Local Capacity Requirements (LCR) for Year 2009
Study Results for the Sierra and Stockton Areas

LCR Stakeholder Meeting, March 4th, 2008, Folsom CA

California ISO
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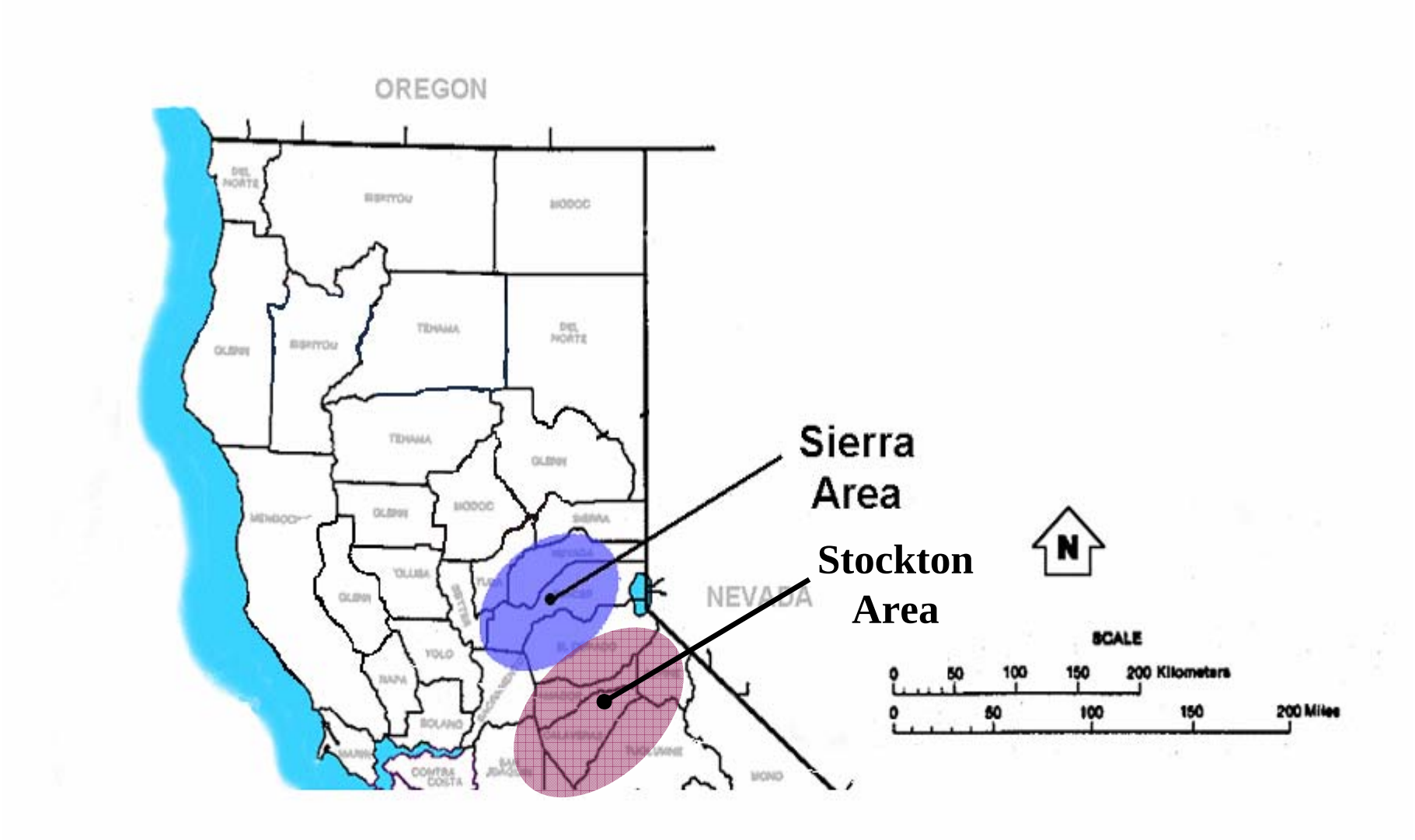
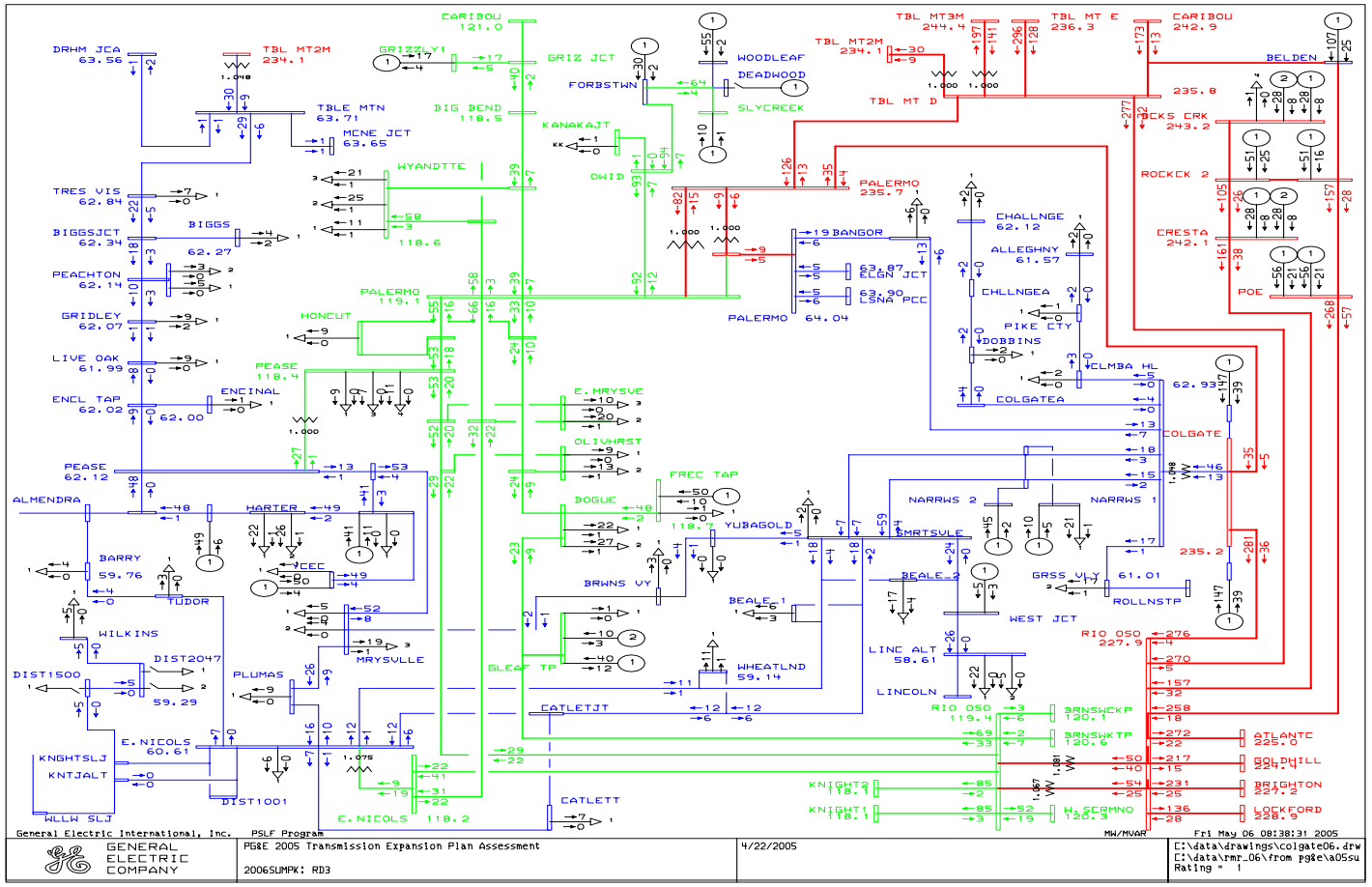
Sierra and Stockton LCR Areas



