	System Reconfiguration

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
DOS PALS 70 kV	PANOCH2 - 2D 115KV & PANOCH2-ORO LOMA LINE	P2-3	Bus/Breaker	0.8348	0.7192	0.8112	N/A	N/A	N/A	1.0111	1.0551	0.687	1.0627	0.9719	N/A	0.8108	System Reconfiguration
FIREBAGH 70 kV		P2-3	Bus/Breaker	0.7908	0.6665	0.765	N/A	N/A	N/A	0.943	1.0474	0.6296	1.0491	0.9464	N/A	0.7646	System Reconfiguration
ORO LOMA 70 kV		P2-3	Bus/Breaker	0.9523	0.8855	0.8796	N/A	N/A	N/A	1.0129	1.0533	0.8668	1.0594	1.0254	N/A	0.8792	System Reconfiguration
SNTA RTA 70 kV		P2-3	Bus/Breaker	0.9371	0.8686	0.8622	N/A	N/A	N/A	1.0174	1.0622	0.8491	1.0701	1.0258	N/A	0.8618	System Reconfiguration
DOS PALS 70 kV		P2-3	Bus/Breaker	0.9418	0.8737	0.8674	N/A	N/A	N/A	1.0147	1.0583	0.8545	1.0654	1.0235	N/A	0.8671	System Reconfiguration
FIREBAGH 70 kV		P2-3	Bus/Breaker	0.9038	0.8325	0.8249	N/A	N/A	N/A	0.9442	1.0485	0.8114	1.05	0.9994	N/A	0.8245	System Reconfiguration
DUNLAP 70 kV	REEDLEY 115KV - RING R5 & R4	P2-3	Bus/Breaker	0.9823	0.9998	0.889	N/A	N/A	N/A	1.0455	1.0502	0.9971	1.0548	1.0174	N/A	0.8889	Continue to Monitor future forecast
SANDCRK 70 kV		P2-3	Bus/Breaker	0.9873	1.0042	0.8969	N/A	N/A	N/A	1.0469	1.0507	1.0016	1.0552	1.0216	N/A	0.8967	Continue to Monitor future forecast
STONCRRL 70 kV		P2-3	Bus/Breaker	0.9829	0.998	0.8992	N/A	N/A	N/A	1.0437	1.0456	0.9956	1.0497	1.0155	N/A	0.899	Continue to Monitor future forecast
DUNLAP 70 kV	REEDLEY 115KV - RING R5 & R6	P2-3	Bus/Breaker	0.9887	1.0103	0.8767	N/A	N/A	N/A	1.0559	1.061	1.0077	1.0656	1.0289	N/A	0.8765	Continue to Monitor future forecast
SANDCRK 70 kV		P2-3	Bus/Breaker	0.9937	1.0147	0.8847	N/A	N/A	N/A	1.0572	1.0615	1.0122	1.066	1.0331	N/A	0.8845	Continue to Monitor future forecast
STONCRRL 70 kV		P2-3	Bus/Breaker	0.9892	1.0085	0.887	N/A	N/A	N/A	1.0541	1.0564	1.0061	1.0605	1.027	N/A	0.8868	Continue to Monitor future forecast
DINUBA 70 kV		P2-3	Bus/Breaker	0.9965	1.0192	0.8966	N/A	N/A	N/A	1.0572	1.0639	1.0169	1.0682	1.035	N/A	0.8964	Continue to Monitor future forecast
OROSI 70 kV		P2-3	Bus/Breaker	0.9988	1.0191	0.9	N/A	N/A	N/A	1.0583	1.0596	1.0168	1.0634	1.035	N/A	0.8998	Continue to Monitor future forecast
AVENAL 70 kV	GATES D 230KV - SECTION 2D & 1D	P2-4	Bus/Breaker	>0.9	0.9557	0.8904	N/A	N/A	N/A	>0.9	>0.9	0.9553	1.0659	>0.9	N/A	0.8902	Continue to Monitor future forecast
KETTLEMN 70 kV		P2-4	Bus/Breaker	>0.9	0.9498	0.8836	N/A	N/A	N/A	>0.9	>0.9	0.9494	1.0615	>0.9	N/A	0.8834	Continue to Monitor future forecast
CHEVPLIN 70 kV		P2-4	Bus/Breaker	>0.9	0.9507	0.8849	N/A	N/A	N/A	>0.9	>0.9	0.9503	1.0596	>0.9	N/A	0.8847	Continue to Monitor future forecast
CALFLAX 70 kV		P2-4	Bus/Breaker	>0.9	0.9747	0.8963	N/A	N/A	N/A	>0.9	>0.9	0.9745	1.0445	>0.9	N/A	0.8961	Continue to Monitor future forecast
COLNGA 2 70 kV		P2-4	Bus/Breaker	>0.9	0.9397	0.881	N/A	N/A	N/A	>0.9	>0.9	0.9395	1.0398	>0.9	N/A	0.8809	Continue to Monitor future forecast
TORNADO 70 kV		P2-4	Bus/Breaker	>0.9	0.9372	0.8799	N/A	N/A	N/A	>0.9	>0.9	0.9369	1.0396	>0.9	N/A	0.8798	Continue to Monitor future forecast
COLNGA 1 70 kV		P2-4	Bus/Breaker	>0.9	0.9406	0.8821	N/A	N/A	N/A	>0.9	>0.9	0.9406	1.0441	>0.9	N/A	0.882	Continue to Monitor future forecast
