

2024-2025 ISO Reliability Assessment - Study Results

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
				2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2029 Summer-Off Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2026 SP Heavy Renewable & Min Gas Gen	2026 OP Sensitivity	2029 SP High CEC Forecast	
Chowchilla-Kerckhoff #2 115 kV Line	Base Case	P0	N-0	83	86	106	12	36	19	43	36	87	Continue to monitor
Adams East-Biomass junction 70kV	P2-4:A13:5:_PANOCHE 230KV - SECTION 1D & 2D	P2	Bus/Breaker	7	NA	NA	NA	37	NA	52	137	NA	Sensitivity only
	P1-2:A13:61:_LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON ADERASLRJCT_DAIRYLAND & P1-2:A13:57:_PANOCHE-MENDOTA 115KV [3230]	P6	N-1-1	159	<100	<100	<100	95	<100	12	59	<100	Summer setup control point
	P7-1:A13:6:_PANOCHE-TRANQLTYSS #1 230KV [0] & PANOCHE-TRANQLTYSS #2 230KV [0]	P7	DCTL	10	NA	NA	NA	58	NA	44	140	NA	Sensitivity only
Adams East-Westland junction 70kV	P2-4:A13:5:_PANOCHE 230KV - SECTION 1D & 2D	P2	Bus/Breaker	6	NA	NA	NA	37	NA	14	137	NA	Sensitivity only
	P1-3:A13:6:_PANOCHE 230/115KV TB 2 & P1-3:A13:5:_PANOCHE 230/115KV TB 1	P6	N-1-1	<100	<100	<100	<100	<100	<100	100	<100	<100	Summer setup control point
	P7-1:A13:6:_PANOCHE-TRANQLTYSS #1 230KV [0] & PANOCHE-TRANQLTYSS #2 230KV [0]	P7	DCTL	13	NA	NA	NA	58	NA	11	140	NA	Sensitivity only
Adera Solar-Dairyland 115kV	P1-2:A13:57:_PANOCHE-MENDOTA 115KV [3230] & P1-3:A13:35:_MENDOTA 115/70KV TB 5	P6	N-1-1	<100	<100	<100	<100	<100	<100	100	<100	<100	Sensitivity only
Atwater-Merced 115 kV Line	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	NConv	NA	NA	NA	NConv	NA	26	NConv	NA	Install redundant relay
	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	10	NConv	24	27	NConv	NConv	Install redundant battery
Barton-Airways-Sanger 115 kV Line	P2-2:A14:47:_HERNDON 115KV SECTION 2D	P2	Bus/Breaker	30	29	27	21	75	104	13	69	30	Generation Re-dispatch
	P2-3:A14:66:_HERNDON - 2D 115KV & HERNDON-BULLARD #2 LINE	P2	Bus/Breaker	30	29	27	21	75	104	13	68	30	Generation Re-dispatch
	P2-3:A14:67:_HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2	Bus/Breaker	29	29	27	21	75	104	13	69	29	Generation Re-dispatch
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	14	15	13	NConv	90	NConv	31	40	16	Install redundant battery
	P1-2:A14:81:_HERNDON-WOODWARD 115KV [1790] & P1-2:A14:79:_HERNDON-MANCHESTER 115KV [1780]	P6	N-1-1	<100	<100	<100	<100	<100	101	<100	<100	<100	Generation Re-dispatch
	P1-2:A14:9:_TRANQUILLITY SW STA-KEARNEY 230KV [5380] & P1-2:A14:18:_MUSTANG SW STA-GREGG 230KV [4700]	P6	N-1-1	<100	<100	<100	<100	107	<100	<100	103	<100	Generation Re-dispatch
	P7-1:A14:17:_HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7	DCTL	32	27	26	51	44	105	37	58	29	Sensitivity only
	P7-1:A14:22:_HENTAP1-MUSTANGSS #1 230KV [0] & HERNDON-KEARNEY 230KV [4900]	P7	DCTL	42	34	42	6	127	85	12	96	NConv	Generation Re-dispatch
	P7-1:A14:26:_HENTAP1-MUSTANGSS #1 230KV [0] & TRANQLTYSS-MCMULLN1 #1 230KV [0]	P7	DCTL	49	42	50	7	132	80	12	100	NConv	Generation Re-dispatch
Borden-Coppermine 70 kV Line	P2-4:A14:19:_HERNDON 115KV - SECTION 1D & 2D	P2	Bus/Breaker	122	87	83	12	35	71	32	34	88	Project:Coppermine 70kV reinforcement project
	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	110	82	80	11	46	75	40	42	82	Project:Coppermine 70kV reinforcement project
	P1-2:A14:119:_TIVY VALLEY-REEDLEY 70KV [9260] & P1-1:A14:110:_FRIANTDAM 6.60KV GEN UNIT 2	P3	G-1/N-1	102	<100	<100	<100	<100	<100	<100	<100	<100	Summer setup control point
	P5-5c:A14:5:_Herndon 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	75	73	65	14	66	115	16	66	73	Install redundant battery
	P5-5a:A14:2:_HERNDON #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	122	87	83	12	35	72	32	35	88	Install redundant relay
	P5-5a:A14:3:_MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	NConv	83	NConv	6	44	41	36	28	NConv	Install redundant relay
	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	122	NConv	NConv	6	43	42	29	28	NConv	Install redundant battery
	P5-5c:A14:5:_Herndon 230-115kV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	110	81	78	1	48	81	35	45	82	Install redundant battery
	P1-2:A14:16:_GREGG-HERNDON #2 230KV [4840] & P1-2:A14:15:_GREGG-HERNDON #1 230KV [4830]	P6	N-1-1	<100	<100	<100	<100	<100	117	<100	<100	<100	Generation Re-dispatch
P1-3:A14:42:_REEDLEY 115/70KV TB 2 & P1-3:A14:43:_REEDLEY 115/70KV TB 4	P6	N-1-1	263	<100	<100	<100	180	<100	152	180	<100	Project:Coppermine 70kV reinforcement project	
California Ave.-Sanger 115 kV Line	P1-2:A14:76:_MCCALL-WEST FRESNO #2 115KV [2370] & P1-2:A14:70:_CALIFORNIA AVE-MCCALL 115KV [2360]	P6	N-1-1	103	104	102	<100	<100	<100	<100	<100	106	Operating solution
	P7-1:A14:11:_CALIFORNIA AVE-MCCALL 115KV [2360] & MCCALL-WEST FRESNO #2 115KV [2370]	P7	DCTL	103	104	102	26	45	5	72	45	106	Summer setup control point

