

Year 2008

Local Capacity Requirements (LCR)

Greater Fresno and Kern Areas



Xiaobo Wang
Department of Planning and Infrastructure Development
California ISO

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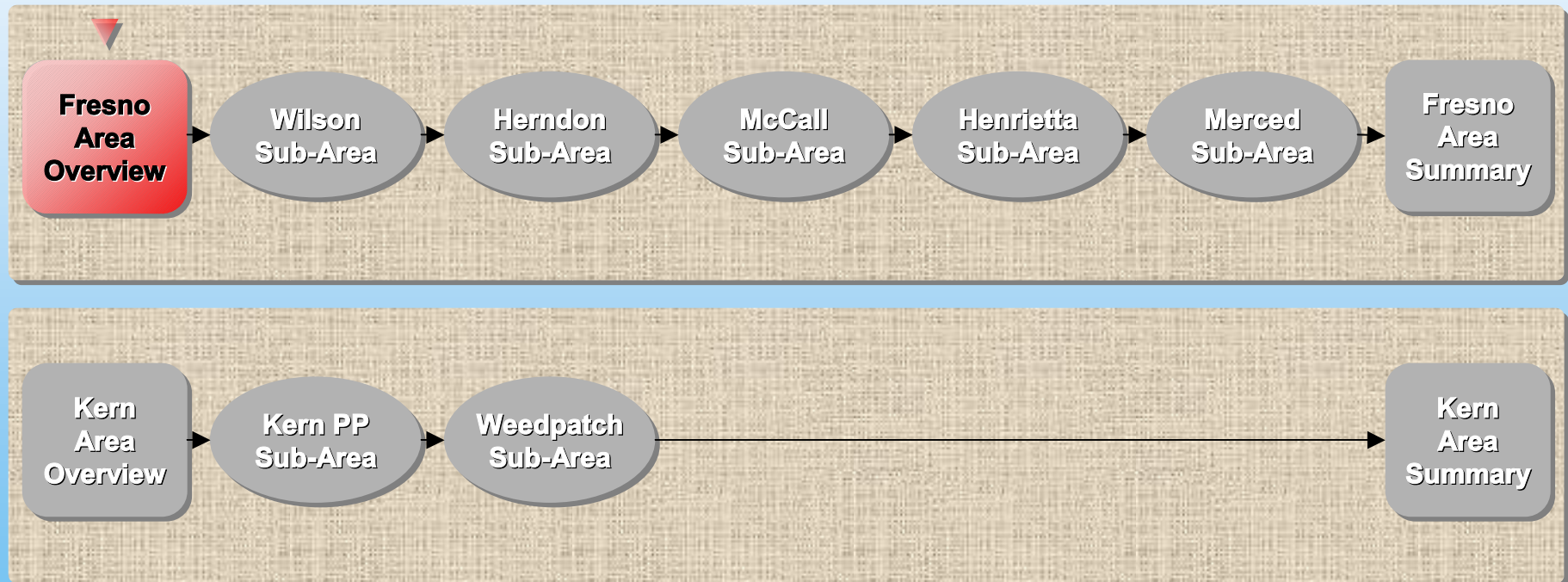
LCR Areas: Greater Fresno & Kern