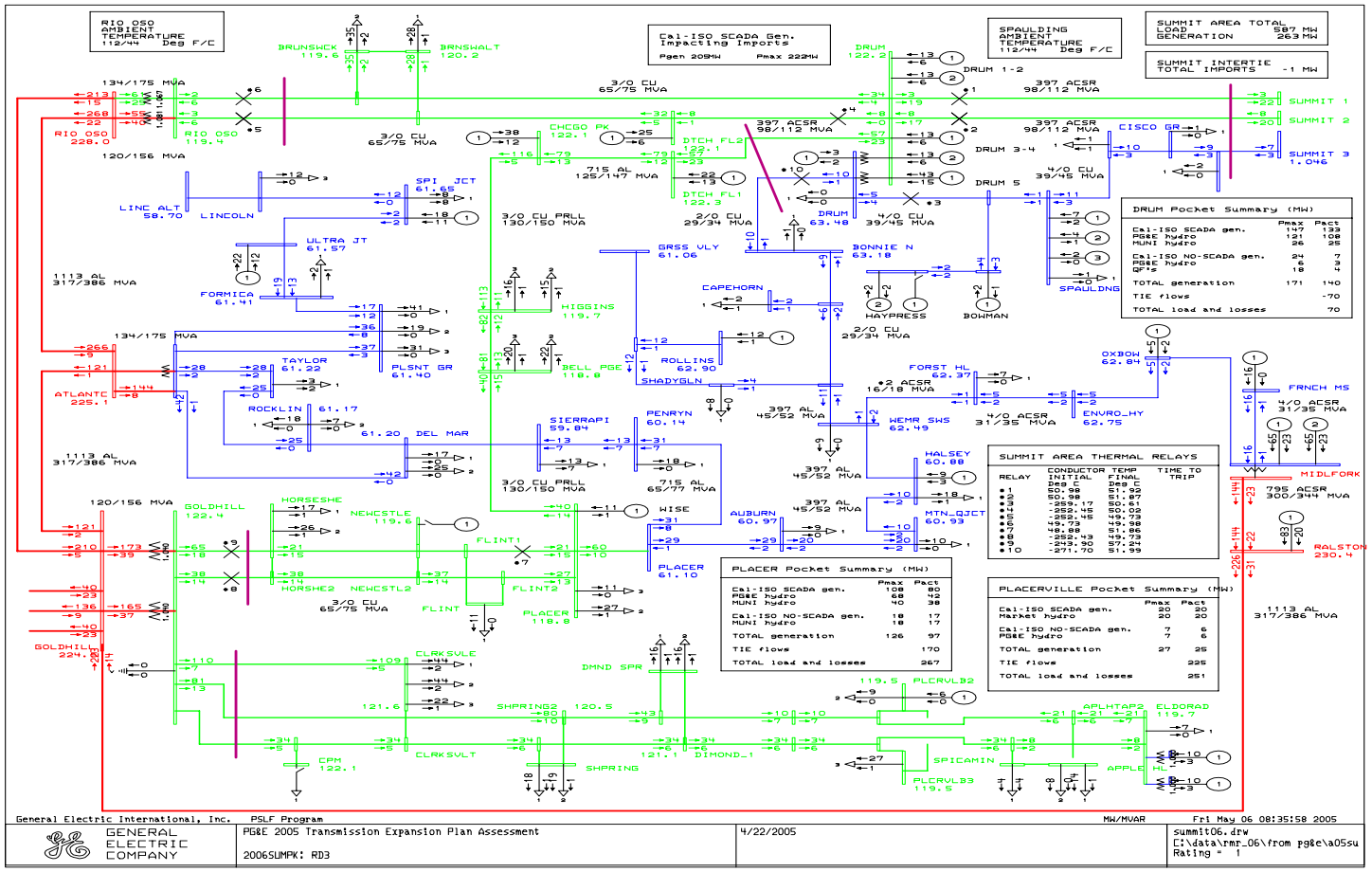
Sierra Area Load and Resources (MW)