	P2-4:A14:19:_HERNDON 115KV - SECTION 1D & 2D	P2	Bus/Breaker	78	75	63	69	28	122	23	12	78	Generation Re-dispatch
	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	68	70	58	37	35	108	13	11	72	Generation Re-dispatch
	P2-3:A14:1:_GREGG 230KV - MIDDLE BREAKER BAY 1	P2	Bus/Breaker	19	26	25	123	7	37	87	62	NConv	Generation Re-dispatch
	P5-5c:A14:5:_Herndon 230-115kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	57	55	48	47	31	102	19	18	57	Install redundant battery
	P5-5a:A14:2:_HERNDON #1 & 2 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundent battery/relay	77	74	62	70	29	123	24	16	77	Install redundant relay
	P5-5c:A13:1:_Los Banos 500-230-70kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	38	37	32	NConv	60	NConv	63	40	39	Install redundant battery
	P5-5c:A13:2:_Wilson 230-115kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	82	NConv	29	55	NConv	NConv	Install redundant battery
	P5-5c:A13:9:_Borden 230-70kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	15	21	NA	109	23	48	77	76	24	Install redundant battery
	P5-5c:A14:21:_Sanger 115kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	64	22	15	104	88	125	92	23	23	Install redundant battery
	P5-5c:A14:5:_Herndon 230-115kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	73	71	61	61	40	132	25	24	74	Install redundant battery
Chowchilla-Kerckhoff #2 115 kV Line	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundent battery/relay	NConv	NA	NA	NA	NConv	NA	52	NConv	NA	Install redundant relay
	P5-5a:A14:2:_HERNDON #1 & 2 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundent battery/relay	74	70	58	73	31	126	27	17	73	Install redundant relay
	P5-5c:A13:1:_Los Banos 500-230-70kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	34	33	29	NConv	63	NConv	66	38	35	Install redundant battery
	P5-5c:A13:2:_Wilson 230-115kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	86	NConv	28	60	NConv	NConv	Install redundant battery
	P5-5c:A13:9:_Borden 230-70kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	12	3	NA	113	21	52	80	74	20	Install redundant battery
	P5-5c:A14:21:_Sanger 115kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	67	18	11	107	91	128	95	24	19	Install redundant battery
	P1-2:A14:16:_GREGG-HERNDON #2 230KV [4840] & P1-2:A14:15:_GREGG-HERNDON #1 230KV [4830]	P6	N-1-1	<100	<100	<100	<100	<100	114	<100	<100	<100	Generation Re-dispatch
	P7-1:A13:1:_WILSON-BORDEN 230KV #1 & #2 [9001]	P7	DCTL	15	16	8	108	27	50	78	77	17	Generation Re-dispatch
	P7-1:A14:12:_KERCKHOFF-CLOVIS-SANGER #1 115KV [1890] & KERCKHOFF-CLOVIS-SANGER #2 115KV [1900]	P7	DCTL	64	22	15	104	88	123	92	23	23	Generation Re-dispatch
	P7-1:A13:13:_BORDEN-GREGG 230KV #1 & #2 [4400]	P7	DCTL	19	26	25	123	7	37	87	62	NConv	Generation Re-dispatch
	P7-1:A14:12:_KERCKHOFF-CLOVIS-SANGER #1 115KV [1890] & KERCKHOFF-CLOVIS-SANGER #2 115KV [1900]	P7	DCTL	67	18	11	107	90	127	94	24	19	Generation Re-dispatch
Coburn-Lasaguillas 230 kV Line	P5-5c:A13:1:_Los Banos 500-230-70kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	43	56	64	NConv	87	NConv	66	89	58	Install redundant battery
Coppermine- Tivy Valley 70kV	P1-2:A13:81:_BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY & P1-1:A14:110:_FRIANTDAM 6.60KV GEN UNIT 2	P3	G-1/N-1	105	99	152	<100	<100	<100	<100	<100	102	Summer setup control point
	P1-3:A14:42:_REEDLEY 115/70KV TB 2 & P1-3:A14:43:_REEDLEY 115/70KV TB 4	P6	N-1-1	139	145	148	<100	117	<100	117	116	144	Summer setup control point
Dinuba-Orosi 70 kV Line	P1-2:A14:123:_REEDLEY-DINUBA #1 70KV [9050]	P1	N-1	118	117	5	17	53	23	52	53	120	Project:Reedley 70kV reinforcement project
	P1-2:A14:123:_REEDLEY-DINUBA #1 70KV [9050]	P1	N-1	127	126	21	19	56	26	60	56	128	Project:Reedley 70kV reinforcement project
Dos Amigos PP-Panoche #3 230 kV Line	P5-5a:A14:1:_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundent battery/relay	38	NA	NA	NA	27	NA	107	61	NA	Install redundant relay
	P5-5c:A14:14:_Gates 230-70kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	42	NA	NA	NA	26	NA	107	60	NA	Install redundant battery
	P5-5c:A14:1:_Gates 500kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	29	NA	NA	NA	14	NA	122	74	NA	Install redundant battery
El Capitan-Wilson 115 kV Line	P1-2:A13:49:_WILSON-ATWATER #2 115KV [4160] & P1-2:A13:41:_ATWATER-LIVINGSTON-MERCED 115KV [1030] MOAS OPENED ON ATWATER J. MERCED	P6	N-1-1	105	<100	<100	<100	<100	<100	<100	<100	<100	Project:Wilson 115kV reinforcement project
EXCELSIORSS-SCHINDLER #1 115kV Line	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-2:A14:72:_EXCELSIOR SW STA-SCHINDLER #2 115KV [3249]	P6	N-1-1	104	105	<100	<100	<100	<100	<100	<100	106	Project:Gates new bank addition project
EXCELSIORSS-SCHINDLER #2 115kV Line	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-2:A14:71:_EXCELSIOR SW STA-SCHINDLER #1 115KV [3248]	P6	N-1-1	104	105	<100	<100	<100	<100	<100	<100	106	Project:Gates new bank addition project
Exchequer 115/70/13.8 kV Transformer	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundent battery/relay	NConv	NA	NA	NA	NConv	NA	23	NConv	NA	Install redundant relay
	P5-5c:A13:2:_Wilson 230-115kv Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	15	NConv	35	23	NConv	NConv	Install redundant battery
Fernandez-La Grand 115 kV Line	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundent battery/relay	NConv	NA	NA	NA	NConv	NA	83	NConv	NA	Install redundant relay

LAUREL-TRINITY 115 KV LINE	P5-5c:A13:2;_Wilson 230-115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	39	NConv	91	83	NConv	NConv	Install redundant battery	
Five point Solar-Cal flax 70KV Line	P1-3:A14:14;_GATES D 230/70KV TB 5	P1	N-1	110	91	34	34	54	63	19	62	92	Project:Gates new bank addition project	
	P2-2:A14:21;_GATES D 230KV SECTION 2D	P2	Bus/Breaker	111	92	34	38	55	68	17	64	93	Project:Gates new bank addition project	
	P2-4:A13:13;_PANOCH1 SECTION 1D & PANOCH2 SECTION 2D	P2	Bus/Breaker	20	21	39	54	27	69	125	16	21	Sensitivity only	
	P2-4:A14:8;_GATES D 230KV - SECTION 2D & 1D	P2	Bus/Breaker	118	100	32	47	58	80	16	72	101	Project:Gates new bank addition project	
	P1-3:A14:14;_GATES D 230/70KV TB 5 & P1-1:A14:114;_CHV.COAL 9.11KV GEN UNIT 1	P3	G-1/N-1	<100	99	<100	<100	<100	<100	<100	<100	<100	101	Sensitivity Only
	P5-5a:A14:1;_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	121	101	140	49	45	83	17	63	102	Install redundant relay	
	P5-5c:A13:1;_Los Banos 500-230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	63	24	34	NConv	133	NConv	48	32	24	Install redundant battery	
	P5-5c:A13:4;_Panoche 230-115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	45	51	40	35	107	64	117	131	52	Install redundant battery	
Gates-Gregg 230 kv Line	P5-5c:A13:1;_Los Banos 500-230-70kv Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	19	14	14	NConv	112	NConv	12	11	14	Install redundant battery	
	P5-5c:A13:1;_Los Banos 500-230-70kv Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	24	16	20	NConv	127	NConv	17	8	16	Install redundant battery	
Gates-Gregg 230 KV Line	P5-5c:A14:1;_Gates 500kv Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	14	10	59	7	115	33	74	82	10	Install redundant battery	
Gates-Midway 230KV	P5-5c:A14:1;_Gates 500kv Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	14	10	59	7	115	33	74	82	10	Install redundant battery	
Gates-Tulare Lake 70 kv Line	P1-2:A14:136;_ARCO-TULARE LAKE 70KV [8460] & P1-1:A14:22;_2484-WD 21.00KV GEN UNIT FW	P3	G-1/N-1	104	104	111	<100	<100	<100	<100	<100	105	Disable Automatic load transfer	
Guard-Mccall 115KV	P1-2:A14:83;_MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2 & P1-2:A14:88;_HENRIETTA-LEPRINO SW STA 115KV [1737]	P6	N-1-1	<100	<100	<100	<100	<100	116	<100	<100	<100	Generation Re-dispatch	
GWF-Kingsburg 115 kv Line	P2-3:A14:18;_MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	81	76	131	68	10	21	30	59	76	Continue to monitor	
	P2-4:A14:4;_MC CALL 230KV - SECTION 2E & 1E	P2	Bus/Breaker	92	89	103	16	70	21	7	33	91	Continue to monitor	
	P2-3:A14:18;_MUSTANGSS 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	70	66	111	59	5	13	27	45	67	Continue to monitor	
	P7-1:A14:17;_HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7	DCTL	95	89	103	48	67	69	41	8	92	Continue to monitor	
Helms-Gregg 230KV Line No 1	P2-1:A14:6;_HELMS-GREGG #2 230KV [4880] (GREGG-HELMS PP3)	P2	Bus/Breaker	95	96	95	70	72	NConv	92	72	96	Generation Re-dispatch	
Helms-Gregg 230KV Line No 2	P2-1:A14:5;_HELMS-GREGG #1 230KV [4870] (GREGG-HELMS PP1)	P2	Bus/Breaker	95	96	95	26	72	NConv	61	72	96	Generation Re-dispatch	
Helm-Stroud Sw Station 70 kv Line	P2-2:A14:21;_GATES D 230KV SECTION 2D	P2	Bus/Breaker	101	101	75	28	64	77	53	58	101	Summer setup control point	
	P2-3:A14:137;_SCHINDLR 115KV - RING R1 & R3	P2	Bus/Breaker	110	106	116	40	31	86	8	59	106	Summer setup control point	
	P2-3:A14:60;_EXCELSIORSS 115KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	110	106	116	40	31	86	8	60	106	Summer setup control point	
	P2-4:A13:13;_PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2	Bus/Breaker	65	77	123	106	25	140	95	14	77	Continue to monitor	
	P2-4:A13:5;_PANOCH 230KV - SECTION 1D & 2D	P2	Bus/Breaker	68	NA	NA	NA	76	NA	28	169	NA	Sensitivity only	
	P2-4:A14:8;_GATES D 230KV - SECTION 2D & 1D	P2	Bus/Breaker	107	108	74	35	68	86	58	64	108	Summer setup control point	
	P1-3:A14:28;_HELM 230/70KV TB 1 & P1-1:A14:118;_AGRICO 13.80KV & AGRICO 13.80KV GEN UNITS	P3	G-1/N-1	<100	151	<100	<100	<100	<100	<100	<100	<100	155	Summer setup control point
	P5-5a:A14:1;_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	110	108	164	9	31	77	31	32	107	Install redundant relay	
	P5-5c:A13:4;_Panoche 230-115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	112	119	120	94	80	151	6	113	119	Install redundant battery	
	P5-5c:A13:5;_Tranquility SW STA 230KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	34	9	50	129	17	85	41	5	14	Install redundant battery	
	P5-5c:A14:14;_Gates 230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	63	71	119	18	11	42	24	12	70	Install redundant battery	
	P5-5c:A14:27;_Excelsior SW STA 115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	109	105	116	41	30	87	11	58	106	Install redundant battery	
	P1-2:A14:24;_MUSTANG SW STA-MCCALL 230KV [4710] & P1-2:A14:10;_TRANQUILITY SW STA-HELM 230KV [5370]	P6	N-1-1	<100	<100	<100	96	<100	117	<100	<100	<100	<100	Generation Re-dispatch
P7-1:A13:14;_EXCELSIORSS-PANOCH1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7	DCTL	109	104	112	81	29	136	58	58	104	Summer setup control point		
P7-1:A13:6;_PANOCH-TRANQLTYSS #1 230KV [0] & PANOCH-TRANQLTYSS #2 230KV [0]	P7	DCTL	56	NA	NA	NA	90	NA	21	177	NA	Sensitivity only		