DUNLAP 70 kV	HERNDON 115KV - SECTION 1D & 2D	P2-4	Bus/Breaker	0.9969	1.0051	0.9	N/A	N/A	N/A	1.0599	1.0445	1.0013	1.0461	1.0295	N/A	0.9	Continue to Monitor future forecast
AIRWAYS 115 kV	HERNDON 230KV - SECTION 1E & 2E	P2-4	Bus/Breaker	0.9821	0.9837	0.8964	N/A	N/A	N/A	1.0444	1.0531	0.9798	1.0542	1.0173	N/A	0.8958	Continue to Monitor future forecast
SESWTF 115 kV		P2-4	Bus/Breaker	0.9832	0.9848	0.898	N/A	N/A	N/A	1.0448	1.052	0.981	1.053	1.018	N/A	0.8974	Continue to Monitor future forecast
BARTON 115 kV		P2-4	Bus/Breaker	0.9787	0.9818	0.8901	N/A	N/A	N/A	1.0442	1.0545	0.9777	1.0556	1.0153	N/A	0.8896	Continue to Monitor future forecast
MANCHSTR 115 kV		P2-4	Bus/Breaker	0.98	0.9805	0.8836	N/A	N/A	N/A	1.0478	1.0594	0.9759	1.0602	1.0201	N/A	0.8833	Continue to Monitor future forecast
PNEDLE 115 kV		P2-4	Bus/Breaker	0.9452	0.9491	0.8445	N/A	N/A	N/A	1.0411	1.0715	0.9433	1.0726	0.9967	N/A	0.8445	Continue to Monitor future forecast
WOODWARD 115 kV		P2-4	Bus/Breaker	0.9891	0.9874	0.8879	N/A	N/A	N/A	1.0466	1.0559	0.983	1.0573	1.0319	N/A	0.8876	Continue to Monitor future forecast
PNEDLE2 115 kV		P2-4	Bus/Breaker	0.9461	0.9501	0.8477	N/A	N/A	N/A	1.0414	1.0706	0.9443	1.0716	0.9969	N/A	0.8477	Continue to Monitor future forecast
CHLDHOSP 115 kV		P2-4	Bus/Breaker	0.98	0.9799	0.8819	N/A	N/A	N/A	1.0457	1.0574	0.9752	1.0585	1.0238	N/A	0.8817	Continue to Monitor future forecast
DUNLAP 70 kV		P2-4	Bus/Breaker	0.9853	0.9947	0.8699	N/A	N/A	N/A	1.0605	1.0501	0.9905	1.0528	1.0253	N/A	0.8691	Continue to Monitor future forecast
SANDCRK 70 kV		P2-4	Bus/Breaker	0.9903	0.9992	0.8779	N/A	N/A	N/A	1.0619	1.0507	0.9951	1.0532	1.0295	N/A	0.8772	Continue to Monitor future forecast
STONCRRL 70 kV		P2-4	Bus/Breaker	0.9859	0.9929	0.8803	N/A	N/A	N/A	1.0587	1.0455	0.9889	1.0477	1.0235	N/A	0.8795	Continue to Monitor future forecast
DINUBA 70 kV		P2-4	Bus/Breaker	0.9933	1.0038	0.89	N/A	N/A	N/A	1.0618	1.0532	0.9999	1.0555	1.0315	N/A	0.8893	Continue to Monitor future forecast
OROSI 70 kV		P2-4	Bus/Breaker	0.9955	1.0037	0.8934	N/A	N/A	N/A	1.0629	1.0487	0.9999	1.0506	1.0314	N/A	0.8927	Continue to Monitor future forecast
CAMDEN 70 kV		P2-4	Bus/Breaker	0.9598	0.9255	0.8868	N/A	N/A	N/A	1.0169	1.0364	0.9225	1.0398	0.9992	N/A	0.8864	Continue to Monitor future forecast
PCHCO PP 70 kV	LOSBANOS 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	>0.9	>0.9	>0.9	N/A	N/A	N/A	0.8533	1.0053	>0.9	1.0195	>0.9	N/A	us Disconnecte	Under Review
TVY VLLY 70 kV	MC CALL 230KV - SECTION 1D & 1E	P2-4	Bus/Breaker	>0.9	1.0115	0.8922	N/A	N/A	N/A	>0.9	>0.9	1.0065	1.0574	>0.9	N/A	0.8919	Continue to Monitor future forecast
DUNLAP 70 kV		P2-4	Bus/Breaker	>0.9	0.9775	0.8525	N/A	N/A	N/A	>0.9	>0.9	0.9718	1.0605	>0.9	N/A	0.8522	Continue to Monitor future forecast
SANDCRK 70 kV		P2-4	Bus/Breaker	>0.9	0.9821	0.8607	N/A	N/A	N/A	>0.9	>0.9	0.9765	1.0609	>0.9	N/A	0.8604	Continue to Monitor future forecast
STONCRRL 70 kV		P2-4	Bus/Breaker	>0.9	0.9757	0.8631	N/A	N/A	N/A	>0.9	>0.9	0.9702	1.0553	>0.9	N/A	0.8628	Continue to Monitor future forecast
DINUBA 70 kV		P2-4	Bus/Breaker	>0.9	0.9868	0.8731	N/A	N/A	N/A	>0.9	>0.9	0.9815	1.0632	>0.9	N/A	0.8728	Continue to Monitor future forecast
OROSI 70 kV		P2-4	Bus/Breaker	>0.9	0.9867	0.8765	N/A	N/A	N/A	>0.9	>0.9	0.9814	1.0583	>0.9	N/A	0.8762	Continue to Monitor future forecast

