



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	
Tulucay - Napa #2 60 kV (Tulucay 60 kV to Basalt 60 kV)	Base Case	P0	N-0	108.4	63.2	68.6	57.9	47.8	51.2	73.9	24.5	63.9	22.3	89.5	N/A	122.9	Tulucay - Napa #2 60 kV Line Project In service on April, 2023 Short Term : Action Plan
Santa Rosa- Corona 115 kv (Santa Rosa 115kv sub to Stony Point Sub 115 kv)	FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	N/A	92.7	102.1	N/A	72.1	82.8	N/A	35.6	94.5	32.9	N/A	N/A	102.0	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
	FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7-1	DCTL	N/A	N/A	101.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	101.6	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
Corona-Lakeville 115 kV Line	FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundant Relay	105.1	109.5	122.8	89.8	90.2	107.0	62.7	16.2	111.7	10.9	62.4	N/A	137.9	Fulton 230 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
	FULTON 115KV - SECTION 2D & 1D	P2-4	Bus Tie Breaker Fault	114.0	119.6	130.9	103.6	102.8	118.5	79.3	43.5	121.9	39.4	84.2	N/A	149.6	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
	FULTON-SANTA ROSA #1 & FULTON-SANTA ROSA #2 LINES	P7-1	DCTL	N/A	N/A	130.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	149.1	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
Sonoma - Pueblo 115 kV	FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundant Relay	103.5	105.8	118.5	72.1	72.3	84.5	61.0	14.5	107.7	9.0	62.1	N/A	138.0	Fulton 230 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
Mendocino -Clearlake 60 kV (Mendocino Sub 60 kV to Upper Lake Sub 60 Kv)	EGLE RCK - MA 115KV & EGLE RCK-FULTON-SILVERDO LINE	P2-3	Non-Bus Tie Breaker Fault	103.6	103.5	72.4	81.2	81.7	63.9	80.1	25.5	106.0	22.1	67.4	N/A	73.5	Eagle Rock 115 SPS recommended in 2018-19 TPP (PGAE is looking at the options of load drop in the Fulton area)
	EGLE RCK 115KV SECTION MA	P2-2	Bus Fault	103.6	103.5	72.5	81.2	81.7	64.0	80.1	25.4	106.0	21.9	67.7	N/A	73.5	Eagle Rock 115 SPS recommended in 2018-19 TPP (PGAE is looking at the options of load drop in the Fulton area)
Fulton-Hopland 60 kV Line (Cloverdale Jct-Hopland)	FULTON 115KV - SECTION 2F & 1F	P2-4	Bus Tie Breaker Fault	227.8	223.4	216.0	161.8	162.2	146.5	207.6	61.3	224.0	51.2	194.0	N/A	216.2	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
Fulton- Molino- Cotati 60 kV(Molino sub 60 kV to Molino Jct 60 kV)	FULTON 115KV - SECTION 2F & 1F	P2-4	Bus Tie Breaker Fault	220.0	210.2	216.2	167.9	170.5	148.1	205.6	25.3	212.3	2.7	180.9	N/A	215.4	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
Fulton-Hopland 60 kV Line (Geysers Jct-Cloverdale Jct)	FULTON 115KV - SECTION 2F & 1F	P2-4	Bus Tie Breaker Fault	228.0	223.7	216.2	161.9	162.3	146.6	208.3	61.3	223.9	51.1	194.5	N/A	216.4	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
Fulton-Hopland 60 kV Line (Fitch Mountain Tap-Geysers Jct)	FULTON 115KV - SECTION 2F & 1F	P2-4	Bus Tie Breaker Fault	228.0	224.1	216.3	162.5	162.9	147.3	207.3	61.2	224.1	51.0	194.6	N/A	216.5	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
LAKEVILLE #2 60KV	FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundant Relay	140.1	143.1	160.0	89.2	90.1	97.2	86.9	20.2	145.3	21.6	71.7	N/A	156.3	Fulton 230 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
	FULTON 115KV - SECTION 2F & 1F	P2-4	Bus Tie Breaker Fault	328.5	322.8	321.3	232.8	235.5	221.4	281.3	35.7	326.1	6.7	247.3	N/A	320.3	Fulton 115 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)
Fulton- Molino- Cotati 60 kV(Molino sub 60 kV to Molino Jct 60 kV)	FULTON 230 KV BAAH BUS #1 (FAILURE OF NON-REDUNDENT RELAY)	P5-5	Non-Redundant Relay	89.3	91.0	102.4	58.3	59.8	62.4	54.4	18.9	92.4	16.0	49.4	N/A	98.5	Fulton 230 SPS recommended in 2017-18 TPP (PGAE is looking at the options of load drop in the Fulton area)