	P7-1:A14:10:_PANOCHESCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7	DCTL	127	122	125	84	40	141	60	69	122	Summer setup control point
	P7-1:A14:23:_TRANQTYSS-HELM #1 230KV [0] & TRANQTYSS-MCMULLN #1 230KV [0]	P7	DCTL	42	11	46	128	14	86	43	10	15	Generation Re-dispatch
Herndon 230/115kV Bank 2	P2-4:A14:2:_HERNDON 230KV - SECTION 1E & 1D	P2	Bus/Breaker	88	91	100	18	32	101	38	25	NConv	Continue to monitor
Herndon-Ashlan 230 kV Line	P5-5c:A14:2:_Gregg 230KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	99	101	76	38	44	41	48	44	71	Install redundant battery
	P2-2:A14:47:_HERNDON 115KV SECTION 2D	P2	Bus/Breaker	74	73	75	16	55	111	14	49	75	Generation Re-dispatch
	P2-3:A14:66:_HERNDON - 2D 115KV & HERNDON-BULLARD #2 LINE	P2	Bus/Breaker	74	73	75	16	55	111	14	49	75	Generation Re-dispatch
	P2-3:A14:67:_HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2	Bus/Breaker	73	73	74	17	55	111	14	49	74	Generation Re-dispatch
	P5-5a:A14:3:_MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	3	26	58	36	16	NConv	Install redundant relay
Herndon-Barton 115 kV Line	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	57	59	60	NConv	69	NConv	7	20	61	Install redundant battery
	P5-5c:A14:10:_Mccall 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	95	NConv	NConv	5	18	58	20	11	NConv	Install redundant battery
	P1-2:A14:81:_HERNDON-WOODWARD 115KV [1790] & P1-2:A14:53:_AIRWAYS2-SANGER-LASPALMS-MANCHSTR 115KV [0]	P6	N-1-1	<100	<100	<100	<100	<100	106	<100	<100	<100	Generation Re-dispatch
	P7-1:A14:17:_HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7	DCTL	77	72	75	43	25	112	15	38	75	Generation Re-dispatch
	P7-1:A14:22:_HENTAP1-MUSTANGSS #1 230KV [0] & HERNDON-KEARNEY 230KV [4900]	P7	DCTL	20	26	27	15	99	102	14	69	NConv	Generation Re-dispatch
	P7-1:A14:26:_HENTAP1-MUSTANGSS #1 230KV [0] & TRANQTYSS-MCMULLN #1 230KV [0]	P7	DCTL	15	19	20	16	103	97	13	72	NConv	Generation Re-dispatch
Herndon-Bullard #1 115 kV Line	P2-1:A14:91:_HERNDON-BULLARD #1 115KV [1760] (HERNDON-PNDLJ1)	P2	Bus/Breaker	126	71	83	14	53	14	67	52	73	Project:Herndon-Bullard line recondutoring
	P2-2:A14:46:_HERNDON 115KV SECTION 1D	P2	Bus/Breaker	125	71	83	14	54	14	67	52	72	Project:Herndon-Bullard line recondutoring
Herndon-Bullard #2 115 kV Line	P2-1:A14:90:_HERNDON-BULLARD #2 115KV [1770] (HERNDON-PNDLJ2)	P2	Bus/Breaker	103	58	65	13	43	10	61	42	59	Project:Herndon-Bullard line recondutoring
	P2-2:A14:47:_HERNDON 115KV SECTION 2D	P2	Bus/Breaker	104	59	67	13	43	10	61	42	60	Project:Herndon-Bullard line recondutoring
	P2-3:A14:67:_HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2	Bus/Breaker	104	59	67	13	43	10	61	42	60	Project:Herndon-Bullard line recondutoring
Herndon-Manchester 115 kV Line	P5-5a:A14:3:_MCCALL #1 & 2 115KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	12	33	51	42	19	NConv	Install redundant relay
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	63	65	66	NConv	57	NConv	9	13	67	Install redundant battery
	P5-5c:A14:10:_Mccall 230-115KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	98	NConv	NConv	15	21	51	26	12	NConv	Install redundant battery
	P1-2:A14:77:_HERNDON-BARTON 115KV [1750] & P1-2:A14:82:_WOODWARD-SHEPHERD 115KV [1895]	P6	N-1-1	<100	<100	<100	<100	<100	107	<100	<100	<100	Generation Re-dispatch
	P7-1:A14:17:_HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7	DCTL	81	77	79	35	17	100	12	30	80	Generation Re-dispatch
Herndon-Woodward 115 kV Line	P1-2:A14:79:_HERNDON-MANCHESTER 115KV [1780] & P1-2:A14:55:_BARTON-AIRWAYS-SANGER 115KV [1060]	P6	N-1-1	<100	<100	<100	<100	<100	105	<100	<100	<100	Generation Re-dispatch
	P7-1:A14:16:_HERNDON-BARTON 115KV [1750] & HERNDON-MANCHESTER 115KV [1780]	P7	DCTL	90	86	95	19	41	117	16	41	87	Generation Re-dispatch
	P7-1:A14:25:_HERNDON-BARTON 115KV [1750] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7	DCTL	75	70	79	21	49	117	8	49	72	Generation Re-dispatch
	P7-1:A14:7:_BARTON-AIRWAYS-SANGER 115KV [1060] & MANCHESTER-AIRWAYS-SANGER 115KV [2180]	P7	DCTL	54	50	56	22	59	111	3	59	51	Generation Re-dispatch
Kerkhoff - Clovis - Sanger #1 115 kV Line (Woodward-Shepherd)	P7-1:A14:22:_HENTAP1-MUSTANGSS #1 230KV [0] & HERNDON-KEARNEY 230KV [4900]	P7	DCTL	36	37	40	5	101	68	2	86	NConv	Generation Re-dispatch
	P7-1:A14:26:_HENTAP1-MUSTANGSS #1 230KV [0] & TRANQTYSS-MCMULLN #1 230KV [0]	P7	DCTL	41	42	46	5	104	65	2	88	NConv	Generation Re-dispatch
Kingsburg-Guard 115KV	P1-2:A14:83:_MCCALL-KINGSBURG #1 115KV [2290] MOAS OPENED ON KINGS J1_KINGS J2 & P1-2:A14:88:_HENRIETTA-LEPRINO SW STA 115KV [1737]	P6	N-1-1	<100	<100	<100	<100	<100	122	<100	<100	<100	Generation Re-dispatch
Kingsriver-Sanger-Reedley 115 kV Line	P1-2:A14:63:_SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & P1-2:A14:64:_MCCALL-REEDLEY 115KV [2320] MOAS OPENED ON MC CALL_WAHTOKE	P6	N-1-1	132	127	158	<100	<100	<100	<100	<100	132	Operating solution
Las Aguilas Reactor 230KV	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	NA	0	0	NConv	NA	NConv	NA	NA	0	Install redundant battery
Lacanalillac-Panoche 230KV Line 1	P2-2:A13:3:_PANOCHES 230KV SECTION 2E	P2	Bus/Breaker	3	17	22	103	4	60	34	28	18	Generation Re-dispatch