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
CAMDEN 70 kV		P2-4	Bus/Breaker	>0.9	0.9068	0.8638	N/A	N/A	N/A	>0.9	>0.9	0.9027	1.0505	>0.9	N/A	0.8637	Continue to Monitor future forecast
TVY VLLY 70 kV	MC CALL 230KV - SECTION 1D & 2D	P2-4	Bus/Breaker	0.9928	1.0122	0.9012	N/A	N/A	N/A	1.0414	1.0491	1.0081	1.053	1.0209	N/A	0.8987	Continue to Monitor future forecast
DUNLAP 70 kV		P2-4	Bus/Breaker	0.968	0.9783	0.8621	N/A	N/A	N/A	1.0366	1.0481	0.9735	1.055	1.0034	N/A	0.8594	Continue to Monitor future forecast
SANDCRK 70 kV		P2-4	Bus/Breaker	0.9732	0.9829	0.8702	N/A	N/A	N/A	1.038	1.0487	0.9782	1.0554	1.0078	N/A	0.8676	Continue to Monitor future forecast
STONCRRL 70 kV		P2-4	Bus/Breaker	0.9687	0.9765	0.8725	N/A	N/A	N/A	1.0348	1.0435	0.9719	1.0499	1.0016	N/A	0.87	Continue to Monitor future forecast
DINUBA 70 kV		P2-4	Bus/Breaker	0.9762	0.9876	0.8824	N/A	N/A	N/A	1.038	1.0511	0.9831	1.0578	1.0098	N/A	0.8798	Continue to Monitor future forecast
OROSI 70 kV		P2-4	Bus/Breaker	0.9784	0.9875	0.8858	N/A	N/A	N/A	1.0391	1.0467	0.9831	1.0528	1.0097	N/A	0.8832	Continue to Monitor future forecast
CAMDEN 70 kV		P2-4	Bus/Breaker	0.9419	0.9077	0.8714	N/A	N/A	N/A	0.993	1.0381	0.9043	1.0442	0.9775	N/A	0.8694	Continue to Monitor future forecast
DUNLAP 70 kV		P2-4	Bus/Breaker	0.9834	0.9943	0.8859	N/A	N/A	N/A	1.0537	1.0602	0.9895	1.0647	1.0216	N/A	0.8858	Continue to Monitor future forecast
SANDCRK 70 kV	MC CALL 230KV - SECTION 2E & 1E	P2-4	Bus/Breaker	0.9885	0.9988	0.8938	N/A	N/A	N/A	1.0551	1.0607	0.9941	1.065	1.0258	N/A	0.8937	Continue to Monitor future forecast
STONCRRL 70 kV		P2-4	Bus/Breaker	0.984	0.9925	0.8961	N/A	N/A	N/A	1.052	1.0556	0.9878	1.0595	1.0197	N/A	0.896	Continue to Monitor future forecast
CAMDEN 70 kV		P2-4	Bus/Breaker	0.955	0.9212	0.8892	N/A	N/A	N/A	1.0122	1.0501	0.9175	1.056	0.9945	N/A	0.8893	Continue to Monitor future forecast
HAMMONDS 115 kV		P2-4	Bus/Breaker	0.8088	0.6913	0.8381	N/A	N/A	N/A	0.9814	1.0422	0.6032	1.0479	0.9451	N/A	0.838	System Reconfiguration
LUIS_#3 115 kV	PANOCHE1 SECTION 1D & PANOCHE2 SECTION 2D 115KV	P2-4	Bus/Breaker	0.8027	0.6854	0.8349	N/A	N/A	N/A	0.98	1.0398	0.5963	1.0455	0.9402	N/A	0.8348	System Reconfiguration
DFS 115 kV		P2-4	Bus/Breaker	0.8206	0.7015	0.8412	N/A	N/A	N/A	0.9823	1.0424	0.6152	1.048	0.9539	N/A	0.8411	System Reconfiguration
LUIS_#5 115 kV		P2-4	Bus/Breaker	0.8031	0.6858	0.8351	N/A	N/A	N/A	0.98	1.0399	0.5968	1.0456	0.9404	N/A	0.835	System Reconfiguration
OXFORD 115 kV		P2-4	Bus/Breaker	0.8038	0.6866	0.8358	N/A	N/A	N/A	0.98	1.0399	0.5978	1.0456	0.941	N/A	0.8357	System Reconfiguration
EL NIDO 115 kV		P2-4	Bus/Breaker	0.9334	0.8794	0.9349	N/A	N/A	N/A	1.0148	1.0418	0.8272	1.0461	1.0008	N/A	0.9349	System Reconfiguration
WSTLD1RA 115 kV		P2-4	Bus/Breaker	0.8042	0.687	0.8358	N/A	N/A	N/A	0.9802	1.0403	0.5981	1.046	0.9413	N/A	0.8357	System Reconfiguration
ORO LOMA 70 kV		P2-4	Bus/Breaker	0.8464	0.7292	0.8221	N/A	N/A	N/A	1.0135	1.0371	0.7045	1.0427	0.9722	N/A	0.822	System Reconfiguration
SNTA RTA 70 kV		P2-4	Bus/Breaker	0.8291	0.7083	0.8034	N/A	N/A	N/A	1.0183	1.0479	0.6822	1.0549	0.9726	N/A	0.8033	System Reconfiguration
DOS PALS 70 kV		P2-4	Bus/Breaker	0.8345	0.7146	0.809	N/A	N/A	N/A	1.0152	1.0434	0.6889	1.0498	0.9701	N/A	0.8089	System Reconfiguration
FIREBAGH 70 kV		P2-4	Bus/Breaker	0.7904	0.6615	0.7626	N/A	N/A	N/A	0.9496	1.0456	0.6318	1.0489	0.9445	N/A	0.7625	System Reconfiguration
ATWATER 115 kV	WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2-4	Bus/Breaker	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.294	1.058	>0.9	>0.9	0.1891	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
LIVNGSTN 115 kV		P2-4	Bus/Breaker	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.2895	1.0531	>0.9	>0.9	0.187	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
GALLO 115 kV		P2-4	Bus/Breaker	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.286	1.0508	>0.9	>0.9	0.1854	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
EL CAPTN 115 kV		P2-4	Bus/Breaker	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.2911	1.0605	>0.9	>0.9	0.1857	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
CRESSEY 115 kV		P2-4	Bus/Breaker	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.2908	1.0567	>0.9	>0.9	0.1867	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
MERCED 115 kV		P2-4	Bus/Breaker	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.3242	1.0664	>0.9	>0.9	0.215	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
MARIPOS2 70 kV		P2-4	Bus/Breaker	-1.6035	>0.9	>0.9	N/A	N/A	N/A	0.8833	1.0582	>0.9	>0.9	0.7375	N/A	>0.9	System Reconfiguration
