



California ISO
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10 Year Anniversary 1998-2008

2010 LCR Study Humboldt and North Coast/ North Bay

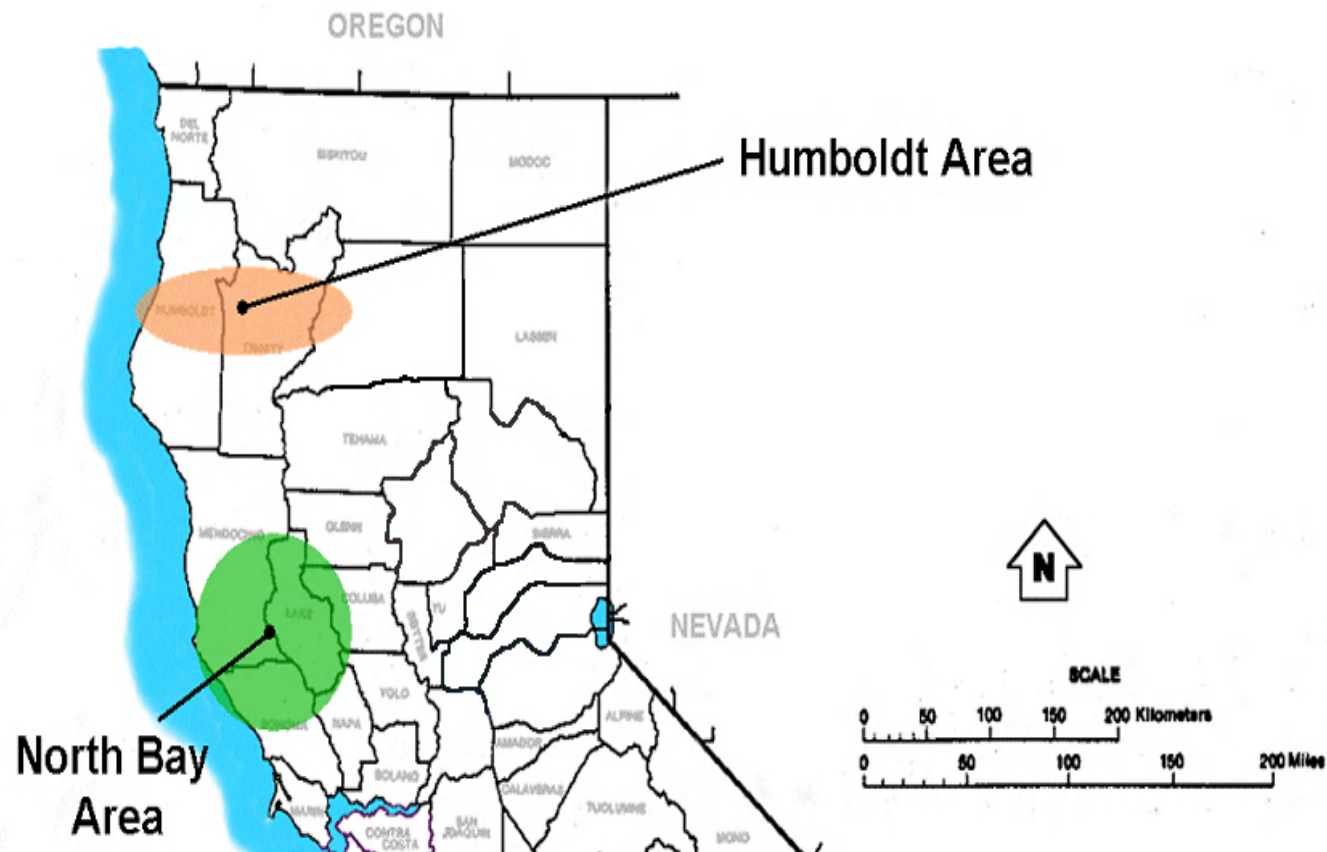