	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	41	61	70	NConv	147	NConv	100	106	63	Install redundant battery	
Lasaguillass-Panoche 230kV Line 2	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	41	61	70	NConv	148	NConv	101	107	64	Install redundant battery	
Le Grand-Chowchilla 115 kV Line	P2-4:A14:19:_HERNDON 115KV - SECTION 1D & 2D	P2	Bus/Breaker	52	99	97	53	3	56	5	6	102	Sensitivity only	
	P2-3:A14:1:_GREGG 230KV - MIDDLE BREAKER BAY 1	P2	Bus/Breaker	9	15	33	106	10	22	23	12	26	Generation Re-dispatch	
	P1-2:A14:49:_CHOWCHILLA-KERCKHOFF 115KV [1250] MOAS OPENED ON OAKH_JCT_K1-JCT & P1-1:A13:38:_CHOWCOGN 13.80KV GEN UNIT 1	P3	G-1/N-1	<100	112	<100	<100	<100	<100	<100	<100	<100	113	Summer setup control point
	P5-5a:A14:2:_HERNDON #1 & 2 115KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundent battery/relay	52	98	97	54	3	57	6	6	101	Install redundant relay	
	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	36	69	73	NConv	13	NConv	20	26	72	Install redundant battery	
	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	44	NConv	NConv	38	29	21	2	27	NConv	Install redundant battery	
	P5-5c:A14:2:_Gregg 230kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	47	94	106	61	5	42	8	24	89	Install redundant battery	
	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	NConv	NConv	NConv	69	NConv	6	11	NConv	NConv	Install redundant battery	
Legrand-Wilson 115kV	P1-2:A14:12:_BORDEN-GREGG #2 230KV [4400] & P1-2:A14:11:_BORDEN-GREGG #1 230KV [1082]	P6	N-1-1	<100	<100	<100	106	<100	<100	<100	<100	<100	Generation Re-dispatch	
	P7-1:A13:13:_BORDEN-GREGG 230KV #1 & #2 [4400]	P7	DCTL	9	15	33	106	10	22	23	12	26	Generation Re-dispatch	
	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	NA	49	51	NConv	NA	NConv	NA	NA	51	Install redundant battery	
Los Banos-Canal-Oro Loma 70 kV Line	P1-2:A13:69:_LOS BANOS-LIVINGSTON JCT-CANAL 70KV [8940]	P1	N-1	128	31	43	17	43	25	47	44	32	Project-Los Banos 70kV reinforcement project	
Los Banos-Livingston Jct-Canal 70 kV Line	P1-2:A13:71:_LOS BANOS-MERCY SPRINGS SW STA 70KV [8929]	P1	N-1	128	34	48	7	45	18	51	45	34	Project-Los Banos 70kV reinforcement project	
	P7-1:A13:11:_LOS BANOS-PANOCHÉ #1 230KV [5030] & LOS BANOS-MERCY SPRINGS SW STA 70KV [8929]	P7	DCTL	128	34	48	9	45	20	51	45	34	Project-Los Banos 70kV reinforcement project	
Los Banos-Panoche #2 230 kV Line	P2-2:A13:2:_LOS BANOS 230KV SECTION 2D	P2	Bus/Breaker	30	4	11	75	21	85	104	74	4	Sensitivity only	
Manchester - Airways - Sanger 115 kV Line	P5-5c:A14:1:_Gates 500kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	17	7	15	70	6	71	103	78	4	Install redundant battery	
	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	27	29	29	NConv	90	NConv	24	37	30	Install redundant battery	
	P1-2:A14:9:_TRANQUILITY SW STA-KEARNEY 230KV [5380] & P1-2:A14:18:_MUSTANG SW STA-GREGG 230KV [4700]	P6	N-1-1	<100	<100	<100	<100	102	<100	<100	<100	98	<100	Generation Re-dispatch
	P1-2:A14:81:_HERNDON-WOODWARD 115KV [1790] & P1-2:A14:77:_HERNDON-BARTON 115KV [1750]	P6	N-1-1	<100	<100	<100	<100	<100	114	<100	<100	<100	<100	Generation Re-dispatch
	P7-1:A14:22:_HENTAP1-MUSTANGSS #1 230KV [0] & HERNDON-KEARNEY 230KV [4900]	P7	DCTL	43	36	42	7	121	87	19	93	NConv	Generation Re-dispatch	
	P7-1:A14:26:_HENTAP1-MUSTANGSS #1 230KV [0] & TRANQTYSS-MCMULLN1 #1 230KV [0]	P7	DCTL	49	43	50	6	125	83	19	96	NConv	Generation Re-dispatch	
	P7-1:A14:17:_HELM-MCCALL 230KV [4860] & HENTAP2-MUSTANGSS #1 230KV [0]	P7	DCTL	46	41	42	51	41	112	31	55	43	Sensitivity only	
	P7-1:A14:26:_HENTAP1-MUSTANGSS #1 230KV [0] & TRANQTYSS-MCMULLN1 #1 230KV [0]	P7	DCTL	30	23	26	8	116	89	14	86	NConv	Generation Re-dispatch	
McCall-California Ave. 115 kV Line	P1-2:A14:76:_MCCALL-WEST FRESNO #2 115KV [2370] & P1-2:A14:74:_SANGER-CALIFORNIA AVE 115KV [9130]	P6	N-1-1	114	115	109	<100	<100	<100	<100	<100	119	Operating solution	
McCall-Kingsburg #1 115 kV Line	P1-2:A14:86:_MCCALL-KINGSBURG #2 115KV [2300] & P1-2:A14:88:_HENRIETTA-LEPRINO SW STA 115KV [1737]	P6	N-1-1	<100	<100	<100	<100	<100	142	<100	<100	<100	Generation Re-dispatch	
McCall-Reedley 115 kV Line (McCall-Wahtoke)	P5-5c:A14:21:_Sanger 115kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	95	93	100	11	64	18	40	55	94	Install redundant battery	
McCall-Reedley 115 kV Line (Reedley-Wahtoke)	P5-5c:A14:21:_Sanger 115kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	120	116	118	17	90	21	55	74	118	Install redundant battery	
	P1-2:A14:63:_SANGER-REEDLEY 115KV [9140] MOAS OPENED ON PARLIER_REEDLEY & P1-2:A14:61:_KINGS RIVER-SANGER-REEDLEY 115KV [2030]	P6	N-1-1	114	109	112	<100	<100	<100	<100	<100	<100	111	Operating solution
McCall-Sanger #3 115 kV Line	P5-5c:A14:2:_Gregg 230kV Batt(Failure OF NON-REDUNDANT BATT)	P5	Non-Redundent battery/relay	94	89	109	28	43	14	41	31	84	Install redundant battery	
	P1-2:A14:18:_MUSTANG SW STA-GREGG 230KV [4700] & P1-2:A14:9:_TRANQUILITY SW STA-KEARNEY 230KV [5380]	P6	N-1-1	<100	<100	<100	<100	111	<100	<100	<100	<100	Generation Re-dispatch	
	P7-1:A14:22:_HENTAP1-MUSTANGSS #1 230KV [0] & HERNDON-KEARNEY 230KV [4900]	P7	DCTL	64	52	61	7	102	42	4	67	NConv	Generation Re-dispatch	
	P7-1:A14:26:_HENTAP1-MUSTANGSS #1 230KV [0] & TRANQTYSS-MCMULLN1 #1 230KV [0]	P7	DCTL	69	59	67	7	106	38	5	70	NConv	Generation Re-dispatch	
McCall-West Fresno 115 kV Line	P1-2:A14:70:_CALIFORNIA AVE-MCCALL 115KV [2360] & P1-2:A14:74:_SANGER-CALIFORNIA AVE 115KV [9130]	P6	N-1-1	101	102	99	<100	<100	<100	<100	<100	105	Operating solution	
Mendota-Biomass junction 70kV	P2-4:A13:5:_PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker	17	NA	NA	NA	35	NA	54	135	NA	Sensitivity only	
	P1-2:A13:61:_LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON ADERASLRJCT_DAIRYLAND & P1-2:A13:57:_PANOCHÉ-MENDOTA 115KV [3230]	P6	N-1-1	169	<100	<100	<100	106	<100	14	61	<100	Summer setup control point	
	P7-1:A13:6:_PANOCHÉ-TRANQTYSS #1 230KV [0] & PANOCHÉ-TRANQTYSS #2 230KV [0]	P7	DCTL	0	NA	NA	NA	56	NA	46	139	NA	Sensitivity only	
	P2-4:A13:5:_PANOCHÉ 230KV - SECTION 1D & 2D	P2	Bus/Breaker	23	NA	NA	NA	26	NA	26	126	NA	Summer setup control point	