MRCDFLLS 70 kV		P2-4	Bus/Breaker	-2.3931	>0.9	>0.9	N/A	N/A	N/A	0.8075	1.0378	>0.9	>0.9	0.653	N/A	>0.9	System Reconfiguration
BER VLLY 70 kV		P2-4	Bus/Breaker	-1.5954	>0.9	>0.9	N/A	N/A	N/A	0.8782	1.0439	>0.9	>0.9	0.7307	N/A	>0.9	System Reconfiguration
INDN FLT 70 kV		P2-4	Bus/Breaker	-1.6219	>0.9	>0.9	N/A	N/A	N/A	0.8703	1.0429	>0.9	>0.9	0.7179	N/A	>0.9	System Reconfiguration
YOSEMITE 70 kV		P2-4	Bus/Breaker	-1.6307	>0.9	>0.9	N/A	N/A	N/A	0.8666	1.041	>0.9	>0.9	0.715	N/A	>0.9	System Reconfiguration
BER VLLY 70 kV	CHOWCOGN 13.80KV GEN UNIT 1 & MERCED FALLS-EXCHEQUER 70KV [8990]	P3	G1/N1	>0.9	>0.9	0.8884	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8884	Continue to Monitor future forecast
INDN FLT 70 kV		P3	G1/N1	>0.9	>0.9	0.8729	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.873	Continue to Monitor future forecast
YOSEMITE 70 kV		P3	G1/N1	>0.9	>0.9	0.8693	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8693	Continue to Monitor future forecast
DOS PALS 70 kV	CHOWCOGN 13.80KV GEN UNIT 1 & PANOCHÉ-ORO LOMA 115KV [3240]	P3	G1/N1	>0.9	0.8708	0.8627	N/A	N/A	N/A	>0.9	>0.9	0.8505	>0.9	>0.9	N/A	0.8626	Continue to Monitor future forecast
FIREBAGH 70 kV		P3	G1/N1	>0.9	0.8294	0.8199	N/A	N/A	N/A	0.8966	>0.9	0.8073	>0.9	>0.9	N/A	0.8198	Continue to Monitor future forecast
ORO LOMA 70 kV		P3	G1/N1	>0.9	0.8827	0.8749	N/A	N/A	N/A	>0.9	>0.9	0.8629	>0.9	>0.9	N/A	0.8748	Continue to Monitor future forecast
ORO LOMA 115 kV		P3	G1/N1	>0.9	0.8566	0.8973	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8972	Continue to Monitor future forecast
SNTA RTA 70 kV		P3	G1/N1	>0.9	0.8657	0.8575	N/A	N/A	N/A	>0.9	>0.9	0.8452	>0.9	>0.9	N/A	0.8574	Continue to Monitor future forecast
TOMATAK 70 kV		P3	G1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	0.8966	>0.9	>0.9	>0.9	>0.9	N/A	0.7315	Continue to Monitor future forecast
CHWCHLLA 115 kV	KERCKHOF 13.80KV GEN UNIT 1 & LE GRAND-CHOWCHILLA 115KV [2110]	P3	G1/N1	>0.9	>0.9	0.8666	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8668	Continue to Monitor future forecast
SHARON 115 kV		P3	G1/N1	>0.9	>0.9	0.8771	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8773	Continue to Monitor future forecast
DUNLAP 70 kV	KERCKHOF 13.80KV GEN UNIT 1 & MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P3	G1/N1	>0.9	>0.9	0.8673	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8672	Continue to Monitor future forecast
SANDCRK 70 kV		P3	G1/N1	>0.9	>0.9	0.8753	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8753	Continue to Monitor future forecast
AVENAL 70 kV	WESTLNDs 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	>0.9	>0.9	0.8377	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.833	Continue to Monitor future forecast
CALFLAX 70 kV		P3	G1/N1	>0.9	>0.9	0.8555	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8508	Continue to Monitor future forecast
CHEVPLIN 70 kV		P3	G1/N1	>0.9	>0.9	0.8319	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8271	Continue to Monitor future forecast
COLNGA 1 70 kV		P3	G1/N1	>0.9	>0.9	0.8329	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8285	Continue to Monitor future forecast
COLNGA 2 70 kV		P3	G1/N1	>0.9	>0.9	0.8353	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8307	Continue to Monitor future forecast
KETTLEMN 70 kV		P3	G1/N1	>0.9	>0.9	0.8306	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8258	Continue to Monitor future forecast
PLSNTVLY 70 kV		P3	G1/N1	>0.9	>0.9	0.8601	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8554	Continue to Monitor future forecast
TORNADO 70 kV		P3	G1/N1	>0.9	>0.9	0.8336	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8291	Continue to Monitor future forecast
GILLRAN 115 kV		P3	G1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8826	Sensitivity Only
MENDOTA 115 kV	WESTLNDs 0.48KV GEN UNIT 1 & PANOCHÉ-MENDOTA 115KV [3230]	P3	G1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.864	Sensitivity Only
NEWHALL 115 kV		P3	G1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8865	Sensitivity Only
PMTFMPP 115 kV		P3	G1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8828	Sensitivity Only
AVENAL 70 kV		P5-5	Non-Redundent Relay	0.9664	0.9554	0.8892	N/A	N/A	N/A	1.0121	1.0682	0.9547	1.0663	1.0416	N/A	0.8891	Install Redundant Protection
KETTLEMN 70 kV		P5-5	Non-Redundent Relay	0.9588	0.9494	0.8824	N/A	N/A	N/A	1.0131	1.0624	0.9488	1.0619	1.0312	N/A	0.8823	Install Redundant Protection
CHEVPLIN 70 kV		P5-5	Non-Redundent Relay	0.9601	0.9504	0.8837	N/A	N/A	N/A	1.0124	1.0604	0.9497	1.06	1.0319	N/A	0.8836	Install Redundant Protection

