Local Capacity Requirements (LCR) for Year 2009 Study Results for the Big Creek/Ventura and LA Basin Areas



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



Yi Zhang Regional Transmission Engineer Department of Planning and Infrastructure Development California Independent System Operator (CAISO)

Table of Contents

Big Creek/Ventura LCR Study

- Big Creek Rector
- Big Creek Rector Vestal
- Big Creek Pardee Antelope
- Big Creek Ventura
- LA Basin LCR Study
 - LA Basin total requirement
 - Barre sub-area study



Big Creek/Ventura Boundary Transmission Lines

- Vincent-Antelope 230 kV Line
- Mesa-Antelope 230 kV Line
- Sylmar-Pardee #1 230 kV Line
- Sylmar-Pardee #2 230 kV Line
- Eagle Rock-Pardee #1 230 kV Line
- Vincent-Pardee 230 kV Line
- Vincent-Santa Clara 230 kV Line



3

Big Creek/Ventura Area 2009 Load & Resources

Load

| Load | Pump Load | Transmission Losses | Total |
|------|-----------|---------------------|-------|
| (MW) | (MW) | (MVV) | (MW) |
| 4415 | 405* | 151 | 4971 |

* DWR Pump load

Available Generation

| | QF/Wind | Muni | Nuclear | Market | Max. Qualifying Capacity |
|---------------|---------|-------|---------|--------|--------------------------|
| | (MV) | (MVV) | (MV) | (MW) | (MW) |
| Available Gen | 1463 | 0 | 0 | 3981 | 5444 |



Big Creek/Ventura Area



Stakeholder Meeting, March 4th, 2008 – LCR 2009

Big Creek-Rector Sub-area LCR Study

- Most critical contingency:
 - The loss of one of the Vestal-Rector 230kV lines followed by the loss of Eastwood generation
- Limiting components:
 - Thermally overload the remaining Vestal-Rector 230 kV line.
- LCR requirement:
 - 603 MW (includes 0 MW QF/Wind units, 0 MW Muni units and 0 MW nuclear units)





Big Creek-Rector-Vestal Sub-area LCR Study

- Most critical contingency:
 - The loss of one of the Magunden-Vestal 230kV lines followed by the loss of Eastwood generation
- Limiting components:
 - Thermally overload the remaining Magunden-Vestal 230 kV line.
- LCR requirement:
 - 733 MW (includes 130 MW of QF/Wind units, 0 MW of Muni units and 0 MW of nuclear units)



Big Creek-Pardee-Antelope Sub-area LCR Study

Most critical contingency:

- The loss of two of the Vincent-Lugo 500kV lines
- Limiting components:
 - Thermally overload the Vincent-Antelope 230 kV line.
- LCR requirement:

8

 2745MW (includes 1075MW of QF/Wind generation, 0 MW of Muni generation and 0 MW of nuclear generation)



Big Creek/Ventura Area LCR Study

- Category C LCR:
 - Most critical contingency:
 - The loss of Lugo-Victorville 500 kV followed by the loss of Sylmar-Pardee #1 or #2 230 kV line
 - Limiting components:
 - Thermally overload the remaining Sylmar-Pardee #1 or #2 230 kV line (emergency rating 1315MVA/3300 Amps modeled in the basecase).
 - LCR requirement:
 - 3116 MW (includes 1281 MW of QF/Wind generation, 0 MW of Muni generation and 0 MW of nuclear generation)
- Category B LCR:

9

- Most critical contingency:
 - The loss of Ormond Beach #2 unit followed by the loss of Sylmar-Pardee #1 or #2 230 kV line
- Limiting components:
 - Thermally overload the remaining Sylmar-Pardee #1 or #2 230 kV line (emergency rating 1315MVA/3300 Amps modeled in the basecase).
- LCR requirement:
 - 2958 MW (includes 1281 MW of QF/Wind generation, 0 MW of Muni generation and 0 MW of nuclear generation)



LA Basin Area



Stakeholder Meeting, March 4th, 2008 – LCR 2009

California ISO

LA Basin Area Boundary Transmission Lines

- San Onofre San Luis Rey #1, #2, & #3 230 kV Lines
- San Onofre Talega #1 & #2 230 kV Lines
- Lugo Mira Loma #1, #2 & #3 500 kV Lines
- Sylmar Eagle Rock 230 kV Line
- Sylmar Gould 230 kV Line
- Vincent Mesa Cal 230 kV Line
- Antelope Mesa Cal 230 kV Line
- Vincent Rio Hondo #1 & #2 230 kV Lines
- Eagle Rock Pardee 230 kV Line
- Devers Palo Verde 500 kV Line
- Devers Coachelv 230 kV Line
- Mirage Ramon 230 kV Line
- Mirage Julian Hinds 230 kV Line



LA Basin Area 2009 Load & Resources

Load

| Load | Pump Load | Transmission Losses | Total |
|-------|-----------|---------------------|-------|
| (MVV) | (MVV) | (MW) | (MVV) |
| 19612 | 22* | 202 | 19836 |

* MWD Pump load

Available Generation

| | QF/Wind | Muni | Nuclear | Market | Max. Qualifying |
|---------------|---------|------|---------|--------|-----------------|
| | (MW) | (MW) | (MW) | (MW) | Capacity (MW) |
| Available Gen | 791 | 508 | 2246 | 8737 | 12282 |



Barre Sub-area



13

Barre Sub-area LCR Study

- Most critical contingency:
 - The loss of the Ellis-Barre 230kV line followed by the double line outage of Songs-Santiago 230kV lines
- Limiting components:
 - Voltage collapse in the Barre sub-area
- LCR Requirement:
 - 3990MW (includes 431MW of QF/Wind generation, 197 MW of Muni generation and 0 MW of nuclear generation)



LA Basin LCR Study

Most Critical Contingency:

 The loss of one of the SONGS units, followed by the loss of Palo Verde-Devers 500 kV line

Limiting Components:

 South of Lugo operating rating (6400MW with new Rancho Vista 500kV substation)

LCR Requirement:

 10225 MW (includes 791 MW of QF/Wind generation, 508 MW of Muni generation, 2246MW of nuclear generation)



Stakeholder Comments



Your comments and questions are welcome

For written comments, please send to: <u>RegionalTransmission@caiso.com</u>