Oro loma-Poso Junction 70kV line	P2-3:A13:34:_PANOCH1 - 1D 115KV & PANOCH-EXCELSIOR SW STA #1 LINE	P2	Bus/Breaker	93	115	105	98	60	103	105	53	117	Summer setup control point	
	P2-3:A13:35:_PANOCH1 - 1D 115KV & PANOCH-MENDOTA LINE	P2	Bus/Breaker	93	115	105	98	60	99	103	53	117	Summer setup control point	
	P2-3:A13:37:_MENDOTA 115KV - MIDDLE BREAKER BAY 3	P2	Bus/Breaker	101	121	117	31	66	48	44	58	123	Summer setup control point	
	P2-4:A13:13:_PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2	Bus/Breaker	14	89	80	96	27	100	107	9	91	Sensitivity only	
	P1-2:A13:57:_PANOCH-MENDOTA 115KV [3230] & P1-1A13:20:_WRIGHTFRMNSL 0.55KV GEN UNIT 1	P3	G-1/N-1	<100	<100	<100	100	<100	100	99	<100	<100	Generation Re-dispatch	
PANOCH2-EXCELSIORSS 115kV Line	P5-5c:A13:4:_Panoche 230-115KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	31	94	83	104	17	105	94	45	96	Install redundant battery	
	P1-2:A13:61:_LE GRAND-DAIRYLAND 115KV [2100] MOAS OPENED ON ADEASLRJCT DAIRYLND & P1-2:A13:57:_PANOCH-MENDOTA	P6	N-1-1	<100	<100	<100	<100	<100	135	<100	46	100	<100	Generation Re-dispatch
	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-2:A14:51:_PANOCH-EXCELSIOR SW STA #1 115KV [3250] MOAS OPENED ON	P6	N-1-1	112	113	<100	<100	<100	<100	95	<100	<100	114	Project:Gates new bank addition project
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	81	29	28	NConv	193	NConv	19	48	30	Install redundant battery	
	P5-5c:A14:1:_Gates 500KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	25	18	17	157	15	125	63	75	19	Install redundant battery	
Panoche-Gates 230kV Line No 2	P2-3:A14:25:_GATES E 230KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	17	12	32	105	12	97	53	74	12	Generation Re-dispatch	
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	86	31	30	NConv	205	NConv	20	51	32	Install redundant battery	
	P5-5c:A14:1:_Gates 500KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	26	19	19	166	16	133	67	79	21	Install redundant battery	
Panoche-Mendota 115 kV Line	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	34	NConv	NA	Project:Wilson 115kV reinforcement project	
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery/relay	NConv	NA	NA	NA	NConv	NA	34	NConv	NA	Install redundant relay	
	P5-5c:A13:2:_Wilson 230-115KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	NConv	NConv	NConv	44	NConv	74	60	NConv	NConv	Install redundant battery	
Panoche-Schindler #1 115kV Line	P1-2:A14:50:_PANOCH-EXCELSIOR SW STA #2 115KV [3260] & P1-2:A14:88:_HENRIETTALEPRINO SW STA 115KV [1737]	P6	N-1-1	<100	<100	<100	<100	<100	100	<100	<100	<100	Generation Re-dispatch	
	P1-2:A14:50:_PANOCH-EXCELSIOR SW STA #2 115KV [3260] & P1-3:A14:14:_GATES D 230/70KV TB 5	P6	N-1-1	110	107	<100	<100	<100	97	<100	<100	108	Project:Gates new bank addition project	
Panoche-Schindler #2 115 kV Line	P2-2:A13:24:_PANOCH1 115KV SECTION 1D	P2	Bus/Breaker	30	16	46	92	30	98	102	13	17	Sensitivity only	
	P2-3:A13:33:_PANOCH1 - 1D 115KV & PANOCH-CAL PEAK-STARWOOD LINE	P2	Bus/Breaker	30	16	46	92	30	98	102	13	17	Sensitivity only	
	P2-3:A13:34:_PANOCH1 - 1D 115KV & PANOCH-EXCELSIOR SW STA #1 LINE	P2	Bus/Breaker	30	16	46	92	30	98	102	13	17	Sensitivity only	
	P2-3:A13:35:_PANOCH1 - 1D 115KV & PANOCH-MENDOTA LINE	P2	Bus/Breaker	30	16	46	92	30	98	102	13	17	Sensitivity only	
	P2-3:A14:60:_EXCELSIORSS 115KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	50	55	5	75	50	63	112	50	55	Sensitivity only	
P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-2:A14:52:_CANTUA-EXCELSIORSS 115KV [0] MOAS OPENED ON PANOCH1_KAMM_JCT	P6	N-1-1	<100	<100	<100	87	<100	100	100	<100	<100	Sensitivity only		
Panoche-Tranquility 230kV Line No 1	P2-3:A13:7:_TRANQLTYSS 230KV - MIDDLE BREAKER BAY 3	P2	Bus/Breaker	29	NA	NA	NA	54	NA	7	107	NA	Sensitivity only	
Panoche-Tranquility 230kV Line No 2	P2-2:A13:5:_PANOCH 230KV SECTION 1D	P2	Bus/Breaker	6	NA	NA	NA	50	NA	19	101	NA	Sensitivity only	
Reedley 115/70 kV Transformer #4	P1-3:A14:42:_REEDLEY 115/70KV TB 2 & P1-1A14:110:_FRIANTDAM 6.60KV GEN UNIT 2	P3	G-1/N-1	101	98	<100	<100	<100	<100	<100	<100	100	Project:Reedley 70kV reinforcement project	
Reedley-Dinuba 70 kV Line	P1-2:A14:124:_REEDLEY-OROSI 70KV [9060]	P1	N-1	122	120	28	19	54	26	59	54	123	Project:Reedley 70kV reinforcement project	
Reedley-Orosi 70 kV Line	P1-2:A14:123:_REEDLEY-DINUBA #1 70KV [9050]	P1	N-1	121	119	39	19	56	23	60	56	122	Project:Reedley 70kV reinforcement project	
Sanger-Reedley 115 kV Line	P1-2:A14:61:_KINGS RIVER-SANGER-REEDLEY 115KV [2030] & P1-2:A14:64:_MCCALL-REEDLEY 115KV [3230] MOAS OPENED ON MC CALL_WAHTOKE	P6	N-1-1	105	103	115	<100	<100	<100	<100	<100	105	Operating solution	
Schindler 115/70 kV Transformer #1	P2-4:A13:13:_PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2	Bus/Breaker	24	26	64	86	15	100	118	15	26	Generation Re-dispatch	
	P5-5c:A13:4:_Panoche 230-115KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	74	76	64	59	39	100	66	43	76	Install redundant battery	
	P1-3:A14:28:_HELM 230/70KV TB 1 & P1-3:A14:14:_GATES D 230/70KV TB 5	P6	N-1-1	112	131	<100	<100	<100	89	<100	<100	132	Project:Gates new bank addition project	
Schindler-Coalinga #2 70 kV Line	P7-1:A14:10:_PANOCH-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCH2 115KV [3231]	P7	DCTL	74	76	64	60	39	100	67	39	76	Generation Re-dispatch	
	P2-4:A13:13:_PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2	Bus/Breaker	7	15	30	66	15	73	114	27	15	Sensitivity only	
	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-1A14:114:_CHV.COAL 9.11KV GEN UNIT 1	P3	G-1/N-1	101	100	<100	<100	<100	<100	<100	<100	<100	101	Project:Gates new bank addition project
	P5-5a:A14:1:_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery/relay	98	97	136	23	49	52	30	70	98	Install redundant relay	
	P5-5c:A13:4:_Panoche 230-115KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	25	18	29	50	55	69	108	74	19	Install redundant battery	
	P5-5c:A14:14:_Gates 230-70KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	111	116	175	14	50	53	72	86	116	Install redundant battery	
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	32	12	30	NConv	102	NConv	24	28	12	Install redundant battery	
P5-5c:A14:14:_Gates 230-70KV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	84	89	144	29	24	74	42	62	89	Install redundant battery		
Schindler-Coalinga #2 70 kV Line	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-1A14:114:_CHV.COAL 9.11KV GEN UNIT 1	P6	N-1-1	100	100	<100	<100	<100	<100	<100	<100	101	Project:Gates new bank addition project	
	P1-3:A14:28:_HELM 230/70KV TB 1	P1	N-1	102	67	79	12	20	100	100	20	70	Summer setup control point	
	P2-2:A14:13:_HELM 230KV SECTION 1D	P2	Bus/Breaker	101	67	80	12	20	100	100	20	70	Summer setup control point	
P2-3:A14:137:_SCHINDLER 115KV - RING R1 & R3	P2	Bus/Breaker	83	78	102	41	32	76	37	49	78	Summer setup control point		