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
CALFLAX 70 kV	GATES Section D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	0.9731	0.9749	0.8954	N/A	N/A	N/A	1.0173	1.0427	0.9741	1.0434	1.0303	N/A	0.8951	Install Redundant Protection
PLSNTVLY 70 kV		P5-5	Non-Redundent Relay	0.9722	0.9567	0.8992	N/A	N/A	N/A	1.0154	1.0299	0.9562	1.0317	1.0211	N/A	0.899	Install Redundant Protection
COLNGA 2 70 kV		P5-5	Non-Redundent Relay	0.9573	0.9396	0.88	N/A	N/A	N/A	1.0163	1.0355	0.9389	1.0384	1.0156	N/A	0.8799	Install Redundant Protection
TORNADO 70 kV		P5-5	Non-Redundent Relay	0.9542	0.937	0.8788	N/A	N/A	N/A	1.0144	1.0331	0.9363	1.0371	1.0121	N/A	0.8788	Install Redundant Protection
COLNGA 1 70 kV		P5-5	Non-Redundent Relay	0.9584	0.9399	0.8808	N/A	N/A	N/A	1.0136	1.0368	0.9399	1.0428	1.0121	N/A	0.8809	Install Redundant Protection
ORO LOMA 70 kV	HAMMONDS 115 KV #1 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	0.9524	0.8856	0.8795	N/A	N/A	N/A	1.0138	1.0538	0.8673	1.0599	1.0255	N/A	0.8792	Monitor future forecast
SNTA RTA 70 kV		P5-5	Non-Redundent Relay	0.9372	0.8687	0.8622	N/A	N/A	N/A	1.0181	1.0627	0.8497	1.0705	1.0258	N/A	0.8618	Monitor future forecast
DOS PALS 70 kV		P5-5	Non-Redundent Relay	0.9419	0.8738	0.8674	N/A	N/A	N/A	1.0155	1.0588	0.855	1.0658	1.0235	N/A	0.867	Monitor future forecast
FIREBAGH 70 kV		P5-5	Non-Redundent Relay	0.9039	0.8326	0.8249	N/A	N/A	N/A	0.9477	1.0487	0.812	1.0506	0.9994	N/A	0.8245	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
ATWATER 115 kV	WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundent Relay	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.294	>0.9	>0.9	>0.9	0.1891	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
LIVNGSTN 115 kV		P5-5	Non-Redundent Relay	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.2895	>0.9	>0.9	>0.9	0.187	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
GALLO 115 kV		P5-5	Non-Redundent Relay	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.286	>0.9	>0.9	>0.9	0.1854	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
EL CAPTN 115 kV		P5-5	Non-Redundent Relay	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.2911	>0.9	>0.9	>0.9	0.1857	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
CRESSEY 115 kV		P5-5	Non-Redundent Relay	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.2908	>0.9	>0.9	>0.9	0.1867	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
MERCED 115 kV		P5-5	Non-Redundent Relay	Diverge	>0.9	>0.9	N/A	N/A	N/A	0.3242	>0.9	>0.9	>0.9	0.2151	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
MARIPOS2 70 kV		P5-5	Non-Redundent Relay	-1.5935	>0.9	>0.9	N/A	N/A	N/A	0.8833	>0.9	>0.9	>0.9	0.7376	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
MRCDFLLS 70 kV		P5-5	Non-Redundent Relay	-2.3839	>0.9	>0.9	N/A	N/A	N/A	0.8074	>0.9	>0.9	>0.9	0.6531	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
BER VLLY 70 kV		P5-5	Non-Redundent Relay	-1.5854	>0.9	>0.9	N/A	N/A	N/A	0.8782	>0.9	>0.9	>0.9	0.7308	N/A	>0.9	Wilson Project mitigatesProject: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan

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Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
INDN FLT 70 kV		P5-5	Non-Redundent Relay	-1.6117	>0.9	>0.9	N/A	N/A	N/A	0.8703	>0.9	>0.9	>0.9	0.718	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
YOSEMITE 70 kV		P5-5	Non-Redundent Relay	-1.6205	>0.9	>0.9	N/A	N/A	N/A	0.8666	>0.9	>0.9	>0.9	0.7151	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
FIREBAGH 70 kV	ASHLAN SVD=V1 & PANOCHÉ-ORO LOMA 115KV [3240]	P6	N1/N1	0.8624	0.7896	0.7876	N/A	N/A	N/A	0.8743	>0.9	0.7622	>0.9	>0.9	N/A	0.7879	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
STOREY 2 230 kV	BORDEN-GREGG 230KV [4400] & BORDEN-GREGG 230KV [4400] (2)	P6	N1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	0.8907	>0.9	>0.9	N/A	>0.9	Operating Solution
DOS PALS 70 kV	BORDEN-GREGG 230KV [4400] & PANOCHÉ-ORO LOMA 115KV [3240]	P6	N1/N1	>0.9	0.8332	0.8323	N/A	N/A	N/A	>0.9	>0.9	0.8083	>0.9	>0.9	N/A	0.8326	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
ORO LOMA 70 kV		P6	N1/N1	>0.9	0.8456	0.845	N/A	N/A	N/A	>0.9	>0.9	0.8213	>0.9	>0.9	N/A	0.8453	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
ORO LOMA 115 kV		P6	N1/N1	0.8949	0.8211	0.8669	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8672	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
SNTA RTA 70 kV		P6	N1/N1	0.8975	0.8279	0.8269	N/A	N/A	N/A	>0.9	>0.9	0.8026	>0.9	>0.9	N/A	0.8272	Operating Solution
GALLO 115 kV	EL CAPITAN-WILSON 115KV [1510] & LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED	P6	N1/N1	0.8717	0.8838	0.8892	N/A	N/A	N/A	>0.9	>0.9	0.87	>0.9	>0.9	N/A	0.8888	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
LIVNGSTN 115 kV		P6	N1/N1	0.8741	0.8778	0.8826	N/A	N/A	N/A	>0.9	>0.9	0.8638	>0.9	>0.9	N/A	0.8822	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
CHWCHLLA 115 kV	GATES D 230/70KV TB 5 & LE GRAND-CHOWCHILLA 115KV [2110]	P6	N1/N1	>0.9	>0.9	0.8611	N/A	N/A	N/A	>0.9	>0.9	0.8913	>0.9	>0.9	N/A	0.8664	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
SHARON 115 kV		P6	N1/N1	>0.9	>0.9	0.8717	N/A	N/A	N/A	>0.9	>0.9	0.8908	>0.9	>0.9	N/A	0.8769	Operating Solution
MRCDFLLS 70 kV	GATES D 230/70KV TB 5 & MERCED-MERCED FALLS 70KV [9010]	P6	N1/N1	>0.9	>0.9	0.891	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
CERTTEED 115 kV		P6	N1/N1	>0.9	>0.9	0.8905	N/A	N/A	N/A	>0.9	>0.9	0.8964	>0.9	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
DAIRYLND 115 kV	GATES D 230/70KV TB 5 & PANOCHÉ-MENDOTA 115KV [3230]	P6	N1/N1	>0.9	>0.9	0.8555	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8965	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
GILLRAN 115 kV		P6	N1/N1	>0.9	0.8923	0.8124	N/A	N/A	N/A	>0.9	>0.9	0.8826	>0.9	>0.9	N/A	0.8561	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
MENDOTA 115 kV		P6	N1/N1	0.8848	0.8695	0.7919	N/A	N/A	N/A	>0.9	>0.9	0.8594	>0.9	>0.9	N/A	0.8369	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
NEWHALL 115 kV		P6	N1/N1	>0.9	0.8973	0.8167	N/A	N/A	N/A	>0.9	>0.9	0.8877	>0.9	>0.9	N/A	0.8602	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
PMTFMPP 115 kV		P6	N1/N1	>0.9	0.893	0.8126	N/A	N/A	N/A	>0.9	>0.9	0.8833	>0.9	>0.9	N/A	0.8563	Operating Solution
TOMATAK 70 kV		P6	N1/N1	0.7664	0.7478	0.6657	N/A	N/A	N/A	0.8743	>0.9	0.7387	>0.9	>0.9	N/A	0.7068	Operating Solution
KAMM 115 kV	GATES D 230/70KV TB 5 & PANOCHÉ-SCHINDLER #1 115KV [3250] MOAS OPENED ON PANOCHÉ1_KAMM	P6	N1/N1	>0.9	>0.9	0.8776	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8826	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
SCHINDLR 115 kV		P6	N1/N1	>0.9	>0.9	0.8698	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8748	Operating Solution
WESTLNDS 115 kV		P6	N1/N1	>0.9	>0.9	0.8812	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8863	Operating Solution
LE GRAND 115 kV	GATES D 230/70KV TB 5 & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	>0.9	>0.9	0.8961	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
CRESSEY 115 kV	LIVINGSTON TAP 115KV [1031] MOAS OPENED ON ATWATR J_MERCED & EL CAPITAN-WILSON 115KV [1510]	P6	N1/N1	0.8772	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	0.8962	>0.9	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
CAMDEN 70 kV	MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2 & MCCALL-KINGSBURG #2 115KV [2300]	P6	N1/N1	>0.9	0.889	0.8818	N/A	N/A	N/A	>0.9	>0.9	0.8872	>0.9	>0.9	N/A	0.8818	Continue to Monitor future forecast
DINUBA 70 kV	MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE & SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY	P6	N1/N1	0.8722	>0.9	0.5873	N/A	N/A	N/A	>0.9	>0.9	0.8989	>0.9	>0.9	N/A	0.5865	Operating Solution
DUNLAP 70 kV		P6	N1/N1	0.8628	0.8972	0.5598	N/A	N/A	N/A	>0.9	>0.9	0.8881	>0.9	>0.9	N/A	0.5589	Operating Solution
OROSI 70 kV		P6	N1/N1	0.8746	>0.9	0.5921	N/A	N/A	N/A	>0.9	>0.9	0.8987	>0.9	>0.9	N/A	0.5913	Operating Solution
REEDLEY 70 kV		P6	N1/N1	0.8913	>0.9	0.633	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.6321	Operating Solution
REEDLEY 115 kV		P6	N1/N1	0.8827	>0.9	0.6501	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.6492	Operating Solution
SANDCRK 70 kV		P6	N1/N1	0.8686	>0.9	0.5708	N/A	N/A	N/A	>0.9	>0.9	0.8932	>0.9	>0.9	N/A	0.5699	Operating Solution
STONCRRL 70 kV		P6	N1/N1	0.8636	0.8953	0.5735	N/A	N/A	N/A	>0.9	>0.9	0.8864	>0.9	>0.9	N/A	0.5727	Operating Solution
WAHTOKE 115 kV		P6	N1/N1	0.8753	>0.9	0.6369	N/A	N/A	N/A	>0.9	>0.9	0.8942	>0.9	>0.9	N/A	0.6359	Operating Solution
CAL AVE 115 kV		P6	N1/N1	>0.9	0.88	0.7712	N/A	N/A	N/A	>0.9	>0.9	0.8741	>0.9	>0.9	N/A	0.771	Continue to Monitor future forecast