		2009
Load	=	2019
Transmission Losses	=	107
Total Load	=	**2126**
Market Generation	=	768
Muni Generation	=	796
QF Generation	=	216
Total Qualifying Capacity	=	**1780**

Northern Part of Sierra



Southern Part of Sierra



Critical Sierra Area Contingencies
South of Table Mountain

South of Table Mountain Sub-area

Contingency: Table Mountain-Rio Oso 230 kV & Table Mountain Palermo 230 kV DCTL outage

LCR requirement: 1617 MW (includes 216 MW of QF and 796 MW of Muni generation)

Limiting component: Thermal overload on the Caribou-Palermo 115 kV line

Requirements have decreased due to the Table Mountain-Palermo 230 kV line Upgrade (part of the Table Mountain-Rio Oso 230 kV Reconductor and Tower Upgrade Project). If this project is not operational by June 1, 2009 then requirement is higher than 1780 MW the total available resources in the area.

South Of Palermo Sub-area – Category B

Contingency: Table Mountain-Rio Oso 230 kV line with Colgate #1 unit out of service

LCR requirement: 1159 MW (includes 1012 MW of QF and Muni generation)

Limiting component: Thermal overload on Table Mountain-Palermo 230 kV line

Critical Sierra Area Contingencies
Pease & Bogue

Pease Sub-area

Contingency: Palermo-East Nicolaus 115 kV line with one of the Green Leaf II Co-gen unit out of service

LCR requirement: 104 MW (includes 90 MW of QF)

Limiting component: Thermal overload on the Palermo-Pease 115 kV line

Bogue Sub-area

No requirements, because of the following projects:

1. South of Palermo 115 kV reconductoring

If this project is not operational by June 1, 2009 then requirement is higher than 101 MW needed in 2008. All the units in this area Greenleaf #1 and Feather River Energy Center are needed.

Critical Sierra Area Contingencies
South of Palermo

South Of Palermo Sub-area

Contingency: Double Circuit Tower Line Table Mountain-Rio Oso and Colgate-Rio Oso 230 kV lines

LCR requirement: 1274 MW (includes 364 MW of QF and Muni generation as well as 240 MW of Deficiency)

Limiting component: Thermal overload on the Pease-Rio Oso 115 kV line

South Of Palermo Sub-area – Category B

Contingency: Palermo-East Nicolaus 115 kV line with Belden unit out of service

LCR requirement: 419 MW (includes 364 MW of QF and Muni generation)

Limiting component: Thermal overload on the Pease-Rio Oso 115 kV line

Critical Sierra Area Contingencies
Colgate & Drum-Rio Oso

Colgate Sub-area

No requirements, because of the following projects:

1. Colgate 230/60 kV transformer upgrade
2. Second Pease-Marysville 60 kV line
3. Atlantic-Lincoln 115 kV upgrade.

Drum-Rio Oso Sub-area

No requirements, because of the following projects:

1. Rio Oso #1 and #2 230/115 kV transformer replacement

If this project is not operational by June 1, 2009 then requirement is higher than 831 MW needed in 2008. All the units in this area are needed.

Critical Sierra Area Contingencies
South of Rio Oso

South of Rio Oso Sub-area

Contingency: Rio Oso-Gold Hill 230 line followed by loss of the Gold Hill-Ralston 230 kV line or vice versa

LCR requirement: 434 MW (includes 291 MW of QF and Muni generation as well as 67 MW of Deficiency)

Limiting component: Thermal overload on the Rio Oso-Atlantic 230 kV line

South of Rio Oso Sub-area – Category B

Contingency: Rio Oso-Gold Hill 230 line with the Ralston unit out of service

LCR requirement: 293 MW (includes 291 MW of QF and Muni generation)