Schindler-Crescent 70kV line	P2-3:A14:60:_EXCELSIORSS 115KV - MIDDLE BREAKER BAY 2	P2	Bus/Breaker	84	78	103	41	32	76	37	50	78	Summer setup control point
	P2-4:A13:13:_PANOCHE1 SECTION 1D & PANOCHE2 SECTION 2D 115KV	P2	Bus/Breaker	40	48	107	107	51	129	62	32	48	Summer setup control point
	P2-4:A13:5:_PANOCHE 230KV - SECTION 1D & 2D	P2	Bus/Breaker	40	NA	NA	NA	100	NA	67	192	NA	Summer setup control point
	P1-3:A14:28:_HELM 230/70KV TB 1 & P1-1:A14:34:_FSNOCGNBESS2 0.69KV GEN UNIT 5	P3	G-1/N-1	<100	<100	<100	<100	<100	100	101	<100	<100	Sensitivity only
	P5-5a:A14:1:_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	81	79	147	11	12	67	16	11	78	Install redundant relay
	P5-5c:A13:4:_Panoche 230-115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	85	90	104	94	106	141	34	137	90	Install redundant battery
	P5-5c:A13:5:_Tranquility SW STA 230KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	69	44	35	129	42	97	78	31	49	Install redundant battery
	P5-5c:A14:14:_Gates 230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	34	42	102	18	15	33	18	14	41	Install redundant battery
	P5-5c:A14:27:_Excelsior SW STA 115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	83	78	103	42	32	77	35	49	77	Install redundant battery
	P1-3:A14:28:_HELM 230/70KV TB 1 & P1-1:A14:34:_FSNOCGNBESS2 0.69KV GEN UNIT 5	P6	N-1-1	<100	<100	<100	<100	<100	100	101	<100	<100	Sensitivity only
Schindler-Huron-Gates 70 kV Line	P7-1:A13:14:_EXCELSIORSS-PANOCHE1 115KV [3250] & EXCELSIORSS-PANOCHE2 115KV [3231]	P7	DCTL	79	75	95	82	15	126	16	45	75	Generation Re-dispatch
	P7-1:A13:6:_PANOCHE-TRANQLTYSS #1 230KV [0] & PANOCHE-TRANQLTYSS #2 230KV [0]	P7	DCTL	29	NA	NA	NA	113	NA	60	200	NA	Generation Re-dispatch
	P7-1:A14:10:_PANOCHE-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHE2 115KV [3231]	P7	DCTL	99	93	108	85	36	130	18	58	93	Continue to monitor
	P7-1:A14:23:_TRANQLTYSS-HELM #1 230KV [0] & TRANQLTYSS-MCMULLN1 #1 230KV [0]	P7	DCTL	79	45	32	128	39	98	79	20	50	Continue to monitor
	P1-3:A14:14:_GATES D 230/70KV TB 5	P1	N-1	111	93	25	62	55	100	23	64	94	Project:Gates new bank addition project
	P2-2:A14:21:_GATES D 230KV SECTION 2D	P2	Bus/Breaker	112	94	25	66	56	104	25	66	95	Project:Gates new bank addition project
	P2-4:A14:8:_GATES D 230KV - SECTION 2D & 1D	P2	Bus/Breaker	120	102	22	74	60	115	32	73	103	Project:Gates new bank addition project
	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-1:A14:114:_CHV.COAL 9.11KV GEN UNIT 1	P3	G-1/N-1	<100	101	<100	<100	<100	<100	<100	<100	102	Project:Gates new bank addition project
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	8	14	33	NConv	159	NConv	9	21	14	Install redundant battery
	P5-5c:A13:4:_Panoche 230-115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	109	85	98	30	130	67	73	156	86	Install redundant battery
Schindler-PaigeSolar junction 70kV	P5-5a:A14:1:_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	122	103	136	76	46	117	23	64	104	Install redundant relay
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	63	22	26	NConv	132	NConv	9	32	22	Install redundant battery
	P5-5c:A13:4:_Panoche 230-115KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	43	48	34	3	105	27	81	129	48	Install redundant battery
	P5-5c:A14:1:_Gates 500KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	26	15	7	101	18	84	17	45	16	Install redundant battery
	P1-2:A14:24:_MUSTANG SW STA-MCCALL 230KV [4710] & P1-2:A14:18:_MUSTANG SW STA-GREGG 230KV [4700]	P6	N-1-1	<100	<100	<100	<100	102	<100	<100	<100	<100	Generation Re-dispatch
	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-1:A14:114:_CHV.COAL 9.11KV GEN UNIT 1	P6	N-1-1	<100	101	<100	<100	<100	<100	<100	<100	102	Project:Gates new bank addition project
Storey-Borden 230KV Line No 1	P7-1:A14:10:_PANOCHE-SCHINDLER #1 115KV [3250] & EXCELSIORSS-PANOCHE2 115KV [3231]	P7	DCTL	102	83	96	33	65	73	44	49	85	Project:Gates new bank addition project
	P2-4:A14:8:_GATES D 230KV - SECTION 2D & 1D	P2	Bus/Breaker	96	101	56	43	66	79	20	83	102	Project:Gates new bank addition project
	P1-3:A14:14:_GATES D 230/70KV TB 5 & P1-1:A14:114:_CHV.COAL 9.11KV GEN UNIT 1	P3	G-1/N-1	101	104	<100	<100	<100	<100	<100	<100	105	Project:Gates new bank addition project
	P5-5a:A14:1:_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-Redundent battery/relay	100	103	134	45	50	83	17	71	103	Install redundant relay
Tivy Valley-Reedley 70 kV Line	P5-5c:A14:14:_Gates 230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	112	120	170	31	51	83	35	87	120	Install redundant battery
	P5-5c:A13:1:_Los Banos 500-230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	12	14	10	NConv	77	NConv	103	109	16	Install redundant battery
	P1-2:A13:81:_BORDEN-COPPERMINE 70KV [8500] MOAS OPENED ON BORDEN_CASSIDY	P1	N-1	101	101	101	5	48	50	32	26	101	Summer setup control point
	P5-5c:A13:9:_Borden 230-70KV Batt(Failure OF NON-REDUNDENT BATT)	P5	Non-Redundent battery/relay	100	100	NA	5	48	50	32	25	100	Install redundant battery
	P1-3:A14:43:_REEDLEY 115/70KV TB 4 & P1-3:A14:42:_REEDLEY 115/70KV TB 2	P6	N-1-1	<100	<100	<100	<100	114	<100	120	114	<100	Generation Re-dispatch
	Tomatak-Mendota 70kV line	P2-1:A13:49:_PANOCHE-ORO LOMA 115KV [3240] (PANOCHE-PANOCHE2)	P2	Bus/Breaker	108	72	82	40	89	27	73	68	73
P2-1:A13:50:_PANOCHE-ORO LOMA 115KV [3240] (PANOCHE-HAMMONDS)		P2	Bus/Breaker	101	70	78	36	82	23	68	62	71	Summer setup control point
P2-2:A13:24:_PANOCHE1 115KV SECTION 1D		P2	Bus/Breaker	37	50	17	88	9	76	103	11	52	Summer setup control point
P2-2:A13:25:_PANOCHE2 115KV SECTION 2D		P2	Bus/Breaker	107	72	82	42	89	29	76	68	73	Summer setup control point
P2-3:A13:33:_PANOCHE1 - 1D 115KV & PANOCHE-CAL PEAK-STARWOOD LINE		P2	Bus/Breaker	37	50	17	88	9	76	103	11	52	Summer setup control point
P2-3:A13:34:_PANOCHE1 - 1D 115KV & PANOCHE-EXCELSIOR SW STA #1 LINE		P2	Bus/Breaker	37	50	17	88	9	76	103	11	52	Summer setup control point
P2-3:A13:35:_PANOCHE1 - 1D 115KV & PANOCHE-MENDOTA LINE		P2	Bus/Breaker	37	50	17	88	9	74	101	11	52	Summer setup control point
P2-3:A13:40:_PANOCHE2 - 2D 115KV & PANOCHE-EXCELSIOR SW STA #2 LINE		P2	Bus/Breaker	105	71	82	41	88	29	76	67	72	Summer setup control point

	P2-4:A13:13:_PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2	Bus/Breaker	60	1	56	87	49	75	105	39	2	Summer setup control point
	P1-2:A13:57:_PANOCH-MENDOTA 115KV [3230] & P1-2:A14:10:_TRANQUILLITY SW STA-HELM 230KV [5370]	P6	N-1-1	<100	<100	<100	<100	<100	<100	100	<100	<100	Summer setup control point
Warnerville - Wilson 230 kV Line	P2-4:A14:33:_HELMS PP2 SECTION 1E & HELMS PP3 SECTION 1F 230KV	P2	Bus/Breaker	86	97	75	45	7	74	12	37	100	Sensitivity only
	P5-5a:A14:1:_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery/relay	15	32	7	75	51	51	104	85	37	Install redundant relay
	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	76	111	93	NConv	105	NConv	162	131	118	Install redundant battery
	P5-5c:A13:4:_Panoche 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	37	48	27	71	45	56	91	109	52	Install redundant battery
	P5-5c:A14:14:_Gates 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	13	32	8	75	50	51	104	84	35	Install redundant battery
	P7-1:A14:8:_HELMS-GREGG #1 230KV [4870] & HELMS-GREGG #2 230KV [4880]	P7	DCTL	86	97	75	45	7	74	12	37	100	Sensitivity only
Wilson Reactor 230kV	P5-5a:A14:1:_GATES SECTION D & E 230 KV BUS (FAILURE OF NON-REDUNDANT RELAY)	P5	Non-Redundant battery/relay	15	32	7	0	0	0	103	0	NA	Install redundant relay
	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	75	110	92	NConv	0	NConv	161	130	117	Install redundant battery
	P5-5c:A14:14:_Gates 230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	13	32	8	0	0	0	103	0	35	Install redundant battery
	car repair center	P5	Non-Redundant battery/relay	NA	0	0	70	45	56	NA	108	0	Install redundant battery
Wilson-Atwater #2 115 kV Line	P1-2:A13:51:_EL CAPITAN-WILSON 115KV [1510] & P1-2:A13:41:_ATWATER-LIVINGSTON-MERCED 115KV [1030] MOAS OPENED ON ATWATR J MERCED	P6	N-1-1	115	<100	<100	<100	<100	<100	<100	<100	<100	Project:Wilson 115kV reinforcement project
	P1-2:A13:41:_ATWATER-LIVINGSTON-MERCED 115KV [1030] MOAS OPENED ON ATWATR J MERCED & P1-2:A13:51:_EL CAPITAN-WILSON 115KV [1510]	P6	N-1-1	<100	118	153	<100	<100	<100	<100	<100	<100	Operating solution
Wilson-Elcapiton 115kV	P1-2:A13:41:_ATWATER-LIVINGSTON-MERCED 115KV [1030] MOAS OPENED ON ATWATR J MERCED & P1-2:A13:49:_WILSON-ATWATER #2 115KV [4160]	P6	N-1-1	<100	107	136	<100	<100	<100	<100	<100	109	Operating solution
Wilson-Le Grand 115 kV Line	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	16	26	25	NConv	72	NConv	34	8	28	Install redundant battery
Wilson-Melones 230kV Line No 1	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	47	63	55	NConv	84	NConv	44	142	66	Install redundant battery
	P5-5c:A13:4:_Panoche 230-115kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	32	40	30	42	59	30	16	123	41	Install redundant battery
	P1-2:A14:18:_MUSTANG SW STA-GREGG 230KV [4700] & P1-2:A14:9:_TRANQUILLITY SW STA-KEARNEY 230KV [5380]	P6	N-1-1	<100	<100	<100	<100	<100	<100	<100	102	<100	Sensitivity only
Wilson-Mercer #1 115 kV Line	P2-2:A13:17:_WILSON B 115KV SECTION 2D	P2	Bus/Breaker	110	NA	NA	NA	45	NA	50	46	NA	Project:Wilson 115kV reinforcement project
	P2-3:A13:29:_WILSON B - 2D 115KV & WILSON-ORO LOMA LINE	P2	Bus/Breaker	110	NA	NA	NA	45	NA	50	46	NA	Project:Wilson 115kV reinforcement project
	P1-2:A13:52:_WILSON-MERCER #2 115KV [4190] & P1-2:A13:51:_EL CAPITAN-WILSON 115KV [1510]	P6	N-1-1	106	<100	<100	<100	<100	<100	<100	<100	<100	Project:Wilson 115kV reinforcement project
	P1-2:A13:42:_EXCHEQUER-LE GRAND 115KV [1560] & P1-2:A13:52:_WILSON-MERCER #2 115KV [4190]	P6	N-1-1	<100	99	<100	<100	<100	<100	<100	<100	101	Sensitivity only
Wilson-Mercer #2 115 kV Line	P2-2:A13:16:_WILSON A 115KV SECTION 1D	P2	Bus/Breaker	104	NA	NA	NA	36	NA	48	37	NA	Project:Wilson 115kV reinforcement project
	P2-3:A13:28:_WILSON A - 1D 115KV & WILSONSTCOM-WILSON A #1 LINE	P2	Bus/Breaker	104	NA	NA	NA	36	NA	48	37	NA	Project:Wilson 115kV reinforcement project
	P1-2:A13:51:_EL CAPITAN-WILSON 115KV [1510] & P1-2:A13:50:_WILSON-MERCER #1 115KV [4180]	P6	N-1-1	110	<100	<100	<100	<100	<100	<100	<100	<100	Project:Wilson 115kV reinforcement project
Wilson-Mercer 115kV	P1-2:A13:42:_EXCHEQUER-LE GRAND 115KV [1560] & P1-2:A13:50:_WILSON-MERCER #1 115KV [4180]	P6	N-1-1	<100	102	<100	<100	<100	<100	<100	<100	104	Operating solution
Wilson-Oro Loma 115 kV Line	P2-4:A13:13:_PANOCH1 SECTION 1D & PANOCH2 SECTION 2D 115KV	P2	Bus/Breaker	101	63	69	31	48	8	32	50	NA	Project:Wilson-Oro loma Reconductoring
	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	10	49	51	NConv	106	NConv	64	30	50	Install redundant battery
	P1-2:A14:18:_MUSTANG SW STA-GREGG 230KV [4700] & P1-2:A14:9:_TRANQUILLITY SW STA-KEARNEY 230KV [5380]	P6	N-1-1	<100	<100	<100	<100	101	<100	<100	<100	<100	Generation Re-dispatch
Wilson-Storey 230kV Line No 1	P5-5c:A13:1:_Los Banos 500-230-70kV Batt(FAILURE OF NON-REDUNDANT BATT)	P5	Non-Redundant battery/relay	18	35	29	NConv	77	NConv	106	123	39	Install redundant battery
	P1-2:A14:9:_TRANQUILLITY SW STA-KEARNEY 230KV [5380] & P1-2:A14:18:_MUSTANG SW STA-GREGG 230KV [4700]	P6	N-1-1	<100	<100	<100	<100	110	<100	<100	100	<100	Generation Re-dispatch
	P7-1:A13:6:_PANOCH-TRANQTYSS #1 230KV [0] & PANOCH-TRANQTYSS #2 230KV [0]	P7	DCTL	23	NA	NA	NA	48	NA	56	105	NA	Sensitivity only
	P7-1:A14:26:_HENTAP1-MUSTANGSS #1 230KV [0] & TRANQTYSS-MCMULLN1 #1 230KV [0]	P7	DCTL	31	34	27	77	87	18	51	101	NConv	Sensitivity only