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	
115KV (115KV to 60KV to 115KV to 60KV)	FULTON 115KV - SECTION 2F & 1F	P2-4	Bus Tie Breaker Fault	243.8	234.1	234.3	180.1	182.9	162.8	229.9	36.3	236.3	13.7	206.2	N/A	233.5	Fulton 115 SPS recommended in 2017-18 TPP (PG&E is looking at the options of load drop in the Fulton area)

In accordance with TPL-001-4- Requirement R2.6, this area relies on the past studies from the 2019-20 Transmission Planning Process. The results shown here are for new contingencies and new sensitivity

<http://www.caiso.com/Documents/AppendixC-BoardApprovedt2019-2020TransmissionPlan.pdf>

Study Area: PG&E North Valley

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	
HGHWY J2 115 kV	CR1T3_18-FULTON 230KV [4750] NO FAULT	P2-1	Line Section w/o Fault	>0.9	0.93	0.90	>0.9	1.00	0.96	>0.9	1.03	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term
HIGHWAY 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.90	>0.9	1.00	0.96	>0.9	1.03	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term
NTWR ALT 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.89	>0.9	1.00	0.95	>0.9	1.02	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term
CRQNZTP2 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.89	>0.9	0.99	0.95	>0.9	1.02	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term
MEYERTP2 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.89	>0.9	0.99	0.95	>0.9	1.02	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term
HGHWY J2 115 kV	CR2T3_18-LAKEVILE 230KV [4780] NO FAULT	P2-1	Line Section w/o Fault	>0.9	0.93	0.90	>0.9	1.00	0.96	>0.9	1.03	0.93	1.03	>0.9	>0.9	0.90	Sensitivity only
HIGHWAY 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.90	>0.9	1.00	0.96	>0.9	1.03	0.93	1.03	>0.9	>0.9	0.89	Sensitivity only
NTWR ALT 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.90	>0.9	1.00	0.96	>0.9	1.02	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term
CRQNZTP2 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.90	>0.9	1.00	0.95	>0.9	1.02	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term
MEYERTP2 115 kV		P2-1	Line Section w/o Fault	>0.9	0.93	0.90	>0.9	1.00	0.95	>0.9	1.02	0.93	1.03	>0.9	>0.9	0.89	Monitor issue in the long term

In accordance with TPL-001-4- Requirement R2.6, this area relies on the past studies from the 2019-20 Transmission Planning Process. The results shown here are for new contingencies and new sensitivity

<http://www.caiso.com/Documents/AppendixC-BoardApprovedt2019-2020TransmissionPlan.pdf>

Study Area: PG&E North Coast & North Bay

Voltage Deviation



Substation	Contingency (All and Worst P3)	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	2029 Retirement of QF Generations	
None																

Study Area: PG&E North Coast & North Bay

Transient Stability



Contingency	Category	Category Description	Transient Stability Performance					Potential Mitigation Solutions
			Baseline Scenarios			Sensitivity Scenarios		
			Select..	Select..	Select..	Select..	Select..	
In accordance with TPL-001-4- Requirement R2.6, this area relies on the past studies from the 2019-20 Transmission Planning Process for transient stability studies:								
<a href="http://www.caiso.com/Documents/AppendixC-BoardApprovedt2019-2020TransmissionPlan.pdf">http://www.caiso.com/Documents/AppendixC-BoardApprovedt2019-2020TransmissionPlan.pdf</a>								

Study Area: PG&E North Valley



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 North Valley



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