Local Capacity Requirements (LCR) for Year 2009
Fresno and Kern Areas

LCR Stakeholder Meeting, April 10th, 2008, Folsom CA

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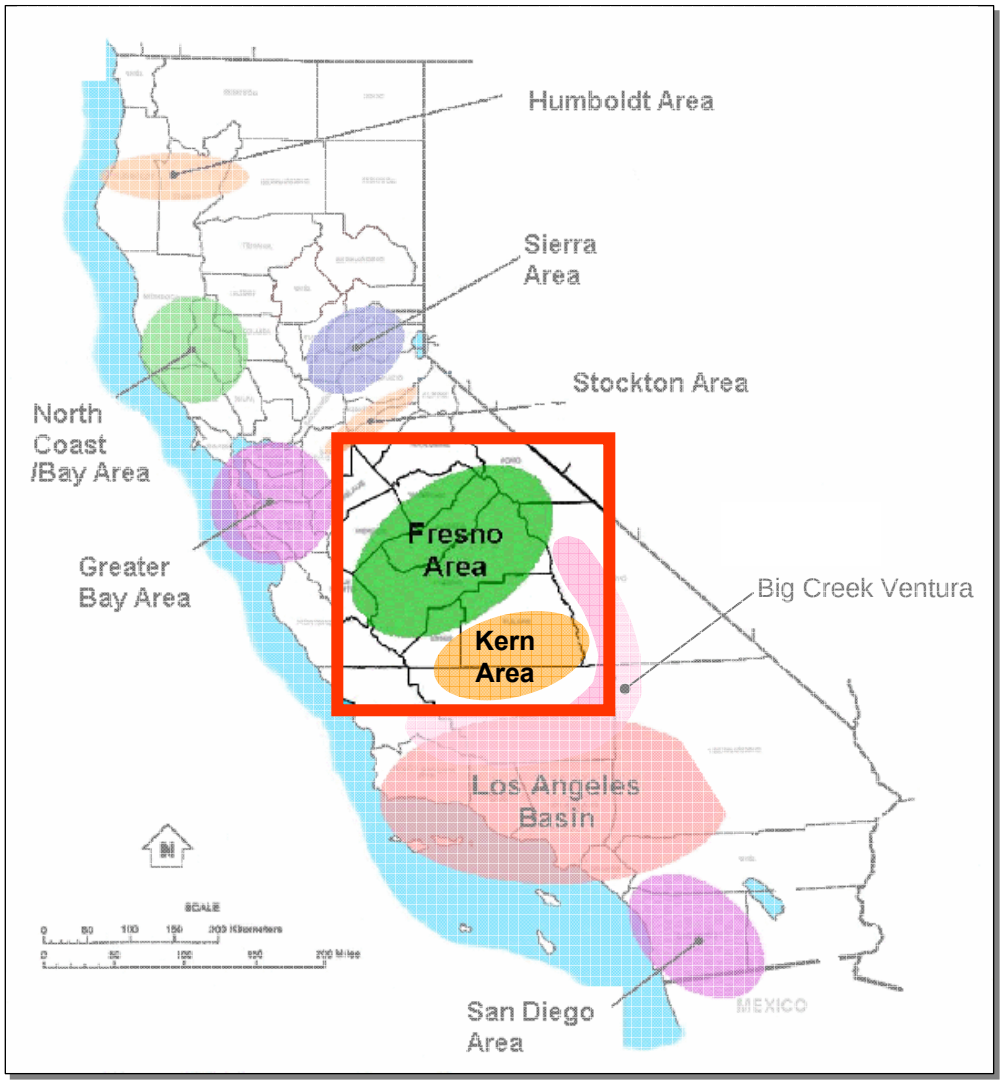
LCR Areas in This Study
Fresno and Kern Areas



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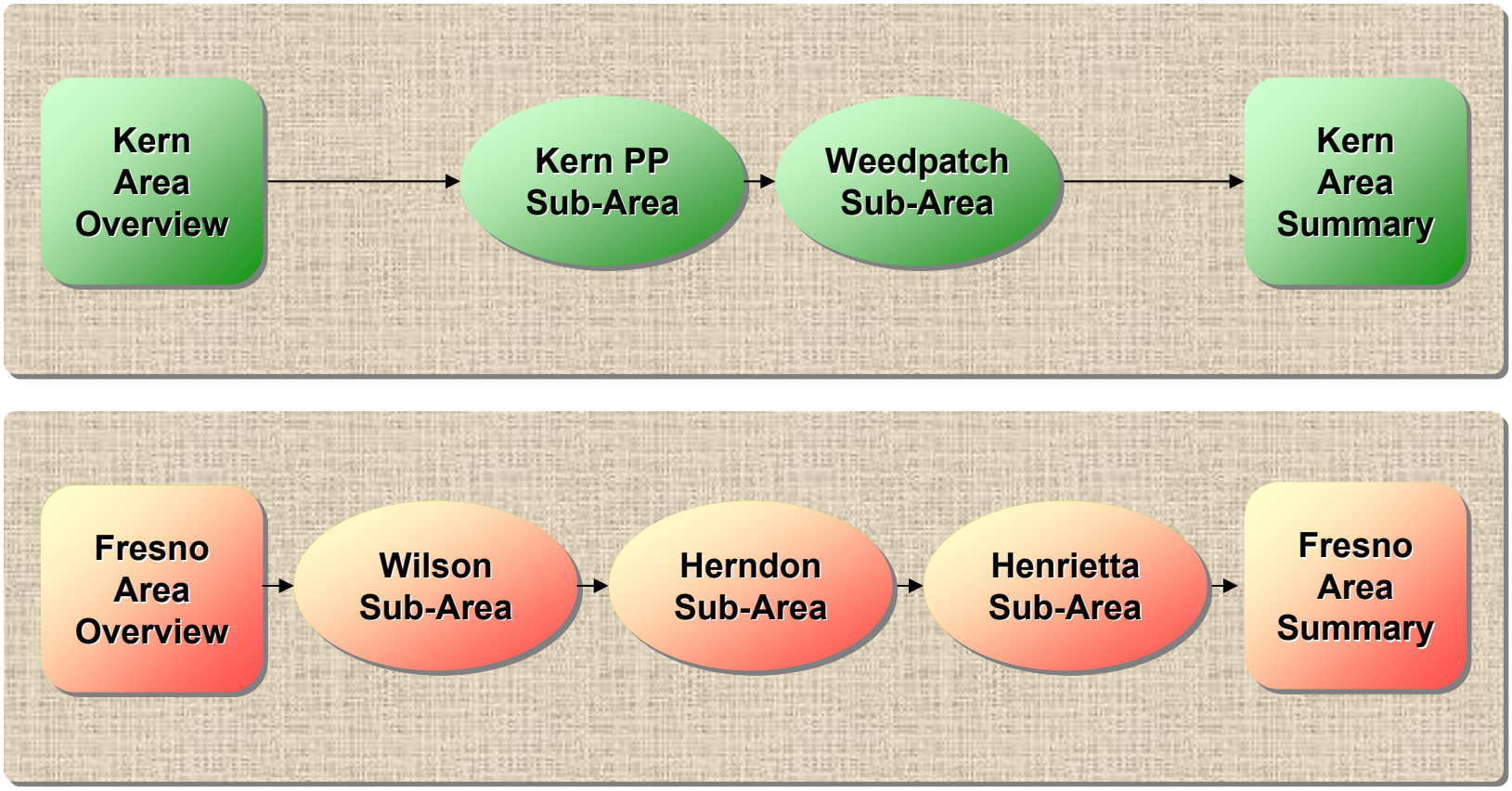