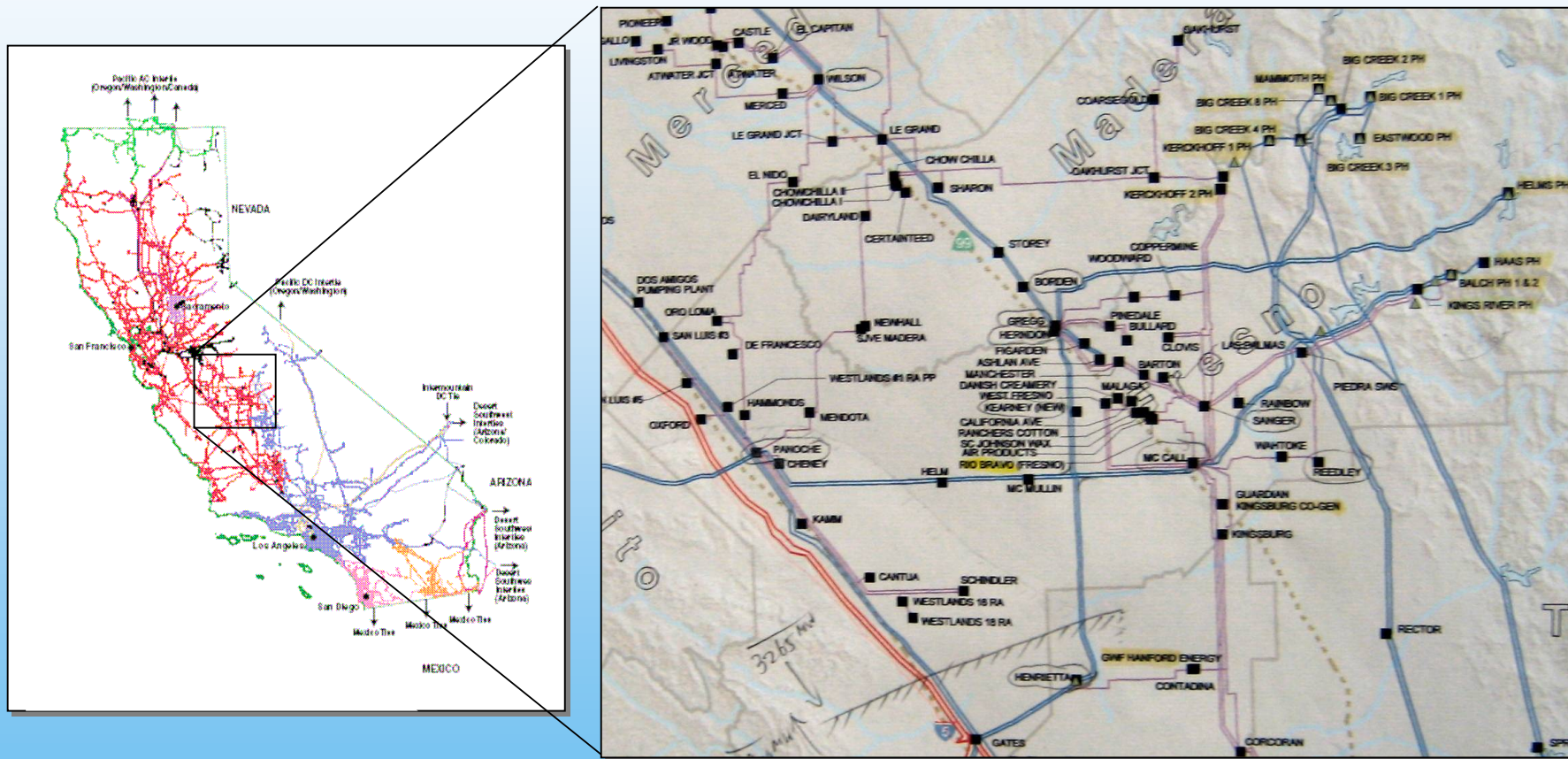


LCR for Greater Fresno & Kern Areas

Table of Contents



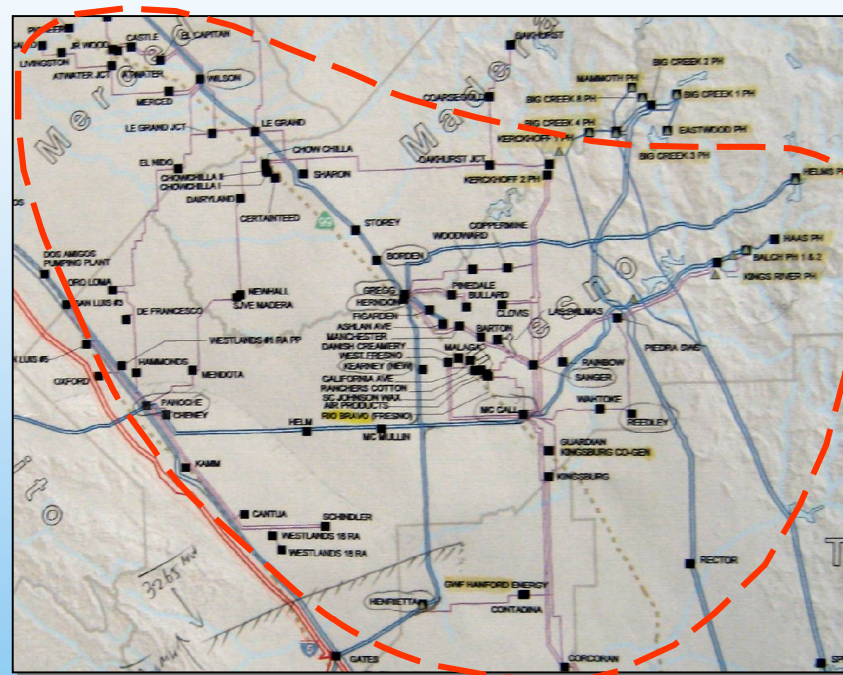
Greater Fresno Area



- 500 kV
- 230 kV
- 115 kV

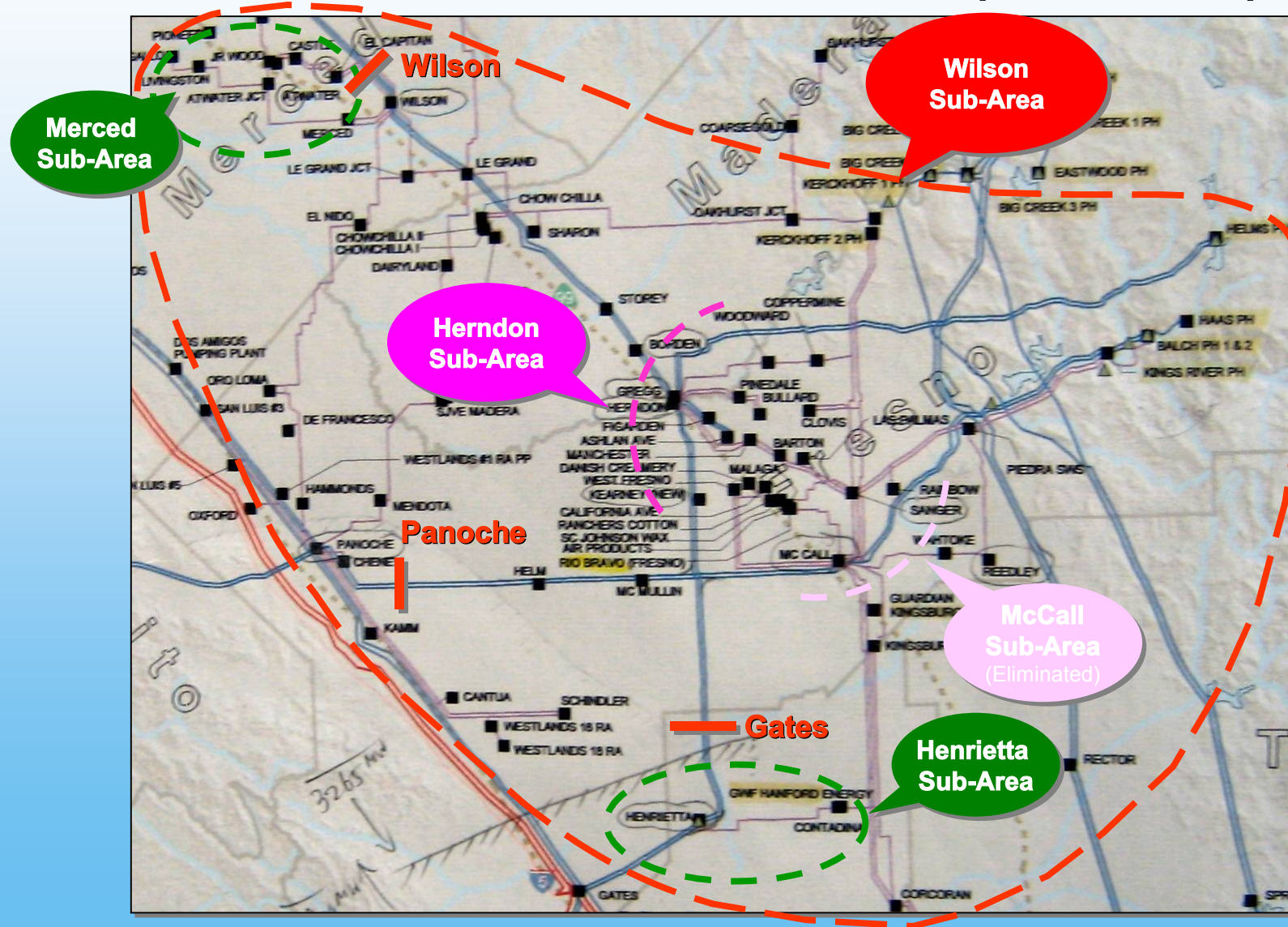
Greater Fresno Area Boundaries

- Gates – Henrietta Tap 1 230 kV line
- Gates – Henrietta Tap 2 230 kV line
- Gates #1 230/115 kV transformer
- 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





Greater Fresno LCR Constraints (Sub-Areas)



Greater Fresno Area

Load and Generation Resources

Area Load (1-in-10 Summer Peak)

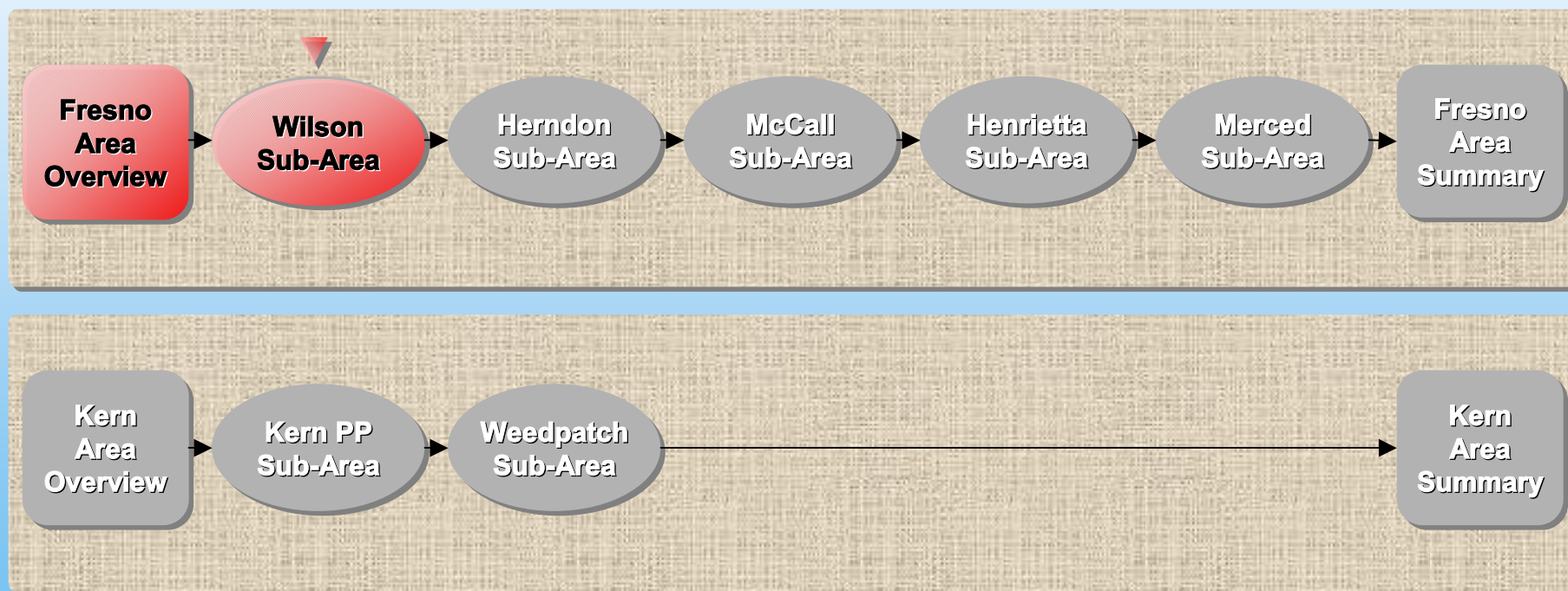
Customer Load:	3149 MW
Transmission Losses:	111 MW
Total:	3260 MW