Jazmin Pierce

Regional Transmission Engineer

Stakeholder Meeting

March 10, 2009

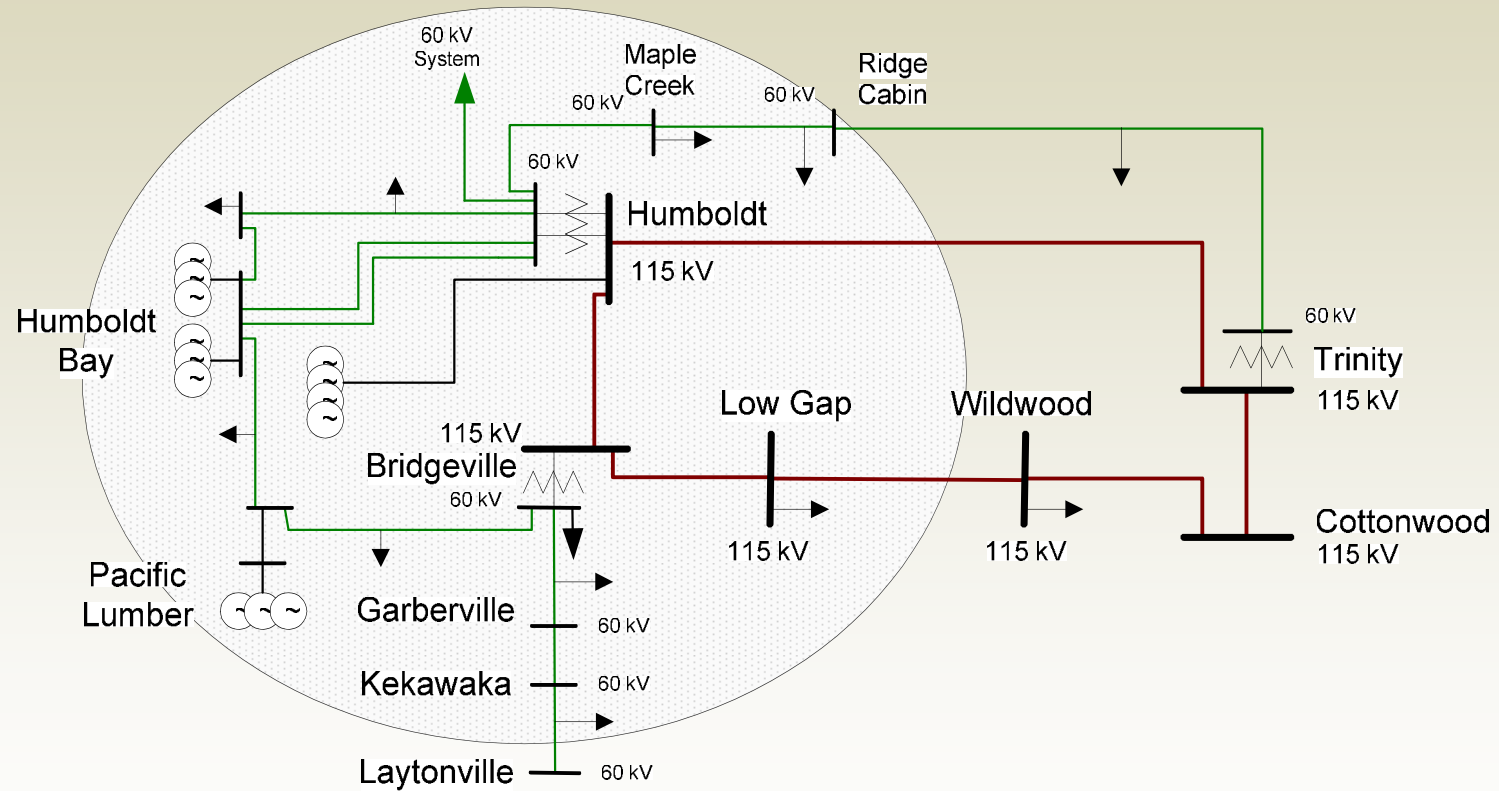
Humboldt and North Coast/North Bay Areas



Humboldt Load and Resources (MW)