Limiting component: Thermal overload on the Rio Oso-Atlantic 230 kV line

Critical Sierra Area Contingencies
Placer

Placer Sub-area

Contingency: Drum-Higgins 115 kV line followed by loss of the Gold Hill-Placer #2 115 kV line

LCR requirement: 140 MW (includes 0 MW of QF and Muni generation as well as 116 MW of Deficiency)

Limiting component: Thermal overload on the Gold Hill-Placer #1 115 kV line

Placer Sub-area – Category B

Contingency: Drum-Higgins 115 kV line with the Halsey unit out of service

LCR requirement: 37 MW (includes 0 MW of QF and Muni generation as well as 13 MW of Deficiency)

Limiting component: Thermal overload on the Gold Hill-Placer #1 115 kV line

Critical Sierra Area Contingencies
Placerville

Placerville Sub-area

Contingency: Gold Hill-Clarksville 115 kV line followed by loss of the Gold Hill-Missouri Flat #2 115 kV line

LCR requirement: 118 MW (includes 0 MW of QF and Muni generation as well as 89 MW of Deficiency)

Limiting component: Thermal overload on the Gold Hill-Missouri Flat #1 115 kV line

Placerville Sub-area – Category B

Contingency: Gold Hill-Clarksville 115 kV line with one of the El Dorado units out of service

LCR requirement: 34 MW (includes 0 MW of QF and Muni generation as well as 5 MW of Deficiency)

Limiting component: Thermal overload on the Gold Hill-Missouri Flat #1 115 kV line

Critical Sierra Area Contingencies Aggregate

	QF (MW)	Muni (MW)	Market (MW)	Max. Qualifying Capacity (MW)
Available generation	216	796	768	1780

	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Requirement
Category B (Single)	1159	18	1177
Category C (Multiple)	1617	278	1895

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 2008 LCR study

Total LCR Need has decreased

Mainly because of new transmission project:

1. Table Mountain-Rio Oso 230 kV Reconductoring and Tower Upgrade (including Table Mountain-Palermo 230 kV line)
2. Atlantic-Lincoln 115 kV Upgrade
3. South of Palermo 115 kV Reconductoring
4. Rio Oso #1 and #2 230/115 kV Transformer Replacement

Stockton Area Load and Resources (MW)

		2009
Load	=	1409
Transmission Losses	=	27
Total Load	=	**1436**
Market Generation	=	265
Muni Generation	=	188
QF Generation	=	88
Total Qualifying Capacity	=	**541**

Critical Stockton Area Contingencies
Tesla-Bellota Sub-area

Tesla-Bellota Sub-area

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

LCR: 524 MW (includes 201 MW of QF and Muni generation as well as 57 MW of Deficiency).

Limiting component: Thermal overload on the Manteca-Ingram Creek section of the Tesla-Salado-Manteca 115 kV line.