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2029 Summer-Off Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2026 SP Heavy Renewable & Min Gas Gen	2026 OP Sensitivity	2029 SP High CEC Forecast	
AIRWAYS 115 kV	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.95	0.95	0.90	1.08	1.03	1.09	1.01	1.03	0.95	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	0.94	0.94	0.88	1.09	1.03	1.10	1.03	1.03	0.96	Add redundant battery
ATWATER 115 kV	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Sensitivity only
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Add redundant relay
	P5-5c:A13:2:_Wilson 230-115kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	NConv	NConv	NConv	1.21	NConv	1.21	0.25	NConv	NConv	Add redundant battery
BARTON 115 kV	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.94	0.95	0.89	1.08	1.02	1.09	1.00	1.03	0.94	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	0.94	0.94	0.87	1.09	1.02	1.10	1.03	1.03	0.95	Add redundant battery
BIOLA 70 kV	P5-5c:A14:2:_Gregg 230kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	1.01	1.01	0.90	1.05	1.05	1.06	1.04	1.05	1.03	Add redundant battery
BULLARD 115 kV	P2-2:A14:47:_HERNDON 115KV SECTION 2D	P2	Bus/Breaker	0.94	0.95	0.90	1.07	1.03	1.06	1.01	1.03	0.94	Continue to monitor
	P2-3:A14:67:_HERNDON - 2D 115KV & HERNDON-WOODWARD LINE	P2	Bus/Breaker	0.94	0.95	0.90	1.07	1.03	1.06	1.01	1.03	0.94	Continue to monitor
	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.91	0.91	0.84	1.08	1.03	1.08	0.99	1.03	0.91	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	0.91	0.91	0.82	1.11	1.03	1.12	1.02	1.03	0.93	Add redundant battery
CAL AVE 115 kV	P1-2:A14:74:_SANGER-CALIFORNIA AVE 115KV [9130] & P1-2:A14:76:_MCCALL-WEST FRESNO #2 115KV [2370]	P6	N-1-1	0.77	0.77	0.78	>0.95	NA	>0.95	0.88	NA	0.76	Potential voltage support project
CHWCHLLA 115 kV	P1-2:A13:36:_LE GRAND-CHOWCHILLA 115KV [2110]	P1	N-1	0.92	0.92	0.84	1.09	1.02	1.10	1.00	1.02	0.92	Continue to monitor
	P2-1:A13:15:_LE GRAND-CHOWCHILLA 115KV [2110] (CHWCHLLA-CERTAN T)	P2	Bus/Breaker	0.92	0.92	0.84	1.09	1.02	1.10	1.00	1.02	0.92	Continue to monitor
	P2-3:A13:26:_LE GRAND - MA 115KV & LE GRAND-CHOWCHILLA LINE	P2	Bus/Breaker	0.92	0.92	0.84	1.09	1.02	1.09	1.00	1.02	0.92	Continue to monitor
	P5-5c:A13:11:_Le Grand 115kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	NA	NA	0.84	NA	NA	NA	NA	NA	NA	Add redundant battery
CRESSEY 115 kV	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Sensitivity only
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Add redundant relay
	P5-5c:A13:2:_Wilson 230-115kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	NConv	NConv	NConv	1.21	NConv	1.21	0.25	NConv	NConv	Add redundant battery
DINUBA 70 kV	P5-5c:A14:10:_Mccall 230-115kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	0.89	NConv	NConv	1.14	1.03	1.04	1.04	1.03	NConv	Add redundant battery
EL CAPTN 115 kV	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Sensitivity only
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Add redundant relay
	P5-5c:A13:2:_Wilson 230-115kV Batt(FAILURE OF NON-REDUNDENT BATT)	P5	Non-redundant relay/battery	NConv	NConv	NConv	1.21	NConv	1.21	0.25	NConv	NConv	Add redundant battery
EXCHEOUR 70 kV	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.73	NConv	NA	Sensitivity only
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (FAILURE OF NON-REDUNDENT RELAY)	P5	Non-redundant relay/battery	NConv	NA	NA	NA	NConv	NA	0.73	NConv	NA	Add redundant relay