In This Presentation

Updates since the Last Stakeholder Meeting on March 4th

Kern Area

Kern area LCR remains the same as the last presentation

Show comparison of LCR results for 2008 and 2009

Fresno Area

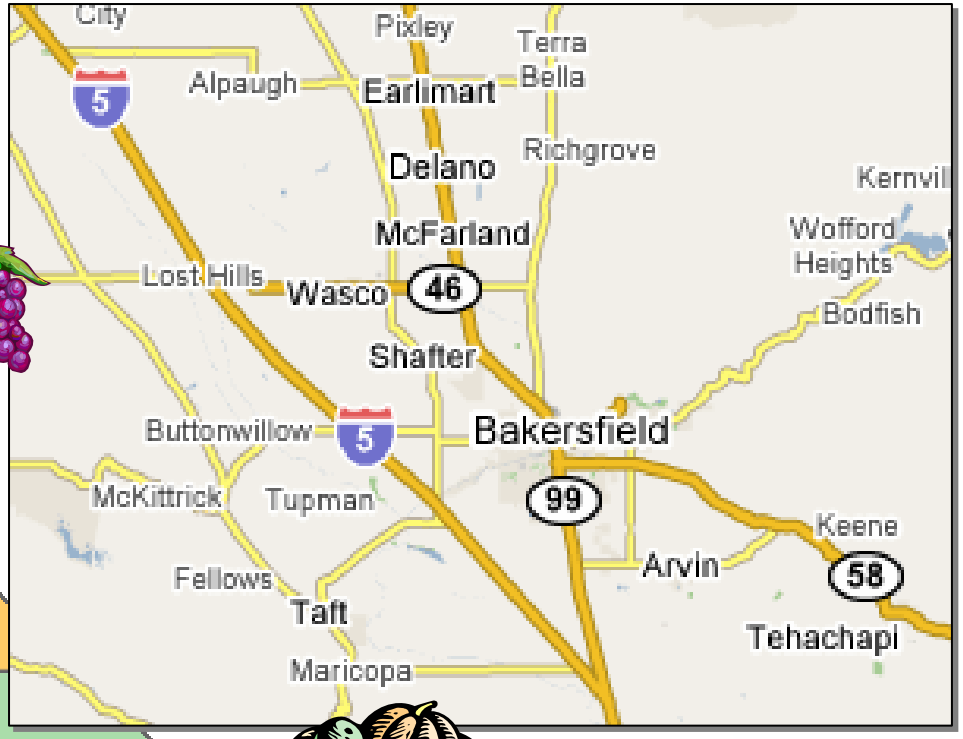
Removed new generation Q#54 (120 MW, Aug 2009) due to cut-out date

Removed Herndon deficiency because of updated NQC data

Fresno area LCR is 12 MW less due to above change

Show comparison of LCR results for 2008 and 2009

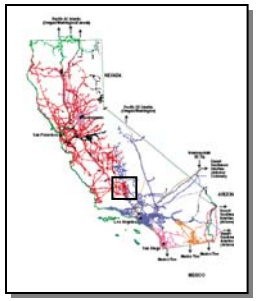
Kern Area Overview
Geography



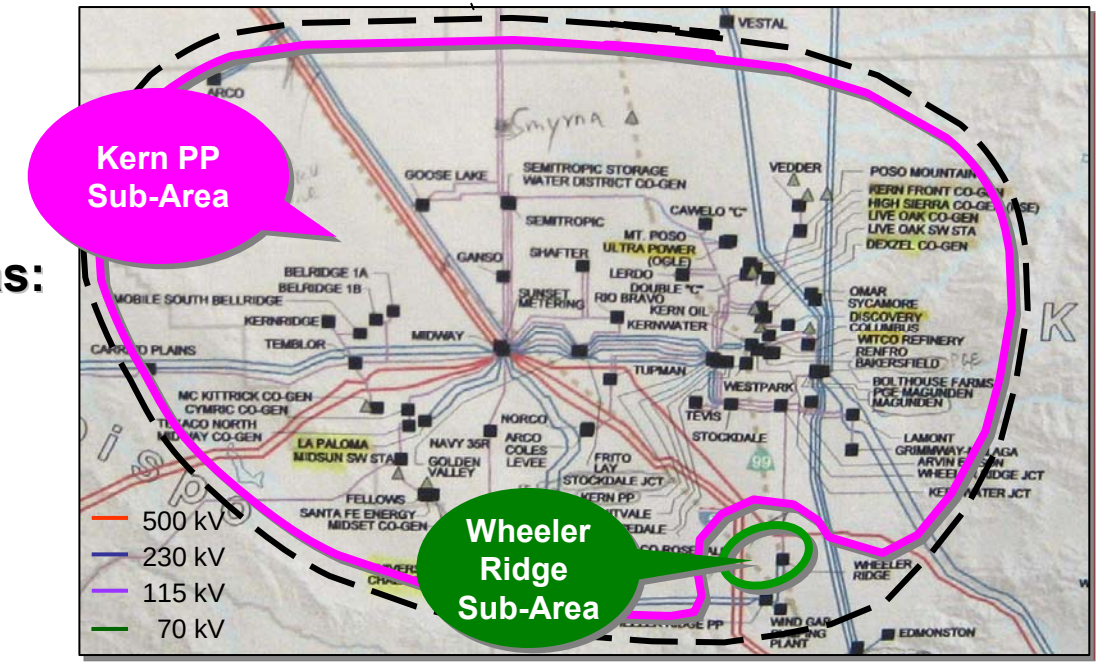
Kern Area Overview
Electrical Boundaries and LCR Sub-Areas

Electrical Boundaries:

- Gates – Midway 230 kV line
- Gates – Arco 230 kV line
- Morro Bay – Midway 230 kV lines #1 and #2
- Midway 230/115 kV transformers
- Smyrna – Semitropic – Midway 115 kV line
- Temblor – San Luis Obispo 115 kV line
- Arco 230/70 kV transformer
- Arco – Cholame 70 kV line



LCR Sub-Areas:



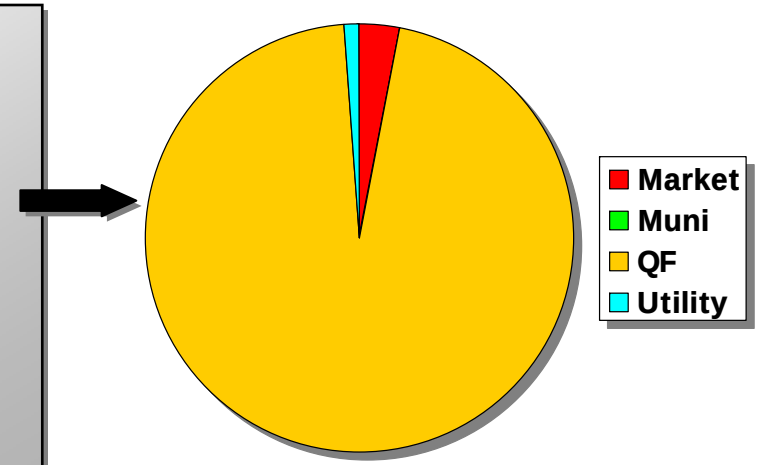
Kern Area Overview
Area Generation, Load and Transmission

Generation and Load

- Generation (Net Qualifying Capacity): 677 MW
- Load (1-in-10 Summer-Peak): 1316 MW

System Additions in 2008-2009

- New Generation: None
- Transmission Upgrades: None



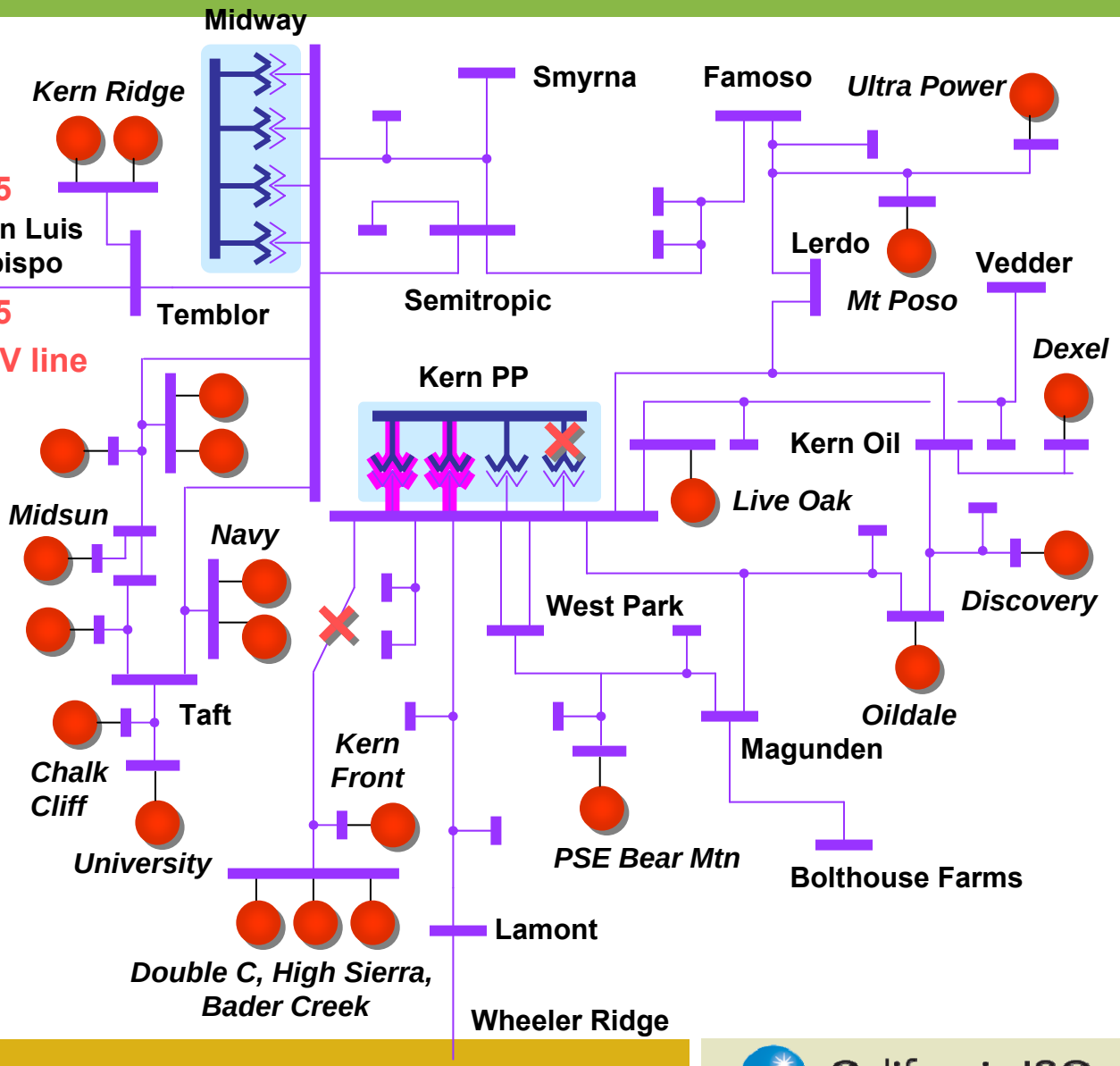
Kern Area LCR
Kern PP Sub-Area

Limiting Contingencies:

Category B:
- T-1: Kern PP 230/115 kV bank #5

Category C:
- T-1: Kern PP 230/115 kV bank #5
- L-1: Kern PP – Kern Front 115 kV line

Constrained Elements:
- Kern PP 230/115 kV bank #3
- Kern PP 230/115 kV bank #3a



LCR Results (MW):

Contingency	Cat. B	Cat. C
LCR	**208**	**401**
Including:		
QF	639	639
Muni	0	0
Deficiency	0	0

