

Year 2008 Local Capacity Requirements Study

Big Creek/Ventura Area and LA Basin Area

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 - This is the study for LA Basin LCR
 - ✓ LA Basin total requirement✓ Barre sub-area study

Extended Study for LA Basin

- This is to present the concerns in operating related to LA Basin
 - ✓ North of Lugo + LA Basin





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Big Creek/Ventura Boundary Transmission Lines

- 1. Vincent-Antelope 230 kV Line
- 2. Mesa-Antelope 230 kV Line
- 3. Sylmar-Pardee #1 230 kV Line
- 4. Sylmar-Pardee #2 230 kV Line
- 5. Eagle Rock-Pardee #1 230 kV Line
- 6. Vincent-Pardee 230 kV Line
- 7. Vincent-Santa Clara 230 kV Line



Big Creek/Ventura Area 2008 Load & Resources

Load

Load	Pump Load	Transmission Losses	Total
(MW)	(MW)	(MW)	(MW)
4435	420*	156	5011

* DWR Pump load

Available Generation

	QF/Wind	Market	Max. Qualifying		
	(MW)	(MW)	Capacity (MW)		
Available Gen	1463	3933	5396		





Big Creek/Ventura Area Study

Contingency Category C:

Most critical contingency:

Loss of the Lugo-Victorville 500 kV followed by Sylmar-Pardee #1 or #2 230 kV line

Limiting components:

Thermally overload the remaining Sylmar-Pardee #1 or #2 230 kV line.

LCR Need:

3568 MW including (1463 MW of QF/Wind)

Contingency Category B:

Most critical contingency:

Loss of Sylmar-Pardee #1 (or # 2) line with one of the Ormond Beach Unit # 1 or #2 out of service

Limiting components:

Thermally overload the remaining Sylmar-Pardee #1 or #2 230 kV line.

LCR Need:

3562 MW including (1463 MW of QF/Wind) Yi Zhang / ISO Regional Transmission North / March 21, 2007











LA Basin Area Boundary Transmission Lines

- 1. San Onofre San Luis Rey #1, #2, & #3 230 kV Lines
- 2. San Onofre Talega #1 & #2 230 kV Lines
- 3. Lugo Mira Loma #1, #2 & #3 500 kV Lines
- 4. Sylmar Eagle Rock 230 kV Line
- 5. Sylmar Gould 230 kV Line
- 6. Vincent Mesa Cal 230 kV Line
- 7. Antelope Mesa Cal 230 kV Line
- 8. Vincent Rio Hondo #1 & #2 230 kV Lines
- 9. Eagle Rock Pardee 230 kV Line
- 10. Devers Palo Verde 500 kV Line
- 11. Devers Harquahala 500 kV Line
- 12. Mirage Coachelv 230 kV Line
- 13. Mirage Ramon 230 kV Line
- 14. Mirage Julian Hinds 230 kV Line

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LA Basin Area 2008 Load & Resources

Load

Load	Pump Load	Transmission Losses	Total
(MW)	(MW)	(MW)	(MW)
19409	22.5*	226	19648

* MWD Pump load

Available Generation

	QF/Wind	Muni	Nuclear	Market	Max. Qualifying
	(MW)	(MW)	(MW)	(MW)	Capacity (MW)
Available Gen	791	508	2246	8548	12093



LA Basin LCR Study

Contingency Category B:

Most critical contingency:

Loss of Palo Verde-Devers 500 kV line with one Songs unit out-of-service

Limiting components:

South of Lugo operating rating of 6100 MW

LCR Need:

10500 MW including (791 MW of QF/Wind, 508 MW of MUNI and 2246 MW of Nuclear)





• Recall the studies

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- 2007
 - Loss of Devers Valley 500 kV line, followed by loss of two Lugo Miraloma 230 kV lines # 2 & # 3; or loss of one SONG unit, followed by loss of Lugo – Miraloma 230 kV lines # 2 & # 3
 - Limited voltage violations
- **2008**
 - Loss of Palo Verde-Devers 500 kV line with one SONGS unit out of service
 - Protect South of Lugo 6100MW operating rating
- How was the 10500 MW obtained?
 - Current study 9420MW+Songs #3 unit output = 10500 MW
 - If 2007 study could have used the existing 6100 MW operating path rating, the requirement would have been:
 - 8843+Songs #3 unit output = 8843+1080 = 9923 MW
 - At the time of 2007 study the operating path rating was 5600 MW as such, the requirement may have been:
 - 8843+Songs #3 unit output+900= 8843+1080+900 = **10823 MW**
 - The South of Lugo upgrades help reduce the need from 2007 to 2008.





Barre Sub-area

• To identify the local problem in the vicinity of Barre substation inside the LA Basin:

1) Contingency:

Loss of the one of Huntington units followed by double line outage of Songs-Santiago 230kV lines

Limit:

Voltage collapse

2) Contingency:

Loss of double lines of Songs-Santiago 230kV Line

Limit:

Thermal overload on the Ellis-Barre 230kV line.

It is not a stand alone LCR study area

- Requirement:
 - 3,100 MW other generation effective to protect the constraints (including 431 MW of QF and 197 MW of Muni generation).
- This number is included in the LA Basin 10,500 MW requirement already.







LA Basin + North of Lugo

To present the concerns in the extended area of LA Basin plus North of Lugo:

Most critical contingency: Loss of the Palo Verde-Devers 500 kV line followed by loss of the El Dorado-Lugo 500kV line Limiting components: Thermal overload on the Victorville-Lugo 500kV line Requirement: 11,750 MW (10500MW LA Basin + 1250MW North of Lugo)

North of Lugo Overview

- •Available capacity 2455MW
- •Connect to Lugo substation through five 230kV lines
- •The units in North of Lugo relieve the load of Victorville-Lugo 500kV line
- •The units in North of Lugo hurt the South of Lugo constraint

At this time this need is being identified, however it will not be included in the 2008 LSE procurement as a new LCR study area.

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Big Creek/Ventura and LA Basin Summary

LCR Area		QF/Wind (MW)	Muni (MW)	Nuclear (MW)	Market (MW)	Deficiency (MW)	Total MW Requirement
Big Creek/Ventura	Category C	1463	0	0	2105	0	3568
	Category B	1463	0	0	2099	0	3562
LA Basin	Category B/C	791	508	2246	6955	0	10500



Stakeholder Comments