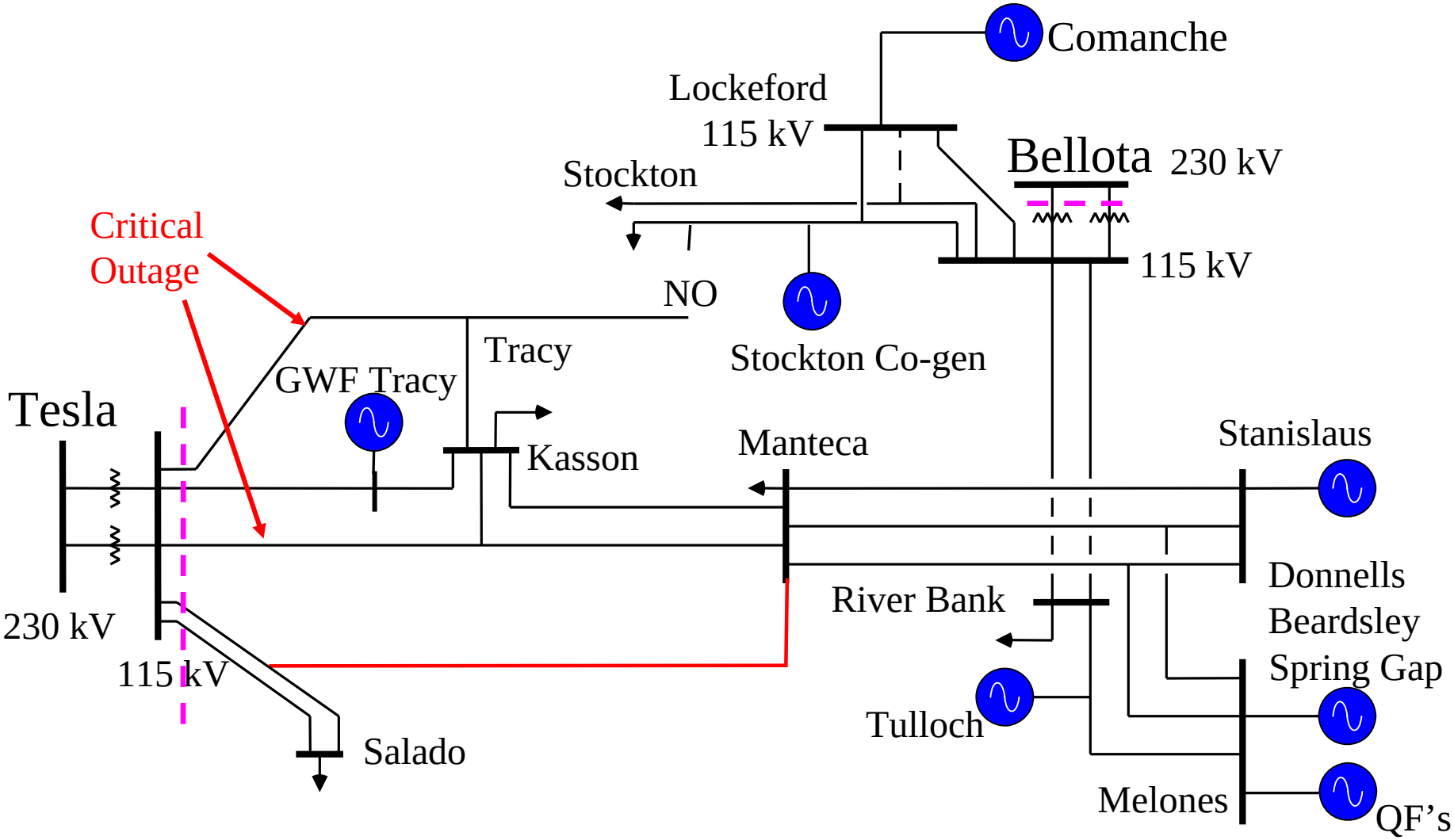
Tesla-Bellota Sub-area – Category B

Contingency: Tesla-Kasson-Manteca 115 kV line and the loss of Stanisls #1.

LCR: 496 MW (includes 201 MW of QF and Muni generation as well as 29 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: 88 MW (includes 25 MW of QF and Muni generation as well as 63 MW of Deficiency)