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
DANISHCM 115 kV	MCCALL-WEST FRESNO #2 115KV [2370] & SANGER-CALIFORNIA AVE 115KV [9130]	P6	N1/N1	>0.9	0.8879	0.7838	N/A	N/A	N/A	>0.9	>0.9	0.8821	>0.9	>0.9	N/A	0.7835	Continue to Monitor future forecast
WST FRSO 115 kV		P6	N1/N1	0.8986	0.8723	0.7547	N/A	N/A	N/A	>0.9	>0.9	0.8662	>0.9	>0.9	N/A	0.7544	Operating Solution
BER VLLY 70 kV	MERCED FALLS-EXCHEQUER 70KV [8990] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	>0.9	>0.9	0.8813	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8814	Continue to Monitor future forecast
INDN FLT 70 kV	MERCED FALLS-EXCHEQUER 70KV [8990] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	>0.9	>0.9	0.8657	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8658	Continue to Monitor future forecast
MARIPOS2 70 kV	MERCED FALLS-EXCHEQUER 70KV [8990] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	>0.9	>0.9	0.8938	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8939	Continue to Monitor future forecast
YOSEMITE 70 kV	MERCED FALLS-EXCHEQUER 70KV [8990] & WILSON-LE GRAND 115KV [4170]	P6	N1/N1	>0.9	>0.9	0.862	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	0.8621	Continue to Monitor future forecast
HENRIETA 230 kV	P1-2:A14:14: _GATES-GREGG 230KV [4700] & P1-2:A14:137: _CHSR09SWSTA-MUSTANGSS 230KV [0]	P6	N1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	0.8926	>0.9	0.8972	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
HENTAP2 230 kV		P6	N1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	0.8926	>0.9	0.8972	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
EL NIDO 115 kV	PANOCHÉ-ORO LOMA 115KV [3240] & WILSONPGAE SVD=V	P6	N1/N1	>0.9	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	0.8979	>0.9	>0.9	N/A	>0.9	Sensitivity Only
ATWATER 115 kV	WILSON 230/115KV TB 1 & WILSON 230/115KV TB 2	P6	N1/N1	0.8866	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
EL CAPTN 115 kV		P6	N1/N1	0.8921	>0.9	>0.9	N/A	N/A	N/A	>0.9	>0.9	>0.9	>0.9	>0.9	N/A	>0.9	Project: Wilson 115kV Reinforcement Project In-service date: 05/23 Short term: Action plan
SJNO2 70 kV	BORDEN-GREGG 230KV #1 & #2 [4400]	P7-1	DCTL	0.9863	0.9626	>0.9	N/A	N/A	N/A	1.0218	1.0416	0.896	1.0459	1.008	N/A	>0.9	Sensitivity Only
SJNO3 70 kV		P7-1	DCTL	0.9829	0.9592	>0.9	N/A	N/A	N/A	1.0191	1.0436	0.8921	1.0482	1.0021	N/A	>0.9	Sensitivity Only
AUBERRY 70 kV		P7-1	DCTL	0.9891	0.9633	>0.9	N/A	N/A	N/A	1.0242	1.0412	0.8968	1.0455	1.0153	N/A	>0.9	Sensitivity Only
ORO LOMA 70 kV	LOS BANOS-PANOCHÉ #1 230KV [5030] & PANOCHÉ-ORO LOMA 115KV [3240]	P7-1	DCTL	0.9523	0.8855	0.8795	N/A	N/A	N/A	1.0134	1.0527	0.8672	1.059	1.0254	N/A	0.8791	System Reconfiguration
SNTA RTA 70 kV		P7-1	DCTL	0.9371	0.8686	0.8621	N/A	N/A	N/A	1.0176	1.0613	0.8495	1.0694	1.0258	N/A	0.8618	System Reconfiguration
DOS PALS 70 kV		P7-1	DCTL	0.9418	0.8737	0.8674	N/A	N/A	N/A	1.0151	1.0576	0.8549	1.0649	1.0235	N/A	0.867	System Reconfiguration
FIREBAGH 70 kV		P7-1	DCTL	0.9038	0.8325	0.8248	N/A	N/A	N/A	0.9473	1.0489	0.8118	1.0508	0.9994	N/A	0.8244	System Reconfiguration
CAMDEN 70 kV	MCCALL-KINGSBURG #1 115KV [2290] & MCCALL-KINGSBURG #2 115KV [2301]	P7-1	DCTL	0.9288	0.889	0.8817	N/A	N/A	N/A	0.9766	1.0544	0.8872	1.0637	0.9596	N/A	0.8817	Under Review
DUNLAP 70 kV	MCCALL-REEDLEY 115KV [2320] & MCCALL-SANGER #3 115KV [2350]	P7-1	DCTL	0.9701	0.9879	0.8709	N/A	N/A	N/A	1.0449	1.0578	0.9844	1.063	1.0123	N/A	0.8707	Monitor future forecast
SANDCRK 70 kV		P7-1	DCTL	0.9752	0.9924	0.879	N/A	N/A	N/A	1.0463	1.0584	0.989	1.0634	1.0166	N/A	0.8787	Monitor future forecast
STONCRRL 70 kV		P7-1	DCTL	0.9707	0.986	0.8813	N/A	N/A	N/A	1.0431	1.0532	0.9828	1.0579	1.0105	N/A	0.8811	Monitor future forecast
DINUBA 70 kV		P7-1	DCTL	0.9782	0.997	0.891	N/A	N/A	N/A	1.0463	1.0608	0.9939	1.0657	1.0186	N/A	0.8908	Monitor future forecast