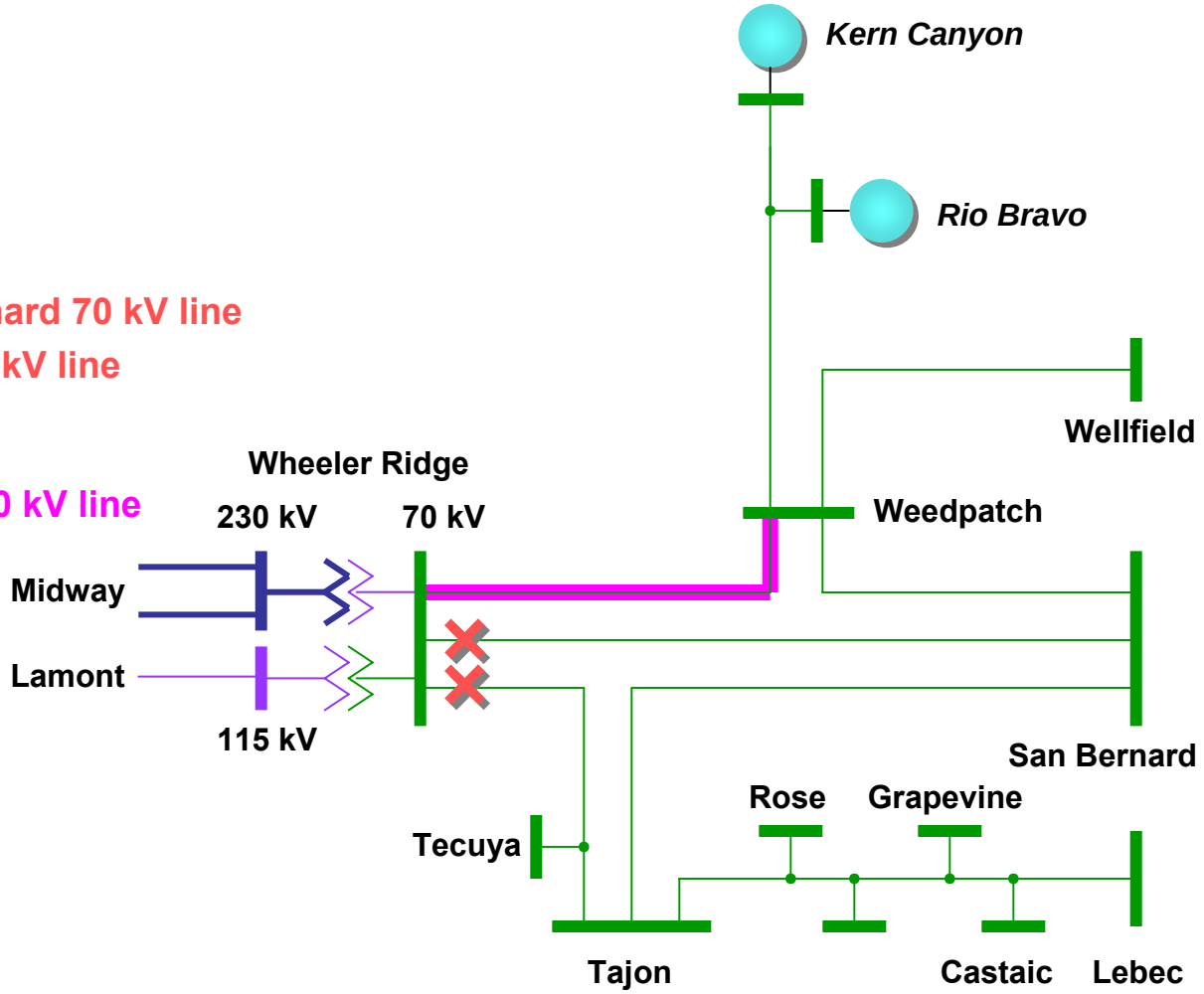
Kern Area LCR
Weedpatch Sub-Area

Limiting Contingencies:

Category B:
None

Category C:
- **L-1: Wheeler Ridge – San Bernard 70 kV line**
- **L-1: Wheeler Ridge – Tejon 70 kV line**

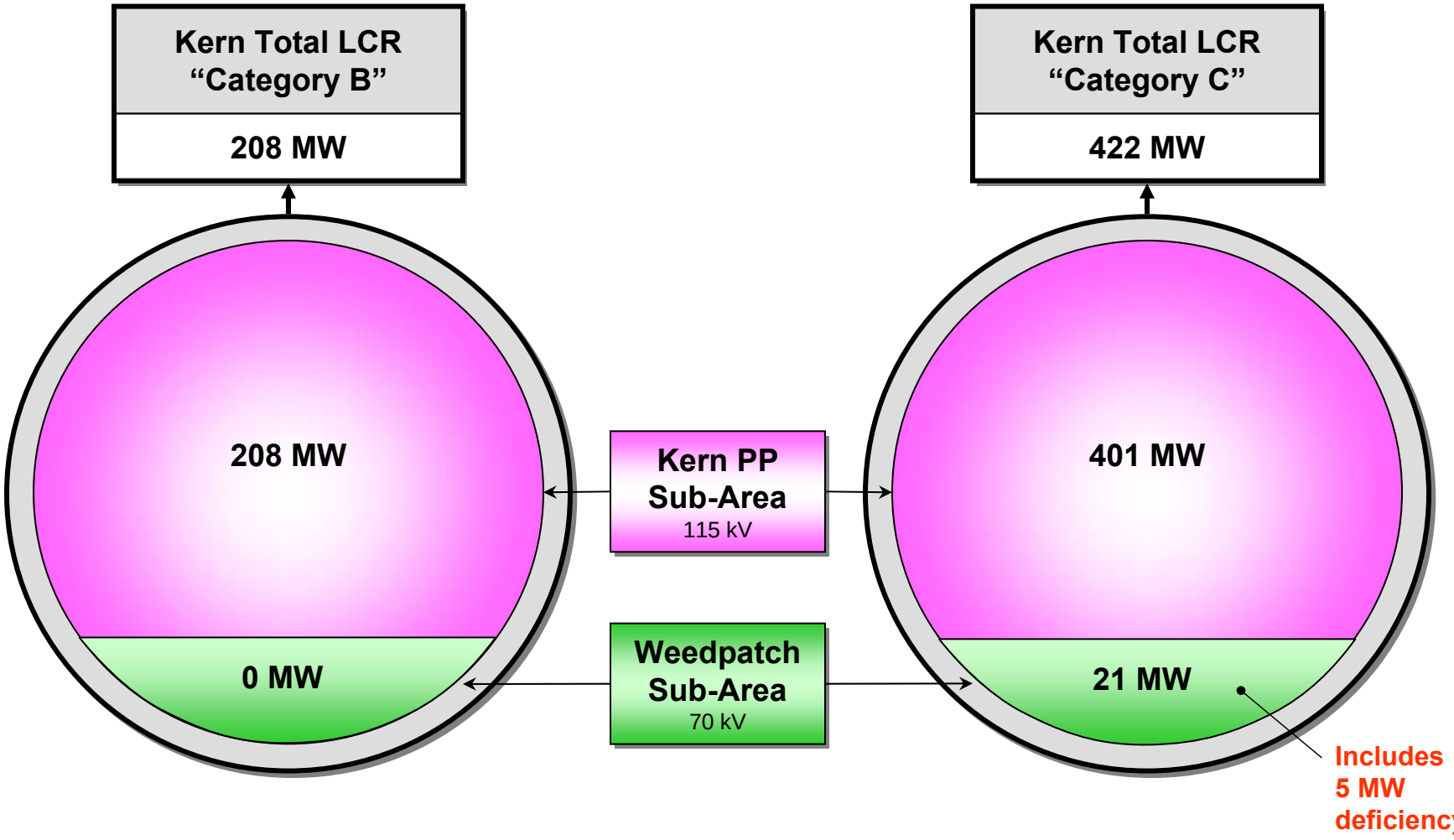
Constrained Element:
- **Wheeler Ridge – Weedpatch 70 kV line**