Area Generation (Qualifying Capacity)

Market:	2495 MW
Muni:	292 MW
QF:	204 MW
Total:	2991 MW

LCR for Greater Fresno & Kern Areas

Table of Contents





Wilson Sub-Area

Category B

Limiting Contingency:

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

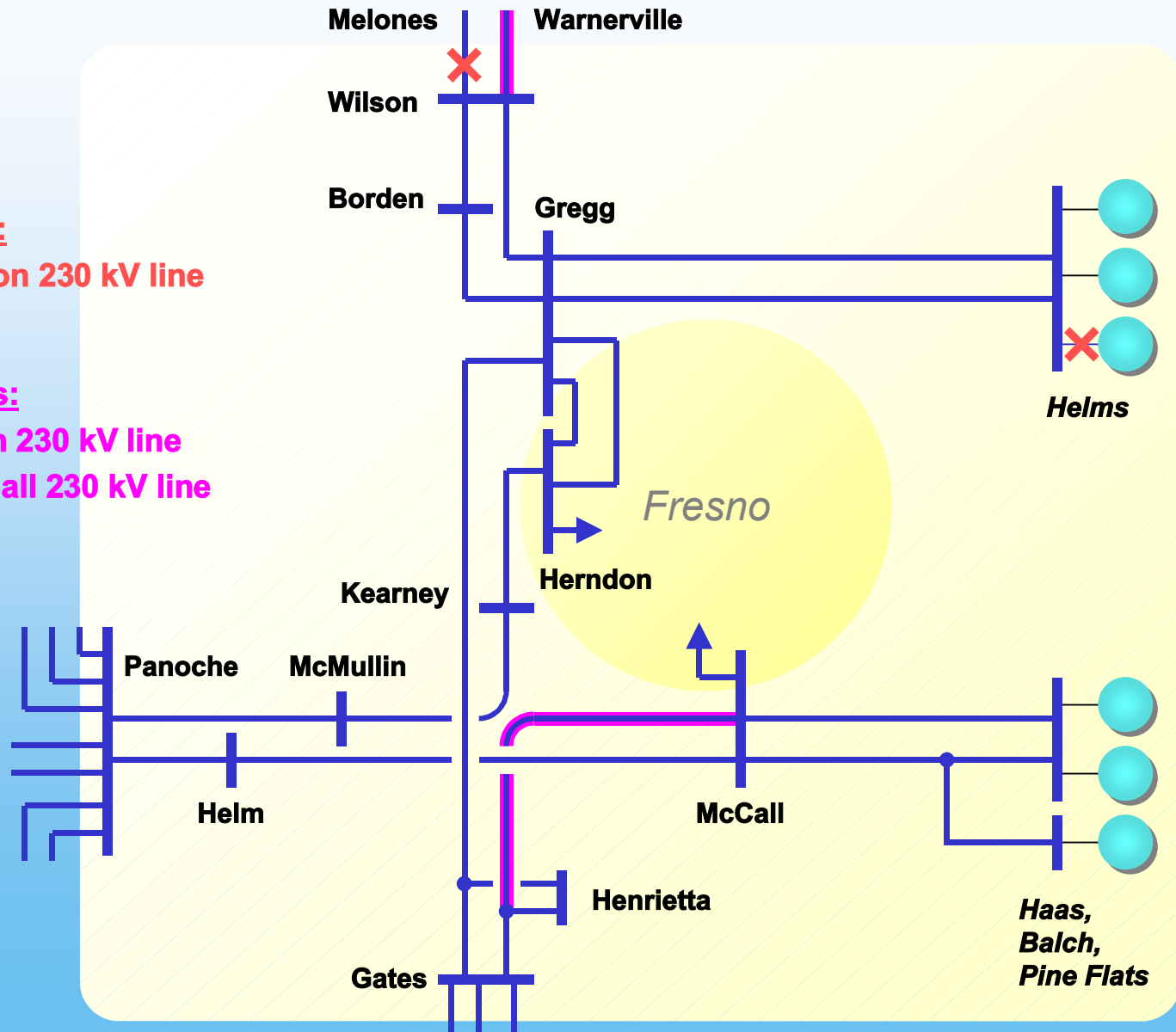
Constrained Elements:

- Warnerville – Wilson 230 kV line
- Henrietta Tap – McCall 230 kV line

LCR:

1505 MW

Market	1009 MW
QF	204 MW
Muni	292 MW
Deficiency	0 MW





Wilson Sub-Area

Category C

Limiting Contingencies:

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

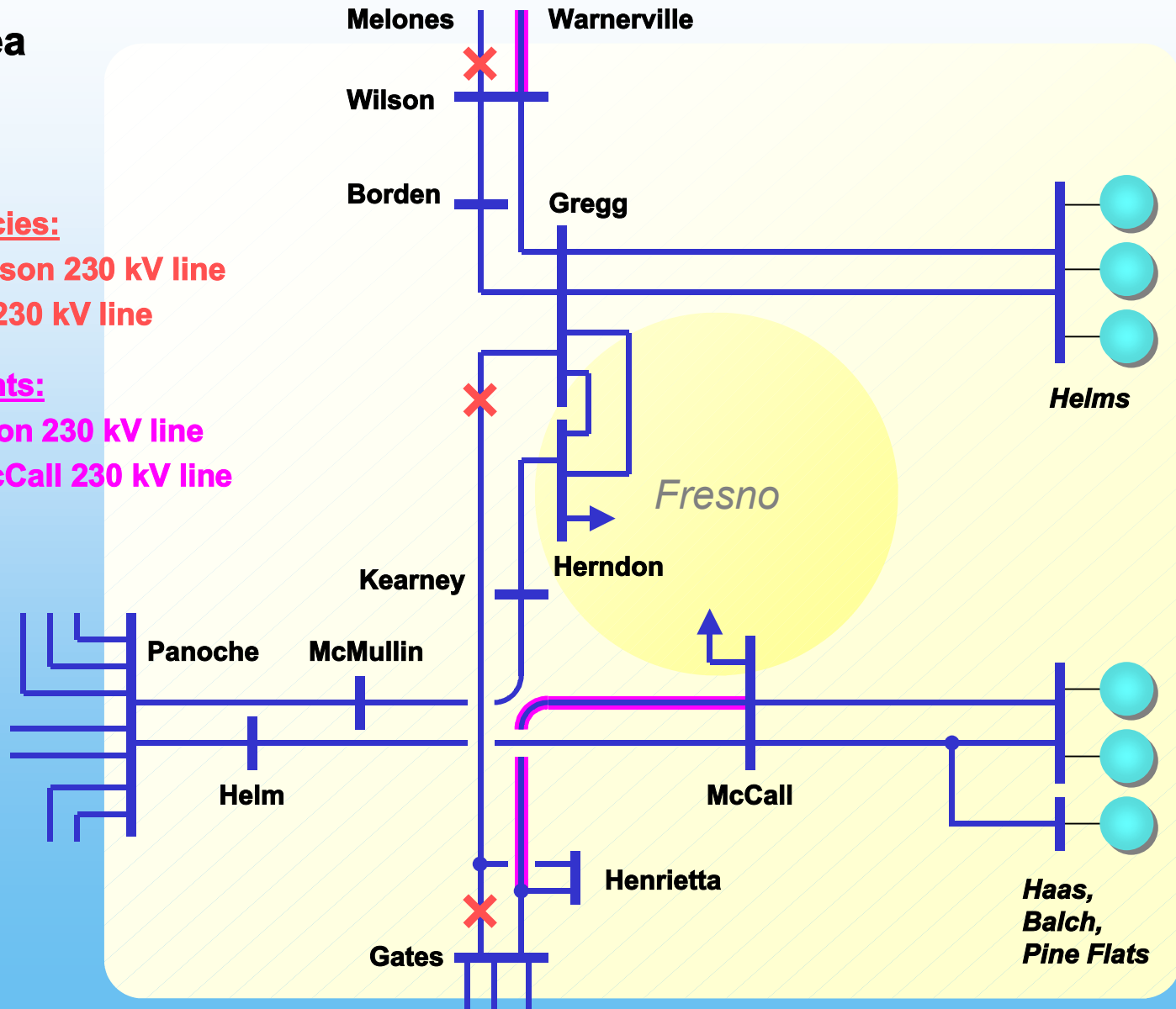
Constrained Elements:

- Warnerville – Wilson 230 kV line
- Henrietta Tap – McCall 230 kV line

LCR:

1563 MW

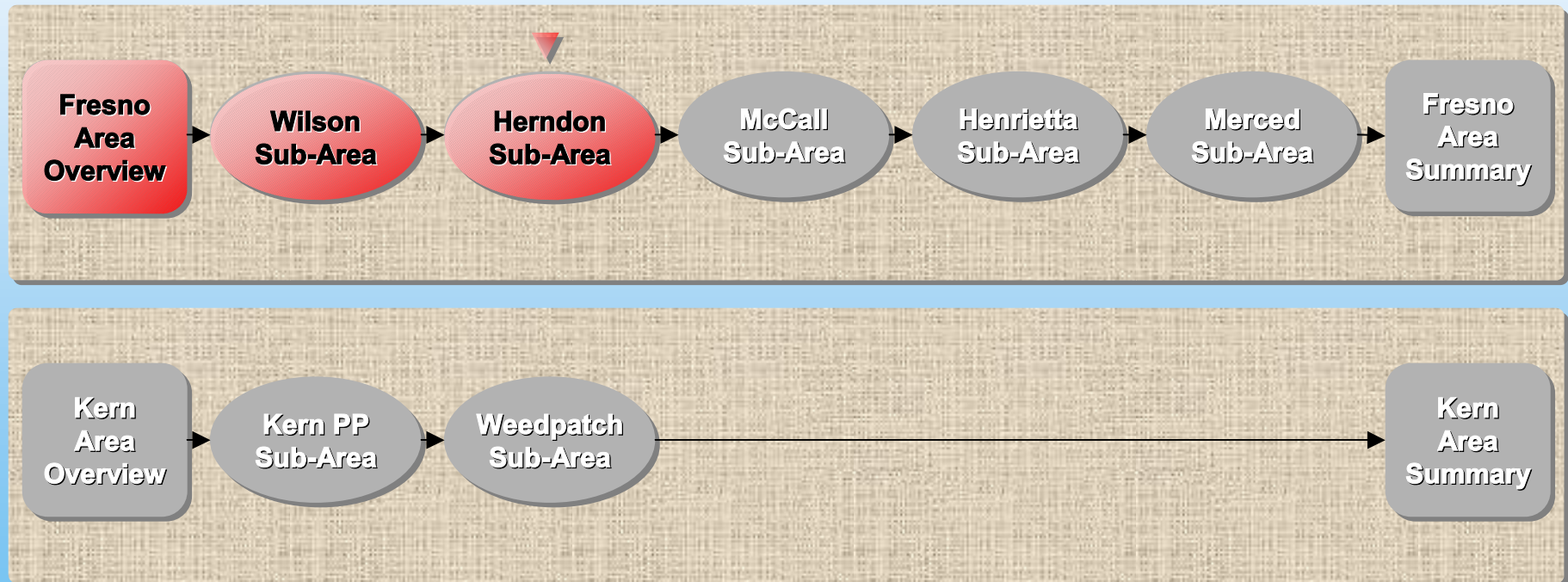
Market	1067 MW
QF	204 MW
Muni	292 MW
Deficiency	0 MW





LCR for Greater Fresno & Kern Areas

Table of Contents





Herndon Sub-Area

Category B

Limiting Contingency:

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

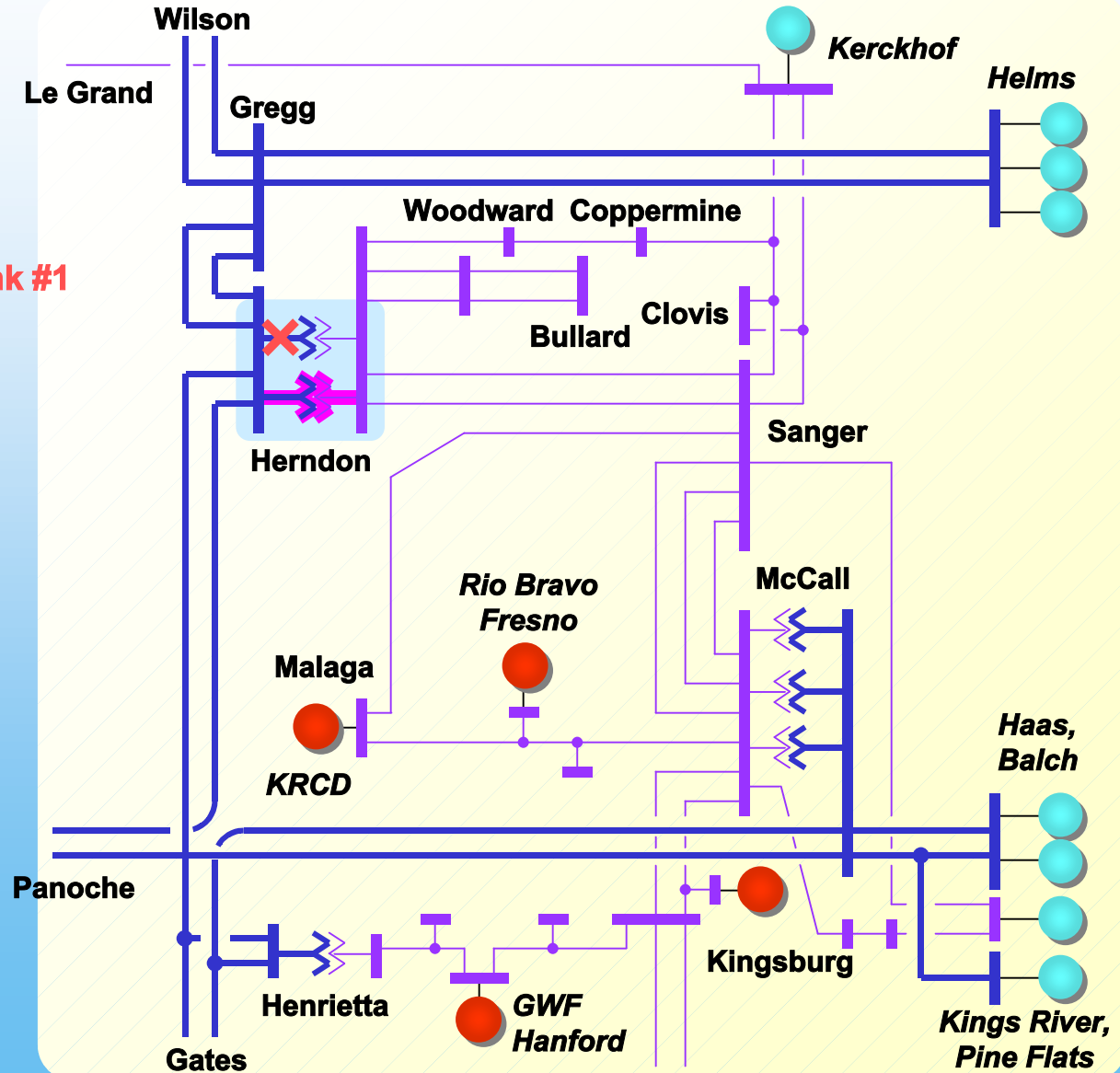
Constrained Element:

- Herndon 230/115 kV bank #2

LCR:

639 MW

Market	365 MW
QF	49 MW
Muni	225 MW
Deficiency	0 MW





Herndon Sub-Area

Category C

Limiting Contingencies:

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

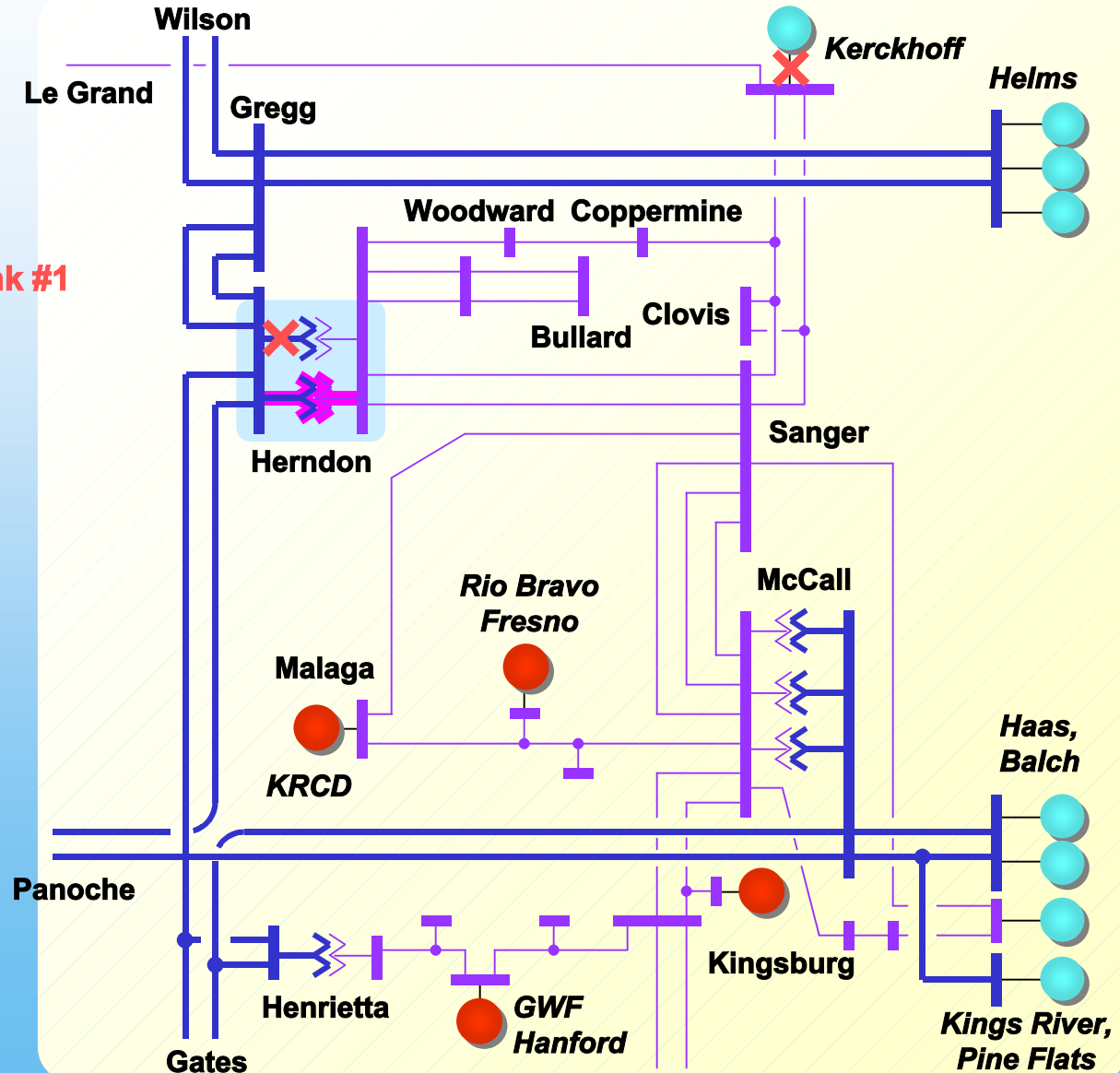
Constrained Element:

- Herndon 230/115 kV bank #2

LCR:

847 MW

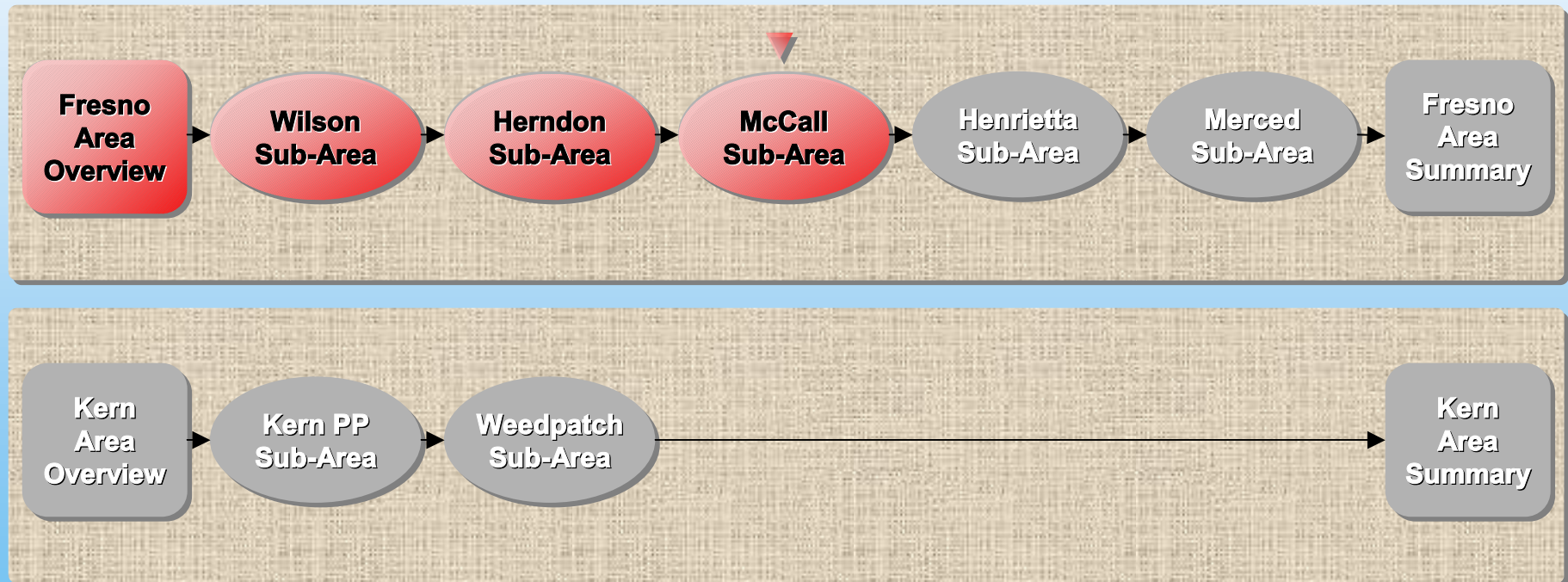
Market	573 MW
QF	49 MW
Muni	225 MW
Deficiency	0 MW