Study Area: PG&E Greater Fresno

Low Voltages



Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)								Voltage PU (Sensitivity Scenarios)					Project & Potential Mitigation Solutions
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generations	2030 Summer Peak w/o Facility Rerates	
OROSI 70 kV	SANGER #3 115KV [2350]	P7-1	DCTL	0.9804	0.9969	0.8944	N/A	N/A	N/A	1.0474	1.0564	0.9938	1.0608	1.0185	N/A	0.8942	Monitor future forecast

Study Area: PG&E Greater Fresno

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
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generation	
CHWCHLLA 115 kV	LE GRAND-CHOWCHILLA 115KV [2110]	P1-2	N-1	3.824	5.175	8.989	N/A	N/A	N/A	1.052	-2.852	3.706	-3.725	0.017	N/A	Conitinue to monitor future forecast
CANAL 70 kV	LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P1-2	N-1	5.806	4.599	9.471	N/A	N/A	N/A	0.718	-1.31	4.757	-1.395	2.039	N/A	Conitinue to monitor future forecast
ORO LOMA 70 kV	PANOCHÉ-ORO LOMA 115KV [3240]	P1-2	N-1	7.974	15.514	11.246	N/A	N/A	N/A	3.163	-0.764	17.07	-1.161	2.224	N/A	System Reconfiguration
SNTA RTA 70 kV	PANOCHÉ-ORO LOMA 115KV [3240]	P1-2	N-1	8.101	15.787	11.46	N/A	N/A	N/A	2.506	-0.512	17.384	-0.732	2.225	N/A	System Reconfiguration
DOS PALS 70 kV	PANOCHÉ-ORO LOMA 115KV [3240]	P1-2	N-1	8.062	15.706	11.397	N/A	N/A	N/A	2.842	-0.645	17.29	-0.963	2.229	N/A	System Reconfiguration
FIREBAGH 70 kV	PANOCHÉ-ORO LOMA 115KV [3240]	P1-2	N-1	8.413	16.441	11.984	N/A	N/A	N/A	0.998	-0.17	18.144	-0.166	2.286	N/A	System Reconfiguration
DINUBA 70 kV	REEDLEY-DINUBA #1 70KV [9050]	P1-2	N-1	6.356	5.329	11.01	N/A	N/A	N/A	1.584	-0.834	5.513	-1.192	3.109	N/A	System Reconfiguration
AVENAL 70 kV	GATES D 230/70KV TB 5	P1-3	N-1	2.776	4.693	11.555	N/A	N/A	N/A	-2.31	-2.352	4.817	-4.077	-1.191	N/A	Conitinue to monitor future forecast
KETTLEMN 70 kV		P1-3	N-1	2.794	4.716	11.619	N/A	N/A	N/A	-2.307	-2.698	4.84	-4.092	-1.43	N/A	Conitinue to monitor future forecast
CHEVPLIN 70 kV		P1-3	N-1	2.792	4.714	11.611	N/A	N/A	N/A	-2.31	-2.671	4.838	-4.102	-1.406	N/A	Conitinue to monitor future forecast
CALFLAX 70 kV		P1-3	N-1	3.166	4.655	10.319	N/A	N/A	N/A	-1.388	-2.387	4.762	-2.783	-1.382	N/A	Conitinue to monitor future forecast
PLSNTVLY 70 kV		P1-3	N-1	2.511	3.91	8.93	N/A	N/A	N/A	-1.638	-0.829	4.017	-1.091	-0.693	N/A	Conitinue to monitor future forecast
COLNGA 2 70 kV		P1-3	N-1	2.962	4.715	10.519	N/A	N/A	N/A	-1.518	-1.727	4.808	-2.165	-1.384	N/A	Conitinue to monitor future forecast
TORNADO 70 kV		P1-3	N-1	2.862	4.662	10.488	N/A	N/A	N/A	-1.559	-1.752	4.747	-2.287	-1.333	N/A	Conitinue to monitor future forecast
COLNGA 1 70 kV		P1-3	N-1	2.642	4.506	10.368	N/A	N/A	N/A	-1.666	-1.729	4.582	-2.426	-1.196	N/A	Conitinue to monitor future forecast
KERMAN1 70 kV	AGRICO 13.80KV & AGRICO 13.80KV & AGRICO 13.80KV GEN UNITS & HELM 230/70KV TB 1	P3	G1/N1	0	0	0	N/A	N/A	N/A	17.646	0	0	0	0	N/A	Under Review
KERMAN2 70 kV		P3	G1/N1	0	0	0	N/A	N/A	N/A	17.645	0	0	0	0	N/A	Under Review
SAN JOQN 70 kV		P3	G1/N1	0	0	0	N/A	N/A	N/A	17.633	0	0	0	0	N/A	Under Review
WESIX 70 kV		P3	G1/N1	0	0	0	N/A	N/A	N/A	11.433	0	0	0	0	N/A	Under Review
WESTLAND 70 kV		P3	G1/N1	0	0	0	N/A	N/A	N/A	11.401	0	0	0	0	N/A	Under Review
DOS PALS 70 kV	CHOWCOGN 13.80KV GEN UNIT 1 & PANOCHÉ-ORO LOMA 115KV [3240]	P3	G1/N1	0	16.008	12.05	N/A	N/A	N/A	0	0	17.632	0	0	N/A	Conitinue to monitor future forecast
FIREBAGH 70 kV		P3	G1/N1	0	16.761	12.674	N/A	N/A	N/A	5.95	0	18.508	0	0	N/A	Conitinue to monitor future forecast
ORO LOMA 70 kV		P3	G1/N1	0	15.811	11.891	N/A	N/A	N/A	0	0	17.406	0	0	N/A	Conitinue to monitor future forecast
SNTA RTA 70 kV		P3	G1/N1	0	16.091	12.117	N/A	N/A	N/A	0	0	17.728	0	0	N/A	Conitinue to monitor future forecast
CHWCHLLA 115 kV	KERCKHOF 13.80KV GEN UNIT 1 & LE GRAND-CHOWCHILLA 115KV [2110]	P3	G1/N1	0	0	12.883	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
SHARON 115 kV		P3	G1/N1	0	0	11.332	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
McCall 230/115kV TB #2	KERCKHOF 13.80KV GEN UNIT 1 & REEDLEY-DINUBA #1 70KV [9050]	P3	G1/N1	0	0	11.234	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
CANAL 70 kV	VEGA 0.36KV GEN UNIT 1 & LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P3	G1/N1	0	0	12.218	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
ORTIGA 70 kV	VEGA 0.36KV GEN UNIT 1 & LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P3	G1/N1	0	0	10.159	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
AVENAL 70 kV	WESTLNDs 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	16.693	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
CALFLAX 70 kV	WESTLNDs 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	14.587	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
Henrietta-Mustang #1 230kV line	WESTLNDs 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	16.776	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast

Study Area: PG&E Greater Fresno

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
				2022 Summer Peak	2025 Summer Peak	2030 Summer Peak	2022 Winter Peak	2025 Winter Peak	2030 Winter Peak	2022 Spring Off-Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SpOP Hi Renew & Min Gas Gen	2022 SP Heavy Renewable & Min Gas Gen	2030 Retirement of QF Generation	
COLNGA 1 70 kV	WESTLNDS 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	14.921	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
COLNGA 2 70 kV	WESTLNDS 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	15.008	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
KETTLEMN 70 kV	WESTLNDS 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	16.789	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
PLSNTVLY 70 kV	WESTLNDS 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	12.843	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast
Henrietta-Mustang #2 230kV line	WESTLNDS 0.48KV GEN UNIT 1 & GATES D 230/70KV TB 5	P3	G1/N1	0	0	15.01	N/A	N/A	N/A	0	0	0	0	0	N/A	Conitinue to monitor future forecast

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Transient Stability



Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			2025 Summer Peak	2030 Summer Peak	2025 Spring Off-Peak	2025 SP High CEC Forecast	2025 SP Heavy Renewable & Min Gas Gen	
Helms unit 1	P1-1	N-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
Gates 500/230kV Transformer #11	P1-3	T-1	No Issues	WECC Criteria Not Met	No Issues	No Issues	No Issues	Continue to monitor future forecast
Wilson 230/115kV TB #1	P1-3	T-2	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
Gates 230kV Bus	P2-4	Bus Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
McCall 230kV Bus	P2-4	Bus Breaker	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	Under Review
Borden 230kV Bus	P2-4	Bus Breaker	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	Under Review
McCall 115kV Middle breaker	P2-4	Bus Breaker	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
McCall 230kV TB plus Helms unit 1	P3-3	G-1/T-1	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	Under Review
Wilson 230/115kV TB #1 & #2	P6	N-1-1	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
Helms-Gregg 230kv line and Mustang-Gregg 230kV line	P6	N-1-1	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	Under Review
Bellota-Warnerville 230kV and Warnerville-Wilson 230kV lines	P7-1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
Panoche-Tranquility #1 and #2 230kV Lines	P7-1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
Gates-McCall 230kV and Helms-McCall 230kV Lines	P7-1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
Gregg-Helms #1 and #2 230kV Lines Temporary	P7-1	DCTL	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	Under Review
Gregg-Helms #1 and #2 230kV Lines Permanent	P7-1	DCTL	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	WECC Criteria Not Met	Under Review
Gates-Mustang #1 and #2	P7-1	DCTL	No Issues	No Issues	No Issues	No Issues	No Issues	No Violation
Herndon-Barton 115kV Line and Sanger-Manchester 115kV line	P7-1	DCTL	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	WECC Criteria Not Met	Under Review
McCall-Reedley 115kV Line and McCall- Sanger #1 115kV Line	P7-1	DCTL	WECC Criteria Not Met	WECC Criteria Not Met	No Issues	WECC Criteria Not Met	No Issues	Under Review

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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 Greater Fresno



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 more than 100 MW