LCR Results (MW):

Contingency	Cat. B	Cat. C
LCR	**0**	**21**
Including:		
QF	0	6
Muni	0	0
Deficiency	0	5

Kern Area LCR
Summary of 2009 LCR



Kern Area LCR
Comparison of Year 2008 and 2009

Study Assumptions on Generation, Load and Path Flow (MW)

	Year 2008	Year 2009
Generation	646	**677**
Load	1324	**1316**

Note: The generation numbers are based on Net Qualifying Capacity (NQC)

"Category B" LCR (MW)

	Year 2008	Year 2009
Kern PP	259	**208**
Weedpatch	0	**0**
Kern Area Total	259	**208**

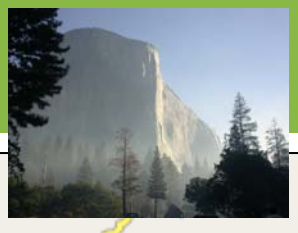
"Category C" LCR (MW)

	Year 2008	Year 2009
Kern PP	448	**401**
Weedpatch	38	**21**
Kern Area Total	486	**422**

115 kV 70 kV

With more NQC available, able to utilize effective units more
The overall effect is decrease of LCR by 64 MW (Category C) from 2008 to 2009

Fresno Area
Geography

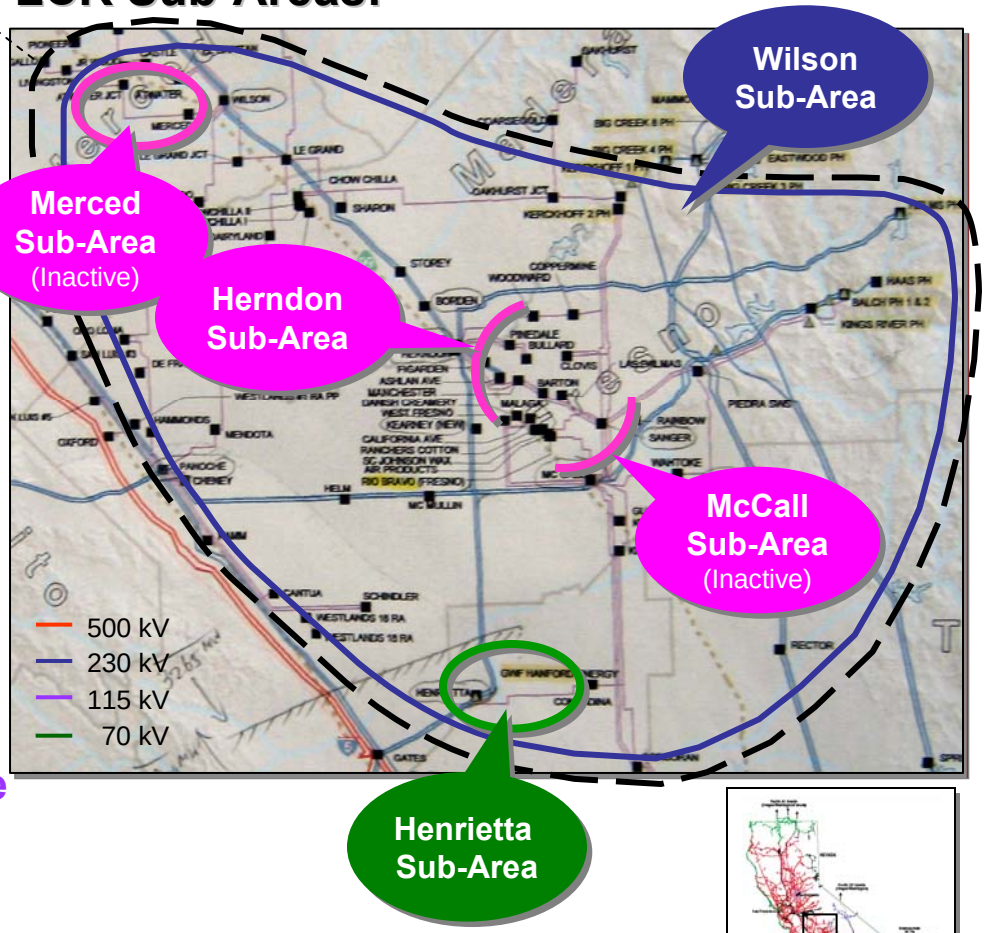


Fresno Area
Electrical Boundaries and LCR Sub-Areas

Electrical Boundaries:

- Gates – Henrietta Tap 1 230 kV line
- Gates – Henrietta Tap 2 230 kV line
- Gates 230/115 kV transformer #1
- Gates – Panoche #1 230 kV line
- Gates – Panoche #2 230 kV line
- Coburn – Panoche 230 kV line
- Moss Landing – Panoche 230 kV line
- Los Banos – Panoche 230 kV line #1
- Los Banos – Panoche 230 kV line #2
- Dos Amigos – Panoche 230 kV line
- Warnerville – Wilson 230 kV line
- Melones – Wilson 230 kV line
- Los Banos #3 230/70 kV transformer
- Los Banos #4 230/70 kV transformer
- Smyrna – Alpaugh – Corcoran 115 kV line
- San Miguel – Coalinga #1 70 kV line

LCR Sub-Areas:

