2014-2015 ISO Reliability Assessment - Study Results

Study Area: **PG&E Central Valley Stanislaus - Summer Peak**

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	
STAN-SP-T-1	Bellota-Riverbank-Melones SW STA 115 kV Line (Melones-Tulloch Section)	C2-6_TESLA 115 kV Bus 1 and Bus 2 - CB 102 Failure	C2	Bus	155.2	<100	<100	Short Term: Stockton Area 2013 Summer Action Plan Long Term: Vierra Looping Project
STAN-SP-T-2	Bellota-Riverbank-Melones SW STA 115 kV Line (Riverbank Jct-Tulloch Section)	C2-6_TESLA 115 kV Bus 1 and Bus 2 - CB 102 Failure	C2	Bus	138.7	<100	<100	Short Term: Stockton Area 2013 Summer Action Plan Long Term: Vierra Looping Project
STAN-SP-T-3	Stanislau-Melones SW STA-Riverbank Jct SW STA 115 kV Line (Melones-Melones Jct Section	C2-6_TESLA 115 kV Bus 1 and Bus 2 - CB 102 Failure	C2	Bus	140.1	<100	<100	Short Term: Stockton Area 2013 Summer Action Plan Long Term: Vierra Looping Project
STAN-SP-T-4	Stanislaus-Melones SW STA-Riverbank JCT SW STA 115 kV Line (Melones Jct-Riverbank Jct SW STA)	C2-6_TESLA 115 kV Bus 1 and Bus 2 - CB 102 Failure	C2	Bus	148.0	<100	<100	Short Term: Stockton Area 2013 Summer Action Plan Long Term: Vierra Looping Project
STAN-SP-T-5	Bellota-Riverbank-Melones SW STA 115 kV Line (Melones-Tulloch Section)	B3_11_Bellota 230/115 kV Transformer No. 1 & B3_12_Belltoa 230/115 kV Transformer No. 2	C3	N-1-1	159.7	169.0	<100	SPS or Add 3rd Bellota 230/115 kV Transformer and Sectionalizing Breakers
STAN-SP-T-6	Bellota-Riverbank-Melones SW STA 115 kV Line (Riverbank Jct-Tulloch Section)	B3_11_Bellota 230/115 kV Transformer No. 1 & B3_12_Belltoa 230/115 kV Transformer No. 2	C3	N-1-1	183.6	192.4	<100	SPS or Add 3rd Bellota 230/115 kV Transformer and Sectionalizing Breakers

Study Area: **PG&E Central Valley Stanislaus - Summer Peak**

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	
STAN-SP-T-7	Stanislau-Melones SW STA-Riverbank Jct SW STA 115 kV Line (Melones-Melones Jct Section	B3_11_Bellota 230/115 kV Transformer No. 1 & B3_12_Belltoa 230/115 kV Transformer No. 2	C3	N-1-1	97.1	100.6	<100	SPS or Add 3rd Bellota 230/115 kV Transformer and Sectionalizing Breakers

Study Area: **PG&E Central Valley stanislaus - Spring Peak**

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					N/A	2019 Spring Off-Peak	N/A	
STAN-SpP-T-1	33906 SPRNG GP 115 34078 SPRNG GP 6.00 1	B2_8_Bellota-Riverbank-Melones 115 kV Line & B1_1_SJ COGEN 13.80 Unit ID 1	B	L-1/G-1		106.0		Explore potential mitigation
STAN-SpP-T-2	33900 DONNELLS 115 34058 DONNELLS 13.8 1	C2-1_BELLOTA 230 kV Bus 1 and Bus 2 - CB 200 Failure	C2	CB		100.2		Explore potential mitigation
STAN-SpP-T-3	33906 SPRNG GP 115 34078 SPRNG GP 6.00 1	C2-7_BELLOTA 115 kV Bus 1 and Bus 2 - CB 100 Failure	C2	CB		109.2		Explore potential mitigation
STAN-SpP-T-4	33506 STANISLS 115 33948 RVRBK J2 115 1	B2_13_Stanislaus-Melones-Manteca 115 kV Line No. 1 & B2_3_Stanislaus - Melones Sw 115 kV Line	C3	N-1-1		100.0		Explore potential mitigation
STAN-SpP-T-5	33906 SPRNG GP 115 34078 SPRNG GP 6.00 1	C5_21_Schulte-Kasson-Manteca 115 kV Line & Manteca-Vierra 115 k	C5	DCTL		111.8		Explore potential mitigation

Study Area: **PG&E Central Valley Stanislaus -Summer Off-Peak & Summer Light Load**

Thermal Overloads

ID	Overloaded Facility	Worst Contingency	Category	Category Description	Loading (%)			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	

No thermal overload concerns identified.

Study Area: **PG&E Central Valley Stanislaus - Summer Peak**

Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

No voltage deviation concerns identified.

Study Area: **PG&E Central Valley stanislaus - Spring Peak**

Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					N/A	2019 Spring Peak	N/A	

No voltage deviation concerns identified.

Study Area: **PG&E Central Valley Stanislaus -Summer Off-Peak & Summer Light Load**

Voltage Deviations

ID	Substation	Worst Contingency	Category	Category Description	Post Cont. Voltage Deviation %			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	N/A	

No voltage deviation concerns identified.

Study Area: **PG&E Central Valley Stanislaus - Summer Peak**

High/Low Voltage

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

No high/low voltage concerns identified.

Study Area: **PG&E Central Valley stanislaus - Spring Peak**

High/Low Voltage

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					N/A	2019 Spring Peak	N/A	

No high/low voltage concerns identified.

Study Area: **PG&E Central Valley Stanislaus -Summer Off-Peak & Summer Light Load**

High/Low Voltage

ID	Substation	Worst Contingency	Category	Category Description	Voltage (PU)			Potential Mitigation Solutions
					2016 Summer Off-Peak	2019 Summer Light Load	Select..	

No high/low voltage concerns identified.

Study Area: **PG&E Central Valley Stanislaus - Summer Peak**

Transient Stability

ID	Contingency	Category	Category Description	Transient Stability Performance			Potential Mitigation Solutions
				2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

No transient stability concerns identified.

Study Area: **PG&E Central Valley Stanislaus - Summer Peak**

Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

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

Study Area: **PG&E Central Valley stanislaus - Spring Peak**

Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				N/A	2019 Spring Peak	N/A	

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

Study Area: **PG&E Central Valley Stanislaus -Summer Off-Peak & Summer Light Load**

Single Contingency Load Drop

ID	Worst Contingency	Category	Category Description	Amount of Load Drop (MW)			Potential Mitigation Solutions
				2016 Summer Off-Peak	2019 Summer Light Load	N/A	

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

Study Area: **PG&E Central Valley Stanislaus - Summer Peak**

Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		2016 Summer Peak	2019 Summer Peak	2024 Summer Peak	

No single source substation with more than 100 MW Load

Study Area: **PG&E Central Valley stanislaus - Spring Peak**

Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		N/A	2019 Spring Peak	N/A	

No single source substation with more than 100 MW Load

Study Area: **PG&E Central Valley Stanislaus -Summer Off-Peak & Summer Light Load**

Single Source Substation with more than 100 MW Load

ID	Substation	Load Served (MW)			Potential Mitigation Solutions
		2016 Summer Off-Peak	2019 Summer Light Load	N/A	

No single source substation with more than 100 MW Load