		2010
Load	=	209
Transmission Losses	=	9
Total Load	=	209
Market Generation	=	166
Muni Generation	=	0
QF/Self-Gen Generation	=	48
Total Qualifying Capacity	=	214

Critical Contingencies Humboldt Area



Critical Contingencies

Humboldt 60 kV sub-area

Humboldt 60 kV Sub-area – Category C

Contingency: The outages of Humboldt Bay 115/60 kV transformer #1 or #2 overlapping with the outage of one of the new gen-ties from HBPP

LCR need: 175 MW (including 45 MW of QF/Self generation and 27 MW of deficiency). The requirement for the market units refers to units on the 60 kV side only

Limiting component: Overload of the parallel Humboldt 115/60 kV transformer

Humboldt 60 kV Sub-area – Category B

Contingency: Humboldt Bay 115/60 kV transformer #1 or #2

LCR need: 138 MW (including 45 MW of QF/Self generation). The requirement for the market units refers to units on the 60 kV side only

Limiting component: Overload of the parallel Humboldt 115/60 kV transformer

Critical Contingencies Humboldt Area

Humboldt Overall – Category C

- Contingency: The outages of Bridgeville-Cottonwood 115 kV line overlapping with the outage of one of the new gen-ties from HBPP
- LCR need: 169 MW (including 45 MW of QF/Self generation). The requirement for the market units refers to units on both the 60 and 115 kV side
- Limiting component: Overload of the Humboldt-Trinity 115 kV line
- TOTAL LCR Need: 196 MW (including 45 MW of QF/Self generation and 27 MW of deficiency)

Humboldt Overall – Category B

- Contingency: The outage of Bridgeville-Cottonwood 115 kV line with one of the Humboldt Bay Power Plant units out of service
- LCR need: 136 MW (including 45 MW of QF/Self generation). The requirement for the market units refers to units on the 60 and 115 kV side
- Limiting component: Overload of the Humboldt-Trinity 115 kV line