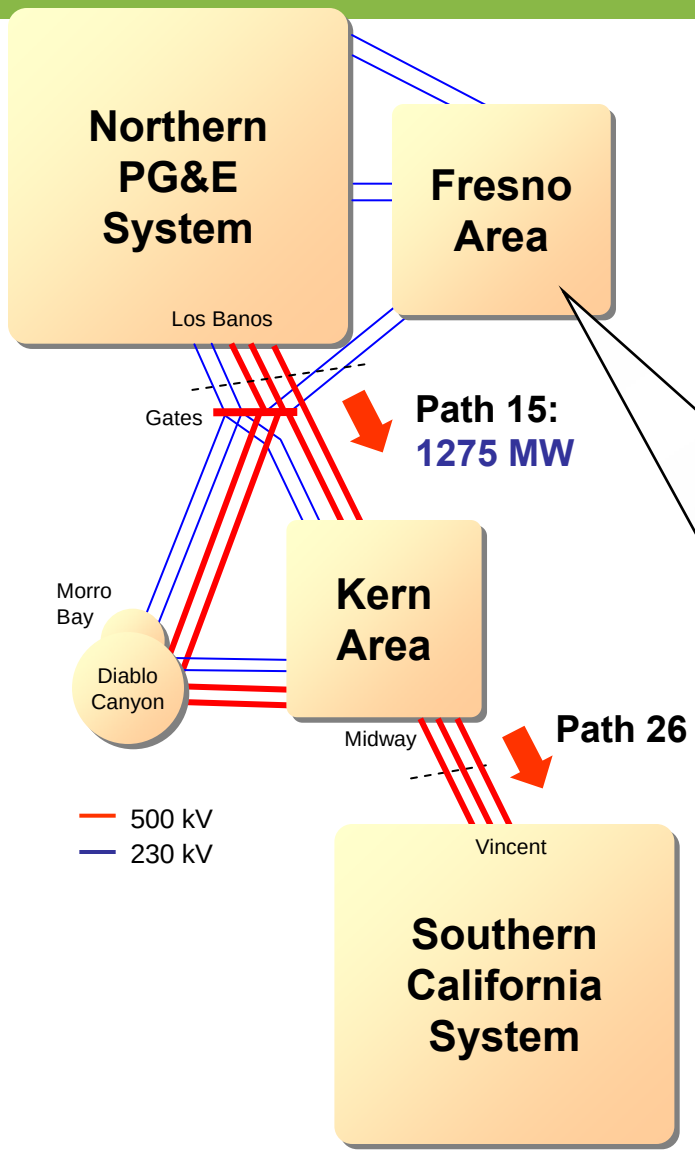


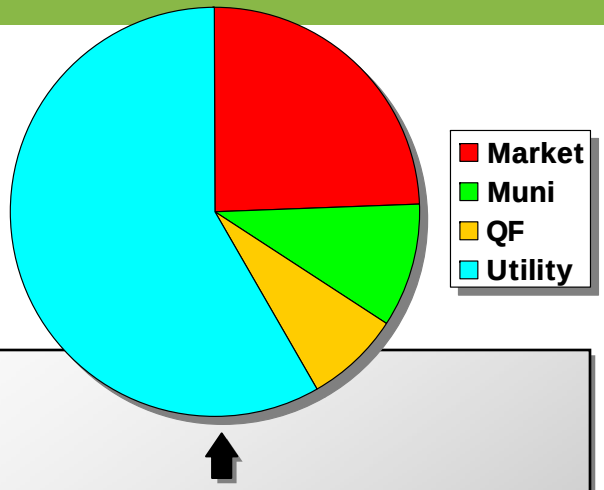
Note:

► Installation of Atwater SPS in 2008 eliminates the Merced LCR Sub-Area.

► Replacement of McCall 230/115 kV transformer #1 in 2008 eliminates the McCall LCR Sub-Area.

Fresno Area Overview
Area Generation, Load and Transmission





Generation and Load

- Generation (Net Qualifying Capacity): 2829 MW
- Load (1-in-10 Summer-Peak): 3381 MW

System Additions in 2008-2009

- New Generation
  - Project Q#75, 10.5 MW Biomass (Mar 2008)
  - Project Q#76, 10.5 MW Biomass (Apr 2008)
- Major Transmission Upgrades 2008-2009
  - Replacement of McCall 230/115 kV Bank #1 (May 2008)
  - Installation of Atwater SPS in Merced area (May 2008)
  - Re-rate of Henrietta 230/70 kV Bank #2 (Nov 2007)

Fresno Area LCR
Wilson Sub-Area

Limiting Contingencies:

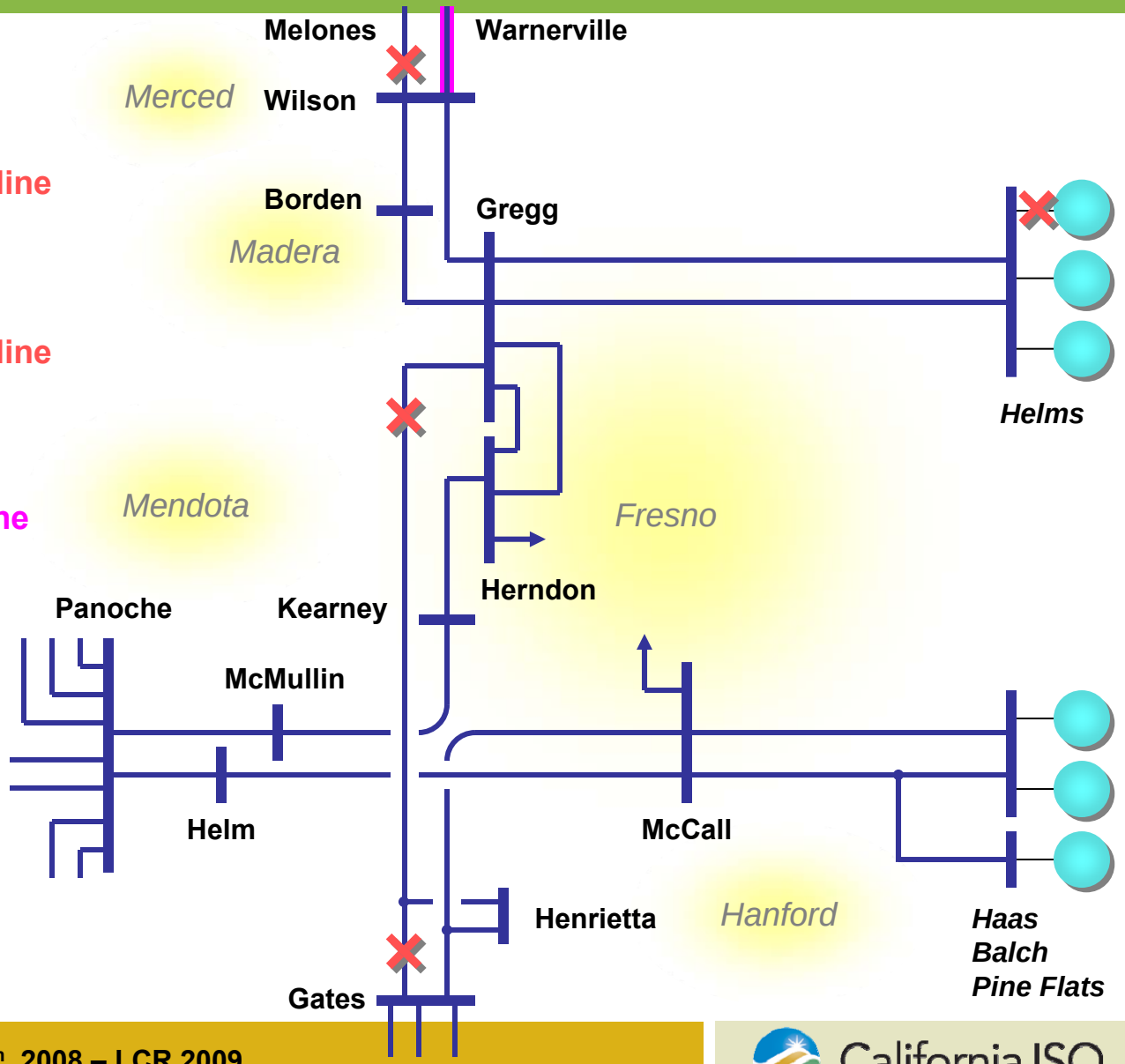
Category B:
- L-1: Melones – Wilson 230 kV line
- G-1: Helms unit #3