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

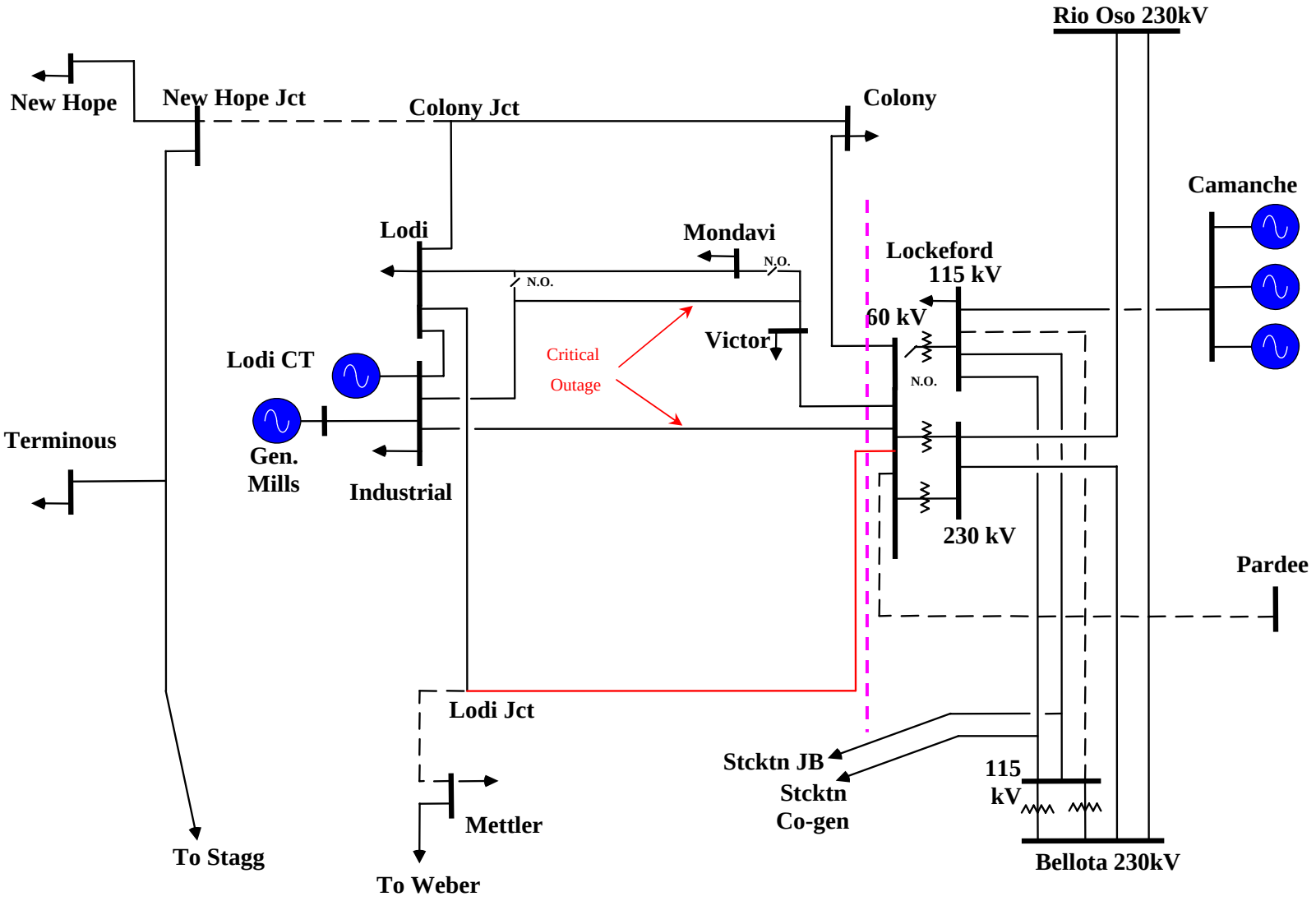
Lockeford Sub-area – Category B

Contingency: Lockeford-Industrial 60 kV line with Lodi CT out of service

LCR: 30 MW (includes 25 MW of QF and Muni generation as well as 5 MW of Deficiency)

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

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: 115 MW (includes 50 MW of Muni generation as well as 65 MW of Deficiency)

Limiting component: Post-contingency steady-state voltages less than 0.92 p.u. at Mosher 60 kV bus