Changes since the 2009 LCR study

Total LCR Need has increased by 19 MW

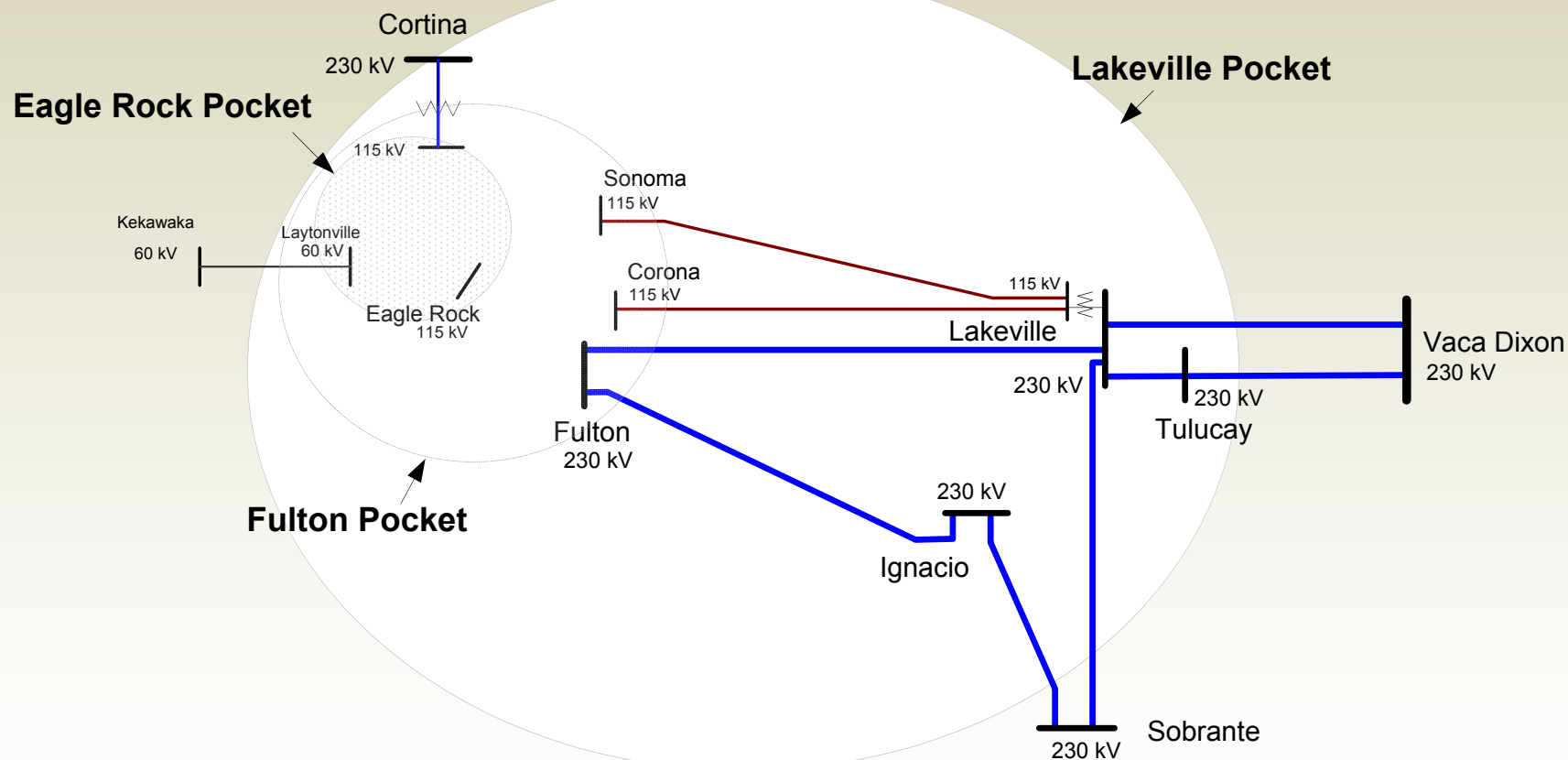
Mainly because of

- 1) The new Humboldt Bay repowering project is in-service
- 2) Load growth (2 MW higher)
- 3) The actual resource procurement has decreased by 8 MW
- 4) New deficiency of 27 MW in the 60 kV sub-area

North Coast/Bay Load and Resources (MW)

		2010
Load	=	1549
Transmission Losses	=	67
Total Load	=	1616
Market Generation	=	621
Muni Generation	=	128
QF Generation	=	134
Total Qualifying Capacity	=	883

North Coast and North Bay



Eagle Rock Sub-Area

Eagle Rock Sub-area – Category C

Contingency: Eagle Rock-Silverado- Fulton 115 kV line and Cortina #4 230/115 kV bank.

LCR need: 240 MW (includes 3 MW of QF/Muni generation and 3 MW of deficiency)

Limiting component: Thermal overload on Fulton-Hopland 60 kV line

Eagle Rock Sub-area – Category B

Contingency: Cortina #4 230/115 kV bank.

LCR need: 120 MW (includes 3 MW of QF/Muni generation)

Limiting component: Thermal overload on Fulton-Hopland 60 kV line

Fulton and Lakeville Sub-areas

Fulton Sub-area – Category C

Contingency: Fulton-Ignacio 230 kV line #1 and Fulton-Lakeville 230 kV line #1.

LCR need: 423 MW (includes 17 of QF and 64 MW of Muni generation)

Limiting component: Thermal overload on Sonoma-Pueblo 115 kV line #1

Lakeville Sub-area (NC/NB Overall) – Category B

Contingency: Vaca Dixon-Lakeville 230 kV line and DEC power plant out of service

LCR need: 857 MW (includes 216 MW of QF/Muni generation)

Limiting component: Thermal overloads on the Vaca Dixon-Tulucay 230 kV line

Changes since the 2009 LCR study

Total LCR Need has increased by 19 MW

Mainly because of:

1. Load growth in the area (approx 20 MW increase)
2. Decrease in NQC for some Geysers units

Your comments and questions are welcome

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