

Year 2008 LCR Study

Stockton Area in PG&E System

Summary of Findings

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Sierra and Stockton LCR Areas





Stockton Area Load and Resources (MW)

2008

| Load | = | 1306 |
|---------------------------|---|------|
| Transmission Losses | = | 27 |
| Total Load | = | 1333 |
| | | |
| Market Generation | = | 264 |
| Muni Generation | = | 190 |
| QF Generation | = | 82 |
| Total Qualifying Capacity | = | 536 |

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Tesla-Bellota Sub-area

California ISO

Contingency: Tesla-Tracy 115 kV line and Tesla-Kasson-Manteca 115 kV line.

- LCR: 565 MW (includes 195 MW of QF and Muni generation as well as 105 MW of Deficiency).
- Limiting component: Thermal overload on the Manteca-Ingram Creek section of the Tesla-Salado-Manteca 115 kV line.

Tesla-Bellota Sub-area – Category B

- Contingency: Tesla-Kasson-Manteca 115 kV line and the loss of Stanisls #1.
- LCR: 475 MW (includes 195 MW of QF and Muni generation as well as 15 MW of Deficiency).
- Limiting component: Thermal overload on the Manteca-Ingram Creek section of the Tesla-Salado-Manteca 115 kV line.



Tesla-Bellota 115 kV Area Transmission





Critical Stockton Area Contingencies Lockeford Sub-area

Lockeford Sub-area

Contingency: Lockeford-Industrial 60 kV line and Lockeford-Lodi #2 60 kV line

LCR: 72 MW (includes 28 MW of QF and Muni generation as well as 44 MW of Deficiency)

Limiting component: Thermal overload on the Lockeford-Lodi Jct. Section of the Lockeford-Lodi #3 60 kV line

Lockeford Sub-area – Category B

Contingency: None

LCR: 0 MW

Limiting component: None.



Lockeford 60 kV Area Transmission







Critical Stockton Area Contingencies Stagg Sub-area

Stagg Sub-area

Contingency: Tesla-Stagg 230 kV line and Tesla-Eight Mile 230 kV line

LCR: 150 MW (includes 50 MW of Muni generation as well as 100 MW of Deficiency)

Limiting component: Post-contingency steady-state voltages less than 0.9 p.u. at Stagg, Eight Mile Road and Lodi Stig 230 kV busses.

Stagg Sub-area – Category B

Contingency: None LCR: 0 MW Limiting component: None.



Stagg 230 kV Area Transmission





Critical Stockton Area Contingencies Aggregate

| | QF (MW) | Muni (MW) | Market (MW) | Max. Qualifying Capacity (MW) | |
|-----------------------|---|--------------|----------------|----------------------------------|-------------------------|
| Available generation | 82 | 190 | 264 | 536 | |
| | Existing Generation Capacity Needed (MW) | |) Deficient | ncy) | Total MW Requirement |
| Category B (Single) | 460 | | 15 | | 475 |
| Category C (Multiple) | 536 | | 250 | | 786 |

Each unit is only counted once, regardless in how many sub-areas it is needed.

In order to come up with an aggregate deficiency, where applicable the deficiencies in each smaller sub-area has been accounted for (based on their effectiveness factors) toward the deficiency of a much larger sub-area.



Changes since the 2007 LCR study

Total LCR Need has increased

Mainly because of increase in load that has resulted in higher deficiency. In the Stagg sub-pocket for example the load increase results in much higher generation proxy needed because the load is the most effective in mitigating the low voltage problems.

Total Net Qualifying Capacity has decreased

Mainly because of updates to the historical output levels of QF generation in the area.



Stakeholder Comments

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