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2029 Summer-Off Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2026 SP Heavy Renewable & Min Gas Gen	2026 OP Sensitivity	2029 SP High CEC Forecast	
	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure of non-redundent batt)	P5	Non-redundant relay/battery	NConv	NConv	NConv	1.06	NConv	1.03	0.73	NConv	NConv	Add redundant battery
GALLO 115 kV	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Sensitivity only
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (Failure of non-redundent relay)	P5	Non-redundant relay/battery	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Add redundant relay
	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure of non-redundent batt)	P5	Non-redundant relay/battery	NConv	NConv	NConv	1.21	NConv	1.21	0.25	NConv	NConv	Add redundant battery
HAMMONDS 115 kV	P2-1:A13:49:_PANOCHÉ-ORO LOMA 115KV [3240] (PANOCHÉJ-PANOCHÉ2)	P2	Bus/Breaker	0.91	0.94	0.87	1.03	0.97	1.04	0.98	0.98	0.94	Continue to monitor
	P2-1:A13:50:_PANOCHÉ-ORO LOMA 115KV [3240] (PANOCHÉJ-HAMMONDS)	P2	Bus/Breaker	0.95	0.98	0.88	1.04	0.99	1.05	1.01	1.00	0.98	Continue to monitor
	P2-2:A13:25:_PANOCHÉ2 115KV SECTION 2D	P2	Bus/Breaker	0.91	0.94	0.87	1.03	0.97	1.04	0.97	0.98	0.94	Continue to monitor
	P2-3:A13:40:_PANOCHÉ2 - 2D 115KV & PANOCHÉ-EXCELSIOR SW STA #2 LINE	P2	Bus/Breaker	0.91	0.94	0.87	1.03	0.97	1.04	0.98	0.98	0.94	Continue to monitor
	P2-4:A13:13:_PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker	0.91	0.94	0.87	1.02	0.97	1.03	0.96	0.98	0.94	Continue to monitor
HERNDON 115 kV	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.93	0.93	0.87	1.07	1.03	1.08	1.00	1.03	0.93	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(Failure of non-redundent batt)	P5	Non-redundant relay/battery	0.93	0.93	0.86	1.10	1.04	1.11	1.04	1.04	0.95	Add redundant battery
HERNDON 230 kV	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.92	0.92	0.87	1.05	1.01	1.05	0.99	1.01	0.92	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(Failure of non-redundent batt)	P5	Non-redundant relay/battery	0.90	0.90	0.83	1.08	1.01	1.08	1.01	1.01	0.93	Add redundant battery
KEARNEY 230 kV	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.93	0.93	0.89	1.04	1.00	1.04	0.99	1.01	0.93	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(Failure of non-redundent batt)	P5	Non-redundant relay/battery	0.91	0.91	0.84	1.06	1.00	1.06	1.01	1.01	0.93	Add redundant battery
LIVINGSTON 115 kV	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Sensitivity only
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (Failure of non-redundent relay)	P5	Non-redundant relay/battery	NConv	NA	NA	NA	NConv	NA	0.25	NConv	NA	Add redundant relay
	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure of non-redundent batt)	P5	Non-redundant relay/battery	NConv	NConv	NConv	1.21	NConv	1.21	0.25	NConv	NConv	Add redundant battery
MERCED 115 kV	P2-4:A13:12:_WILSON A SECTION 1D & WILSON B SECTION 2D 115KV	P2	Bus/Breaker	NConv	NA	NA	NA	NConv	NA	0.26	NConv	NA	Sensitivity only
	P5-5a:A13:1:_WILSON 115 KV #1 & #2 BUS (Failure of non-redundent relay)	P5	Non-redundant relay/battery	NConv	NA	NA	NA	NConv	NA	0.26	NConv	NA	Add redundant relay
	P5-5c:A13:2:_Wilson 230-115kV Batt(Failure of non-redundent batt)	P5	Non-redundant relay/battery	NConv	NConv	NConv	1.20	NConv	1.19	0.27	NConv	NConv	Add redundant battery
ORO LOMA 115 kV	P2-1:A13:49:_PANOCHÉ-ORO LOMA 115KV [3240] (PANOCHÉJ-PANOCHÉ2)	P2	Bus/Breaker	0.91	0.95	0.88	1.03	0.98	1.04	0.98	0.99	0.94	Continue to monitor
	P2-1:A13:50:_PANOCHÉ-ORO LOMA 115KV [3240] (PANOCHÉJ-HAMMONDS)	P2	Bus/Breaker	0.95	0.98	0.89	1.04	1.00	1.05	1.01	1.00	0.98	Continue to monitor
	P2-2:A13:25:_PANOCHÉ2 115KV SECTION 2D	P2	Bus/Breaker	0.91	0.95	0.88	1.03	0.98	1.04	0.98	0.99	0.94	Continue to monitor
	P2-3:A13:40:_PANOCHÉ2 - 2D 115KV & PANOCHÉ-EXCELSIOR SW STA #2 LINE	P2	Bus/Breaker	0.91	0.95	0.88	1.03	0.98	1.04	0.98	0.99	0.94	Continue to monitor
	P2-4:A13:13:_PANOCHÉ1 SECTION 1D & PANOCHÉ2 SECTION 2D 115KV	P2	Bus/Breaker	0.91	0.95	0.88	1.02	0.97	1.03	0.97	0.98	0.95	Continue to monitor

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)						Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2029 Summer-Off Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2026 SP Heavy Renewable & Min Gas Gen	2026 OP Sensitivity	2029 SP High CEC Forecast	
OROSI 70 kV	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure of Non-Redundant Batt)	P5	Non-redundant relay/battery	0.89	NConv	NConv	1.15	1.03	1.04	1.03	1.03	NConv	Add redundant battery
REEDLEY 115 kV	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure of Non-Redundant Batt)	P5	Non-redundant relay/battery	0.87	NConv	NConv	1.08	0.99	1.10	0.99	0.99	NConv	Add redundant battery
SHEPHERD 115 kV	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.96	0.96	0.89	1.08	1.04	1.09	1.02	1.04	0.95	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(Failure of Non-Redundant Batt)	P5	Non-redundant relay/battery	0.95	0.95	0.88	1.10	1.03	1.11	1.03	1.04	0.96	Add redundant battery
WAHTOKE 115 kV	P5-5c:A14:10:_Mccall 230-115kV Batt(Failure of Non-Redundant Batt)	P5	Non-redundant relay/battery	0.87	NConv	NConv	1.08	0.99	1.11	0.99	0.99	NConv	Add redundant battery
WOODWARD 115 kV	P2-4:A14:1:_HERNDON 230KV - SECTION 1E & 2E	P2	Bus/Breaker	0.95	0.95	0.88	1.08	1.04	1.09	1.01	1.04	0.94	Continue to monitor
	P5-5c:A14:2:_Gregg 230kV Batt(Failure of Non-Redundant Batt)	P5	Non-redundant relay/battery	0.94	0.94	0.86	1.10	1.03	1.11	1.03	1.04	0.96	Add redundant battery
WST FRSO 115 kV	P1-2:A14:74:_SANGER-CALIFORNIA AVE 115KV [9130] & P1-2:A14:76:_MCCALL-WEST FRESNO #2 115KV [2370]	P6	N-1-1	0.75	0.75	0.76	>0.95	NA	>0.95	0.87	NA	0.74	Potential voltage support project



Substation	Contingency	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)						Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2029 Summer-Off Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2026 SP Heavy Renewable & Min Gas Gen	2026 OP Sensitivity	2029 SP High CEC Forecast	
CHWCHLLA 115 kV	P1-2:A13:36:_LE GRAND-CHOWCHILLA 115KV [2110]	P1	N-1	<8	<8	14	<8	<8	<8	<8	<8	<8	Continue to monitor

Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			2026 Spring Off-Peak	2029 Summer Peak	2034 Summer Peak	2026 OP Sensitivity	2029 SP High CEC Forecast	
"P1-2 - Line GREGG to HERNDON 230 kV ckt 1 with RAS"	P1	N-1	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Violation occurred at non-bes bus.
"P1-4 - SVD GREGG 230 kV id v" 1.00	P1	N-1	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Violation occurred at non-bes bus.
"P1-2 - Line GREGG to HERNDON 230 kV ckt 1 with RAS" 1.00	P1	N-1	No Issues	No Issues	No Issues	No Issues	Potential WECC/NERC criteria violation	Sensitivity only
"P2-3 - Internal fault at non-Bus-tie breaker Herndon 252 protecting Line GREGG to HERNDON 230 kV ckt 1 with RAS" 1.00	P2	Bus/Breaker	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Current result is based on 3-phase fault.Working with PTO for SLG fault information
"P2-4 - Internal fault at Bus-tie Breaker 202 at MC CALL 230 kV Bus D" 1.00	P2	Bus/Breaker	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Project: Reedley 70kV reinforcement project
"P2-3 - Internal fault at non-Bus-tie breaker Herndon 252 protecting Line GREGG to HERNDON 230 kV ckt 1 with RAS" 1.00	P2	Bus/Breaker	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	Continue to monitor
"P2-4 - Internal fault at Bus-tie Breaker 302 at MC CALL 230 kV Bus E" 1.00	P2	Bus/Breaker	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	Continue to monitor
"P2-3 - Internal fault at non-Bus-tie breaker Herndon 252 protecting Line GREGG to HERNDON 230 kV ckt 1 with RAS" 1.00	P2	Bus/Breaker	No Issues	No Issues	No Issues	No Issues	Potential WECC/NERC criteria violation	Sensitivity only
"P3-2 - Gen HELMS 1 18 kV unit 1 and Line GREGG to HERNDON 230 kV ckt 1 with RAS" 1.00	P3	N-1/G-1	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Violation occurred at non-bes bus.
"P3-3 - Gen HELMS 1 18 kV unit 1 and Tran MC CALL 230/115 kV bk 1" 1.00	P3	N-1/G-1	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Project: Camden 70 kV reinforcement Project
"P3-4 - Gen HELMS 1 18 kV unit 1 and SVD GREGG 230 kV id v" 1.00	P3	N-1/G-1	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	No Issues	Violation occurred at non-bes bus.
"P3-2 - Gen SUNRISEPR 18 kV (3 units) and Line GREGG to HERNDON 230 kV ckt 1 with RAS" 1.00	P3	N-1/G-1	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	Continue to monitor
"P3-2 - Gen KERCKHOF 13.8 kV unit 1 and Line GREGG to HERNDON 230 kV ckt 1" 1.00	P3	N-1/G-1	No Issues	No Issues	No Issues	No Issues	Potential WECC/NERC criteria violation	Sensitivity only
"P4-1 - Stuck 115 kV Breaker 172 protecting Gen KERCKHOF 13.8 kV unit 1" 1.00	P4	Stuck breaker	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	Potential WECC/NERC criteria violation	Current result is based on 3-phase fault.Working with PTO for SLG fault information
"P5-5c - Failure of non-redundant DC battery supplying Borden 230kV and 70kV Buses" 1.00	P5	Non-Redundent battery/relay	No Issues	No Issues	Potential WECC/NERC criteria violation	No Issues	No Issues	Continue to monitor

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)									Potential Mitigation Solutions
			2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2029 Summer-Off Peak	2026 SP Heavy Renewable & Min Gas Gen	2026 OP Sensitivity	2029 SP High CEC Forecast	

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

Substation	Load Served (MW)									Potential Mitigation Solutions	
	2026 Summer Peak	2026 Summer Peak	2029 Summer Peak	2034 Summer Peak	2026 Spring Off-Peak	2029 Spring Off-Peak	2029 Summer-Off Peak	2026 SP Heavy Renewable & Min Gas Gen	2026 OP Sensitivity		2029 SP High CEC Forecast

No single source substation with more than 100 MW