Category C:
- L-1: Melones – Wilson 230 kV line
- L-1: Gates-Gregg 230 kV line

Constrained Elements:
- Warnerville – Wilson 230 kV line

LCR Results (MW):

Contingency	Cat. B	Cat. C
LCR	2262	1913
Including:		
QF	216	216
Muni	294	294
Deficiency	0	0



Fresno Area LCR
Herndon Sub-Area

Limiting Contingency:

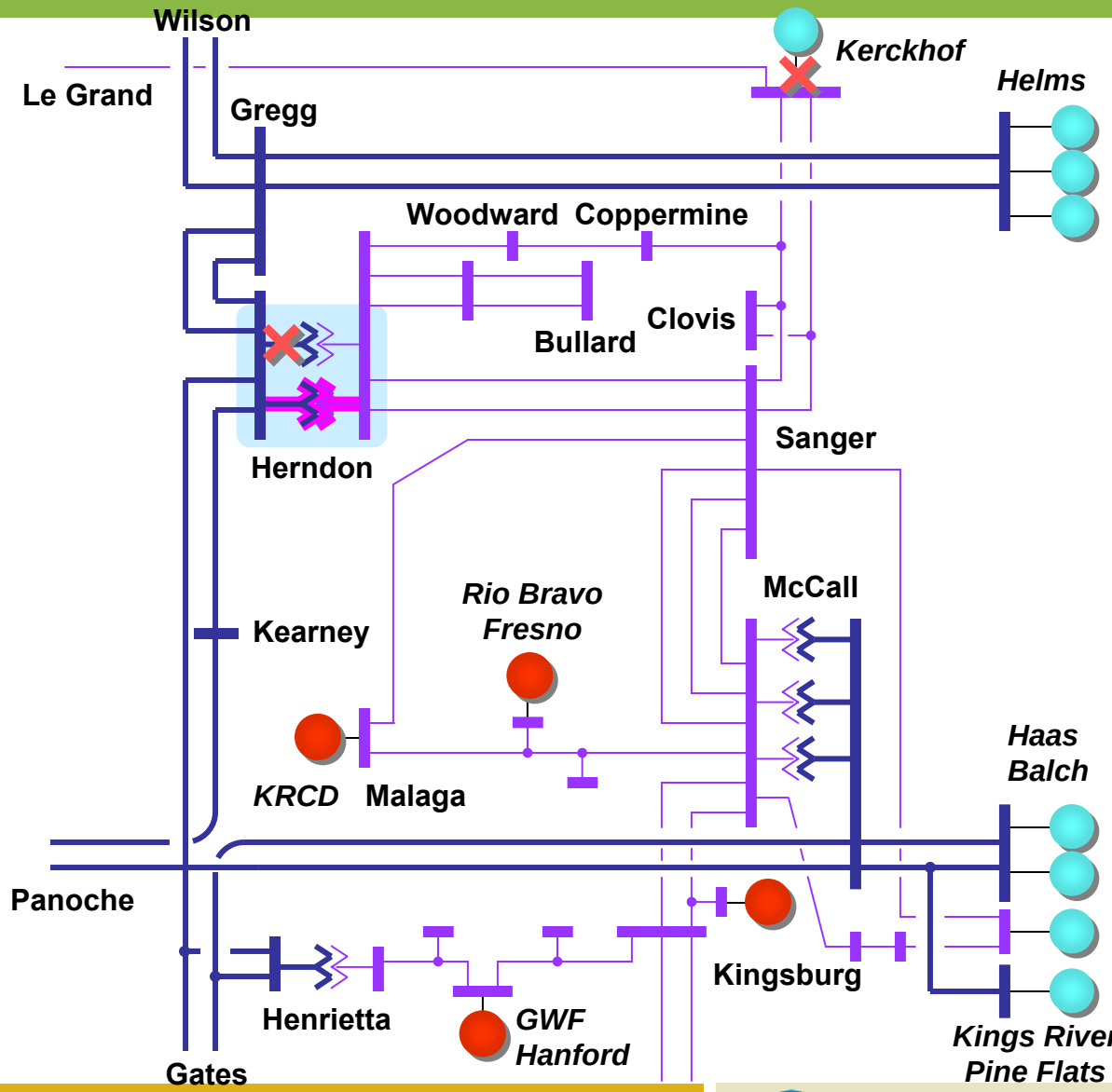
Category B:
- T-1: Herndon 230/115 kV bank #1

Category C:
- T-1: Herndon 230/115 kV bank #1
- G-1: Kerckhoff II unit

Constrained Element:
- Herndon 230/115 kV bank #2

LCR Results (MW):

Contingency	Cat. B	Cat. C
LCR	787	1150
Including:		
QF	52	52
Muni	225	225
Deficiency	0	0



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Fresno Area LCR
Henrietta Sub-Area

Limiting Contingencies:

Category B:

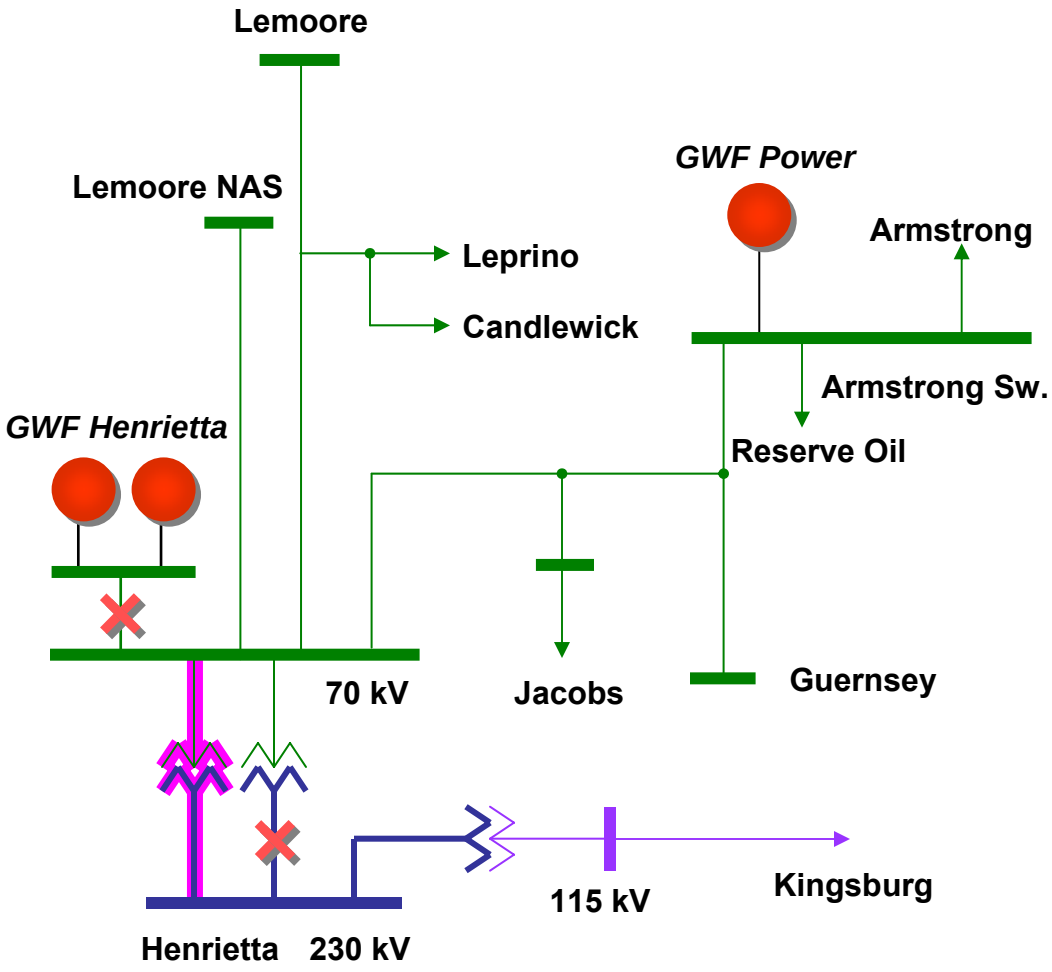
- T-1: Henrietta 230/70 kV bank #4

Category C:

- T-1: Henrietta 230/70 kV bank #4
- L-1: Henrietta – GWF Henrietta line

Constrained Element:

- Henrietta 230/70 kV bank #2

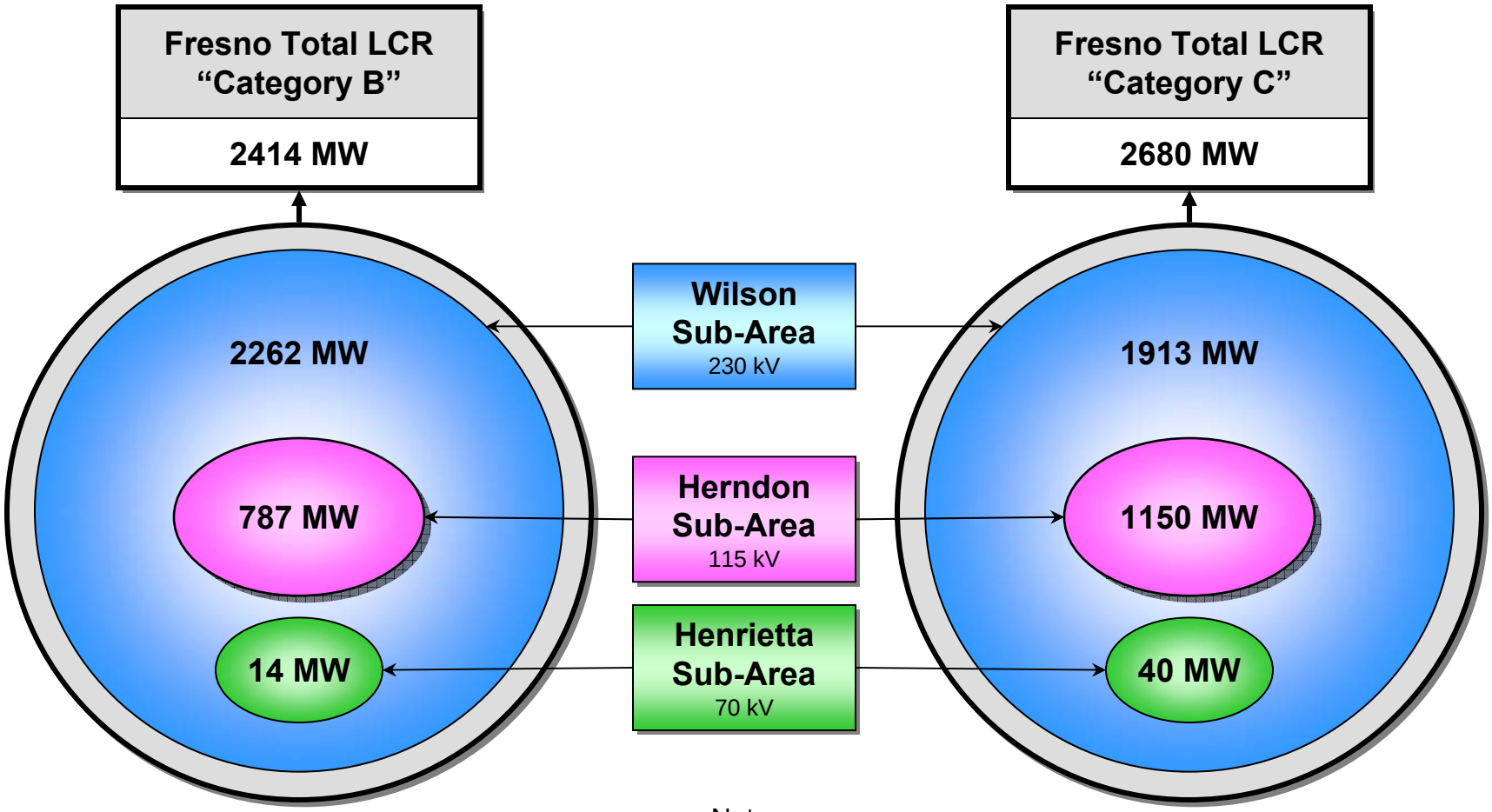


LCR Results (MW):

Contingency	Cat. B	Cat. C
LCR	14	40
Including:		
QF	24	24
Muni	0	0
Deficiency	0	0

Note:
In Nov 2007, for the Henrietta 230/70 kV transformer #2, its contingency limit was re-rated from 107 MVA to 115 MVA

Fresno Area LCR
Summary of 2009 LCR



Note:

In the Fresno area, due to overlapping of LCR sub-areas,
the "Fresno Total LCR" is *not* a simple sum, but rather an aggregated sum of LCR in individual sub-areas.

Fresno Area LCR
Comparison of Year 2008 and 2009

Study Assumptions on Generation, Load and Path 15 Flow (MW)

	Year 2008	Year 2009
Generation	2991	**2829**
Load	3260	**3381**
Path 15 (N-to-S)	-2100	**1275**

Note: The generation numbers are based on Net Qualifying Capacity (NQC)

"Category B" LCR (MW)

	Year 2008	Year 2009
Wilson	1505	**2262**
Herndon	639	**787**
McCall	0	**0**
Merced	0	**0**
Henrietta	32	**14**
Fresno Area Total	2212	**2414**

"Category C" LCR (MW)

	Year 2008	Year 2009
Wilson	1563	**1913**
Herndon	847	**1150**
McCall	0	**0**
Merced	87	**0**
Henrietta	141	**40**
Fresno Area Total	2382	**2680**

230 kV
115 kV
70 kV

Stakeholder Comments

Your comments and questions are welcome

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