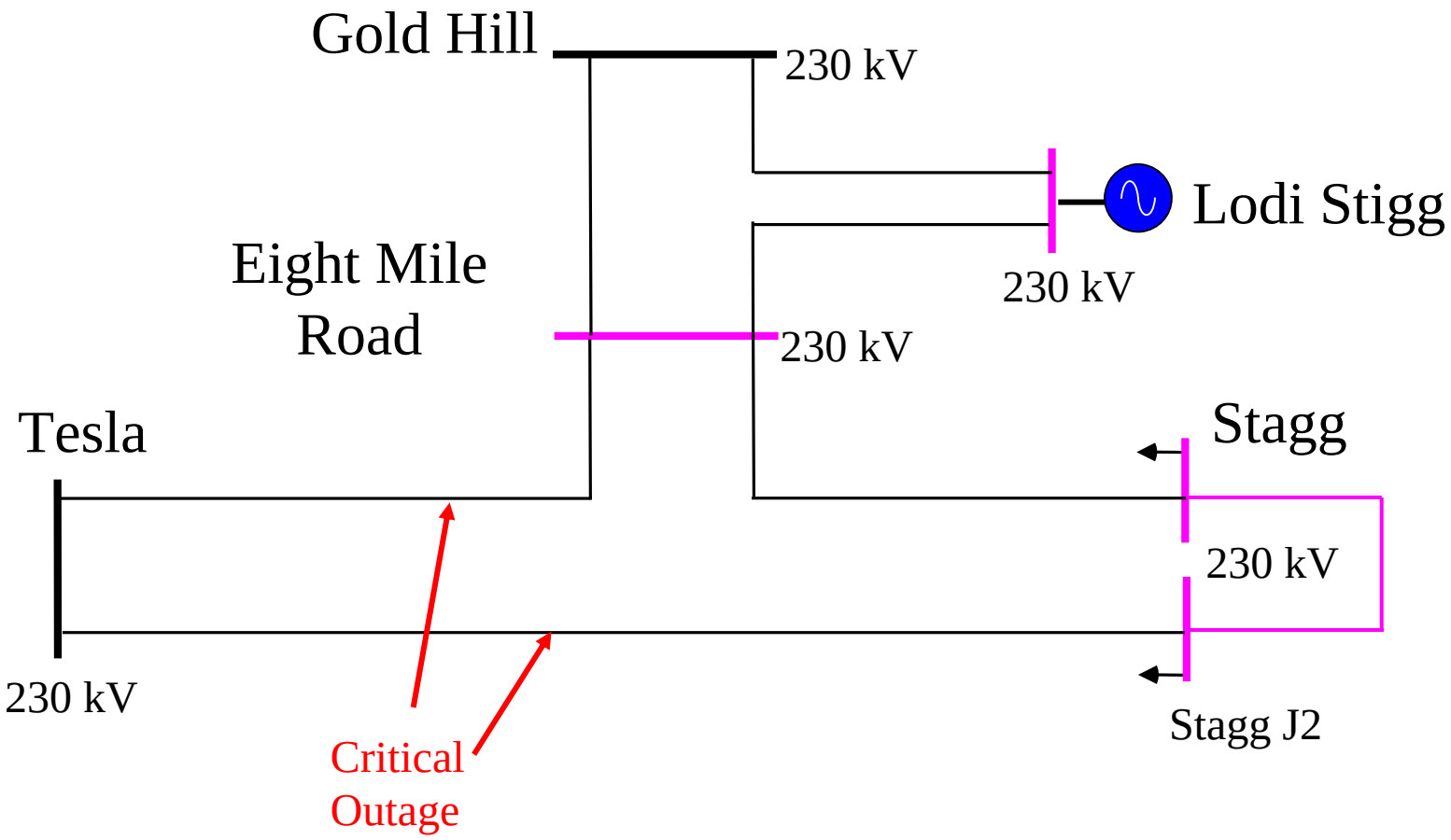
Stagg Sub-area – Category B

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	88	188	265	541

	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Requirement
Category B (Single)	491	34	525
Category C (Multiple)	541	185	726

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 2008 LCR study

Total LCR Need has increased

Mainly because of increase in load that has resulted in higher deficiency.

Total Net Qualifying Capacity has increased slightly

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

Stakeholder Comments

Your comments and questions are welcome

For written comments, please send to: RegionalTransmission@caiso.com