LCR for Greater Fresno & Kern Areas

Table of Contents





McCall Sub-Area

The limiting contingency was tripping of McCall 230/115 kV Bank #2 or #3, resulting in overload of Bank #1.

Per 2005 Expansion Plan, the McCall 230/115 kV Bank #1 will be replaced with a unit of larger capacity in May 2008.

As a result, the bottleneck is relieved; and the McCall Sub-Area is eliminated.

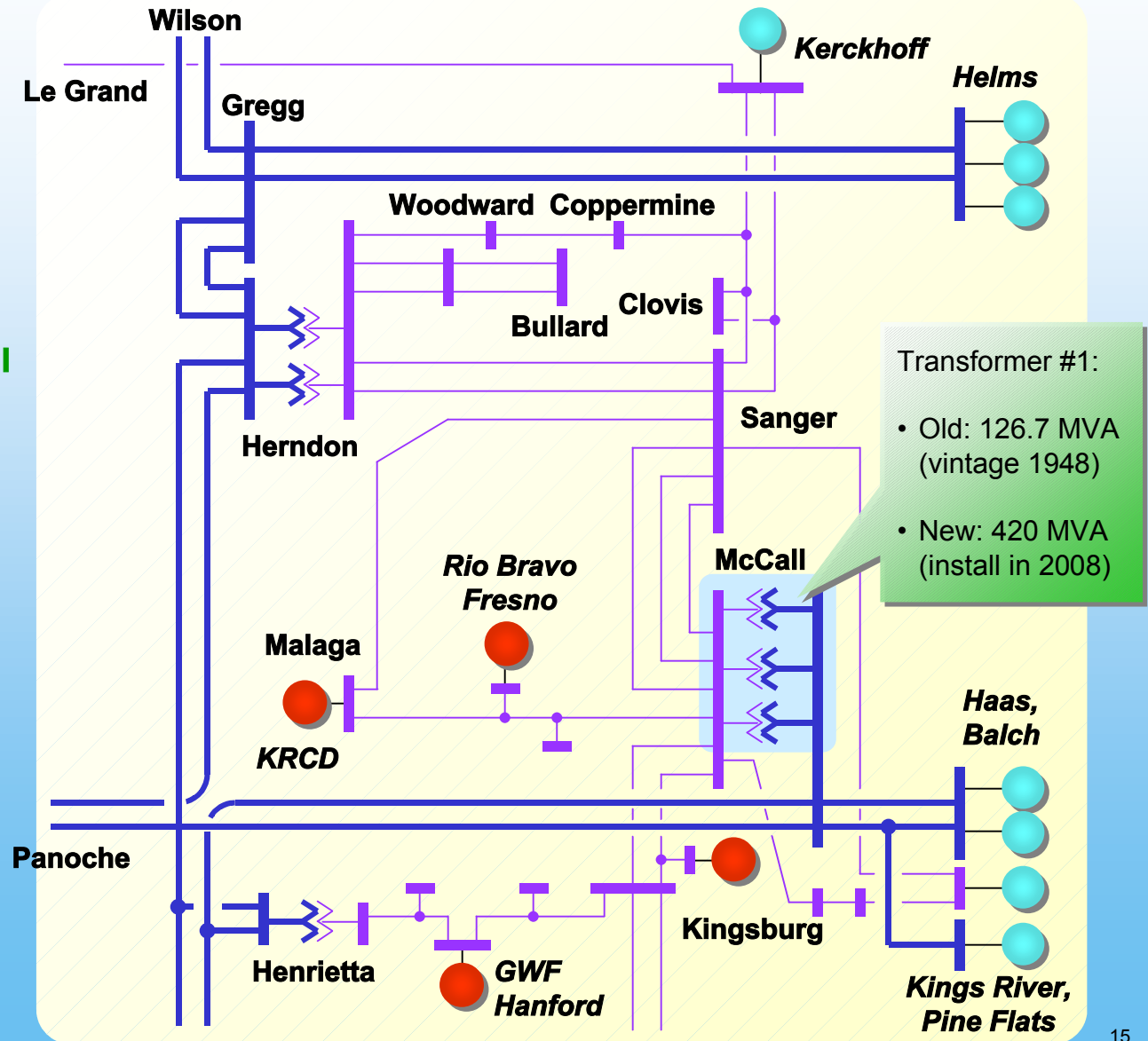


LCR:

0 MW

Market	0 MW
QF	0 MW
Muni	0 MW
Deficiency	0 MW

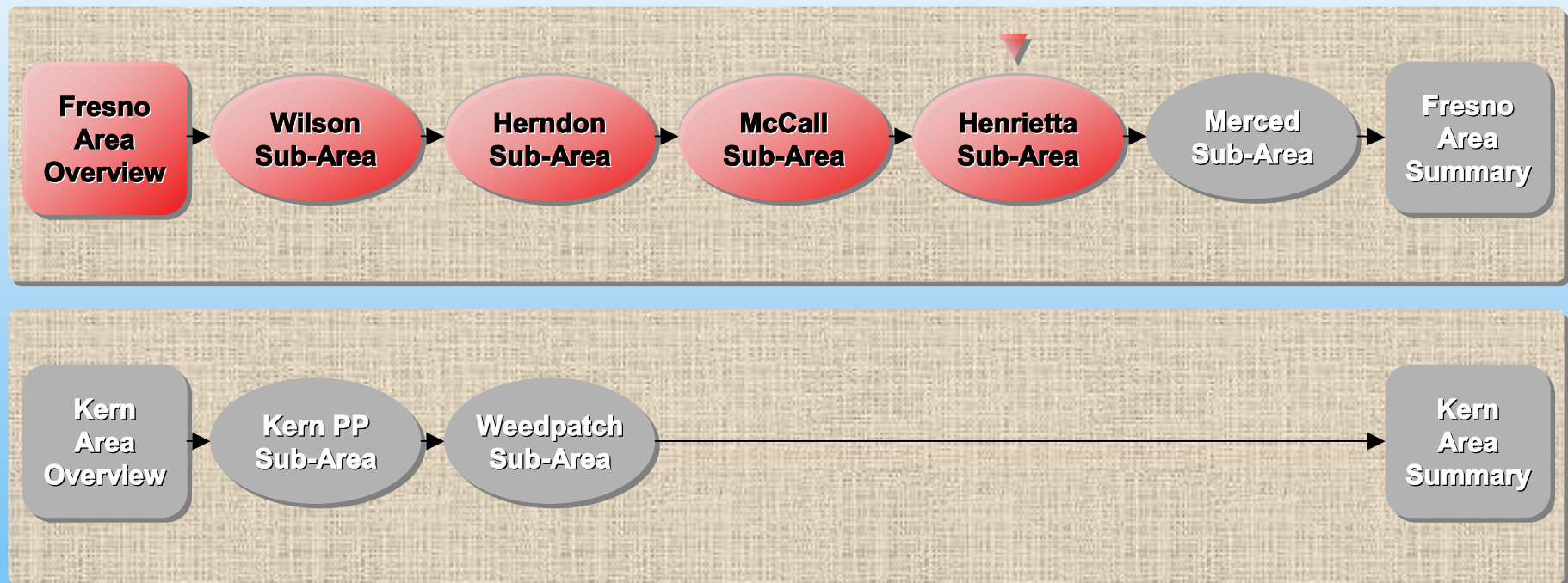
XBWang





LCR for Greater Fresno & Kern Areas

Table of Contents



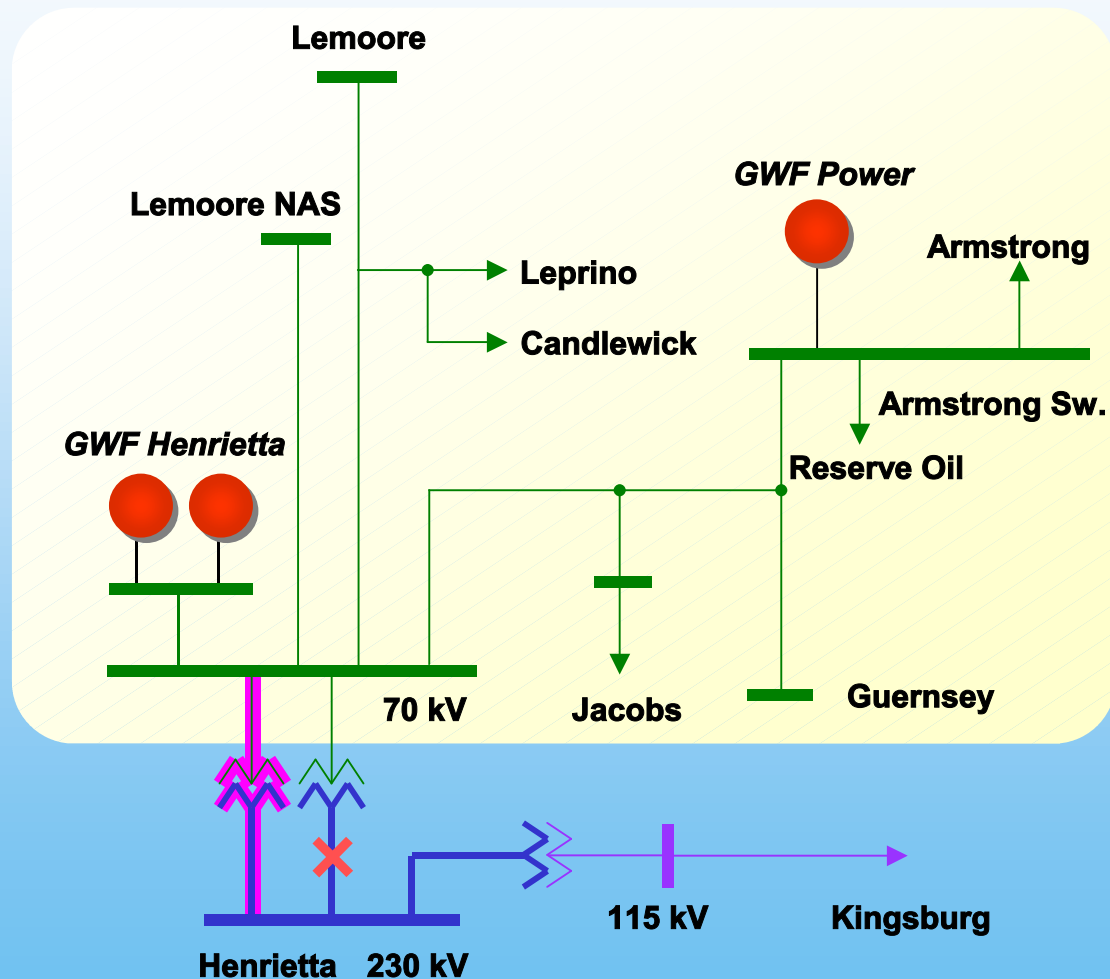
Category B

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

- **Henrietta 230/70 kV bank #2**

32 MW

Market	8 MW
QF	24 MW
Muni	0 MW
Deficiency	0 MW





Henrietta Sub-Area

Category C

Limiting Contingencies:

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

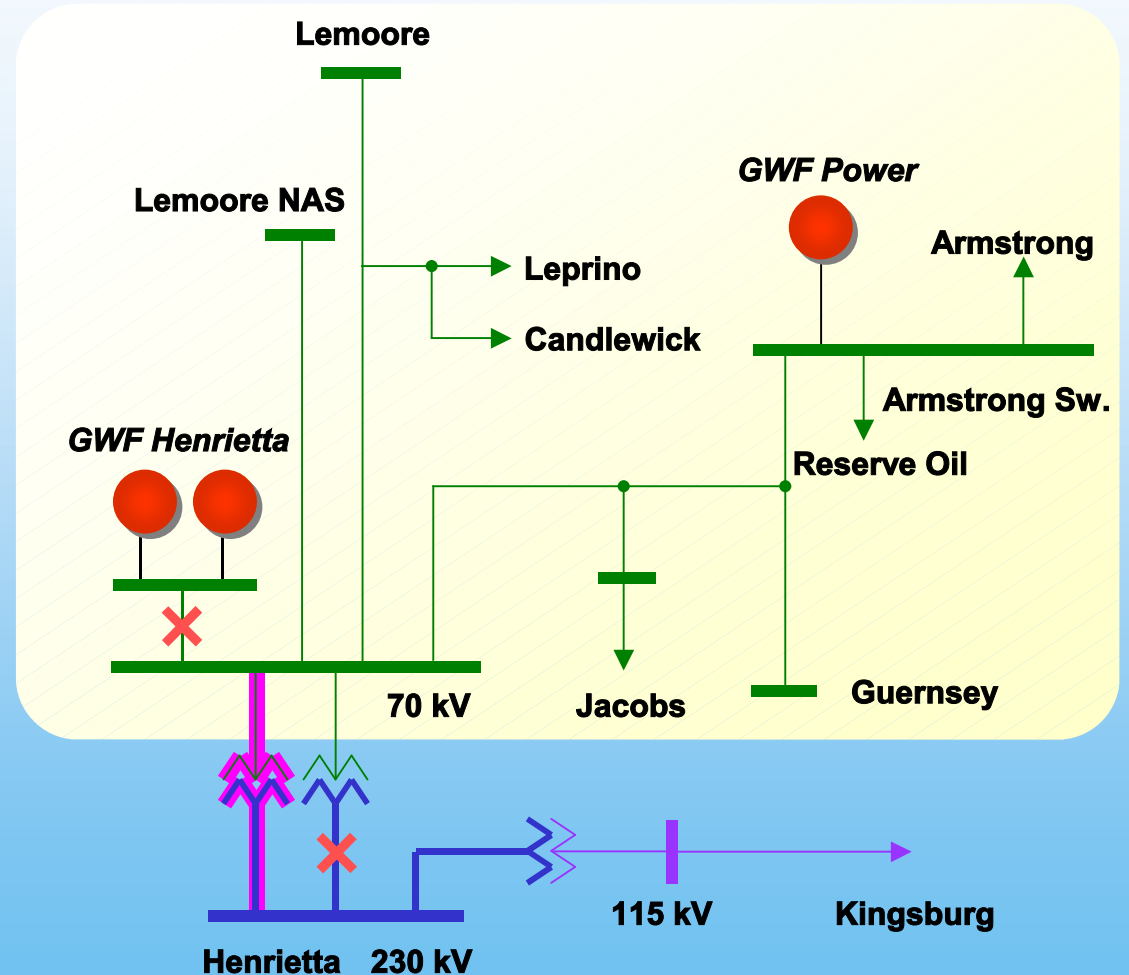
Constrained Element:

- Henrietta 230/70 kV bank #2

LCR:

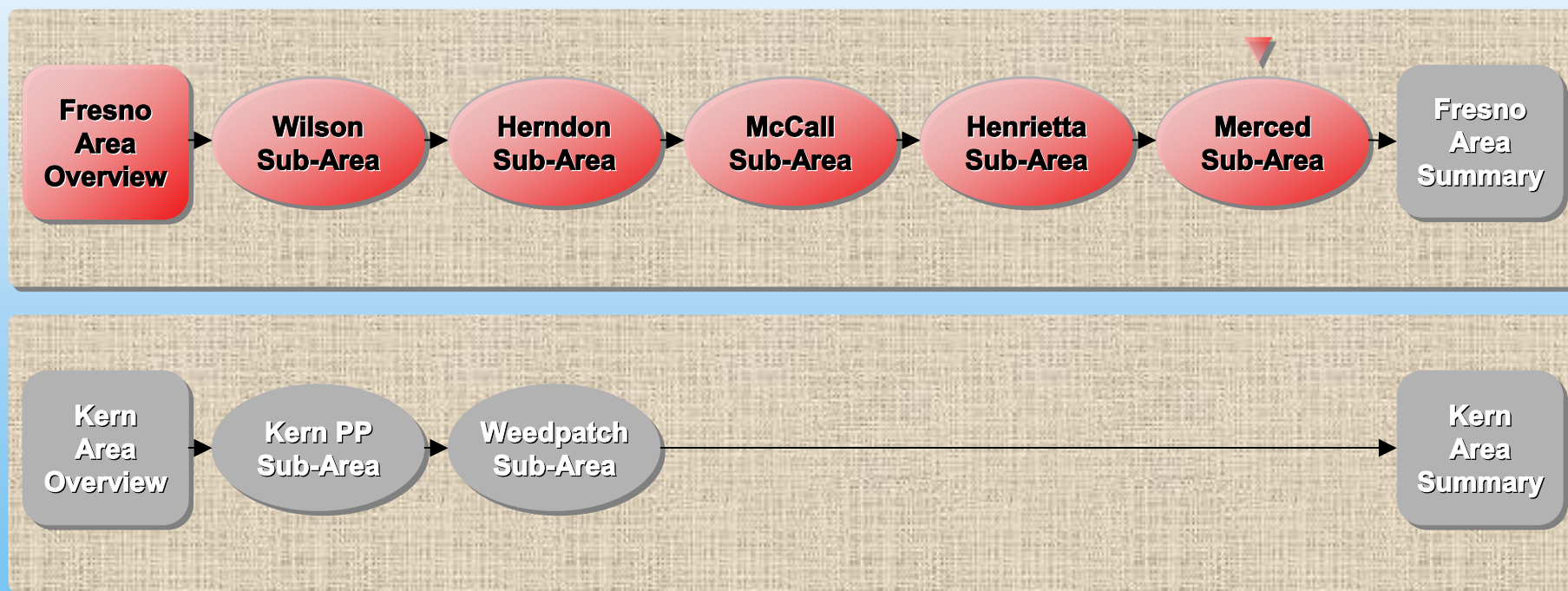
141 MW

Market	90 MW
QF	24 MW
Muni	0 MW
Deficiency	27 MW



LCR for Greater Fresno & Kern Areas

Table of Contents





Merced Sub-Area

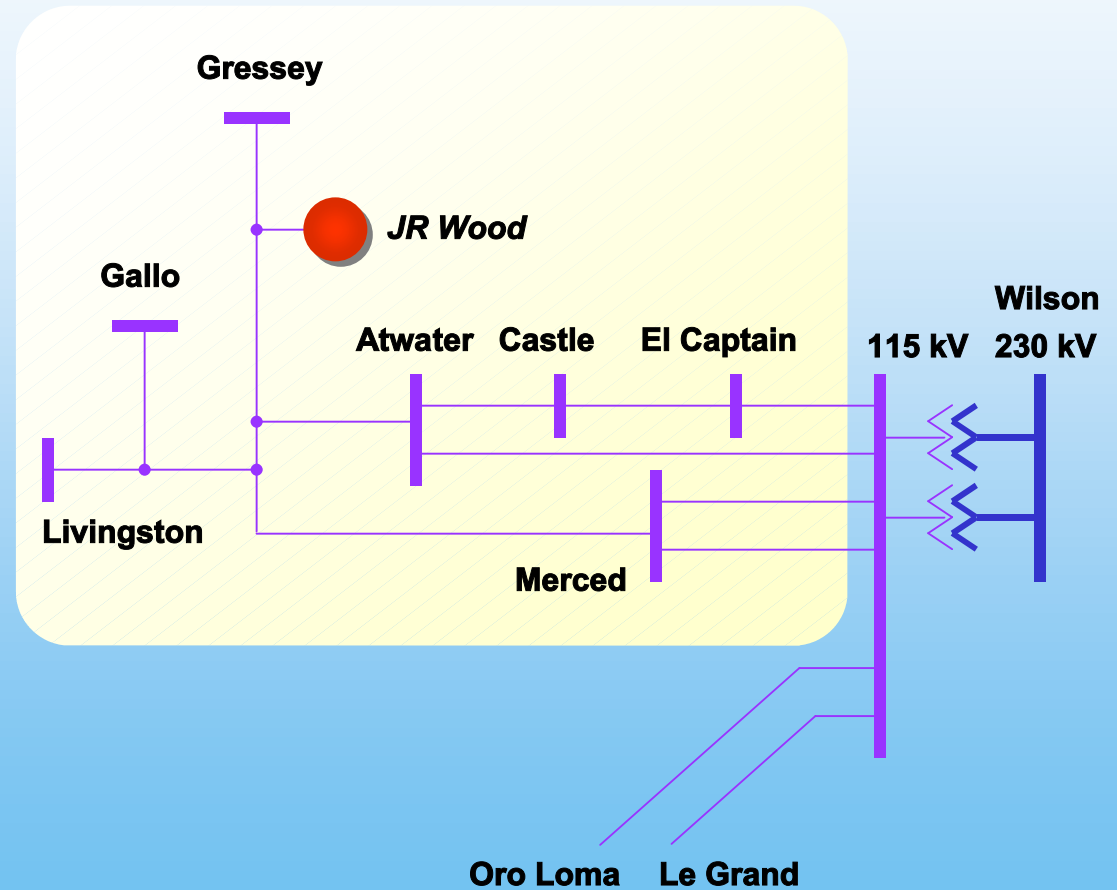
Category B

No contingency to cause any
overload.

LCR:

0 MW

Market	0 MW
QF	0 MW
Muni	0 MW
Deficiency	0 MW





Merced Sub-Area

Category C

Limiting Contingencies:

- L-1: Wilson – Atwater 115 kV line #1
- L-1: Wilson – Atwater 115 kV line #2

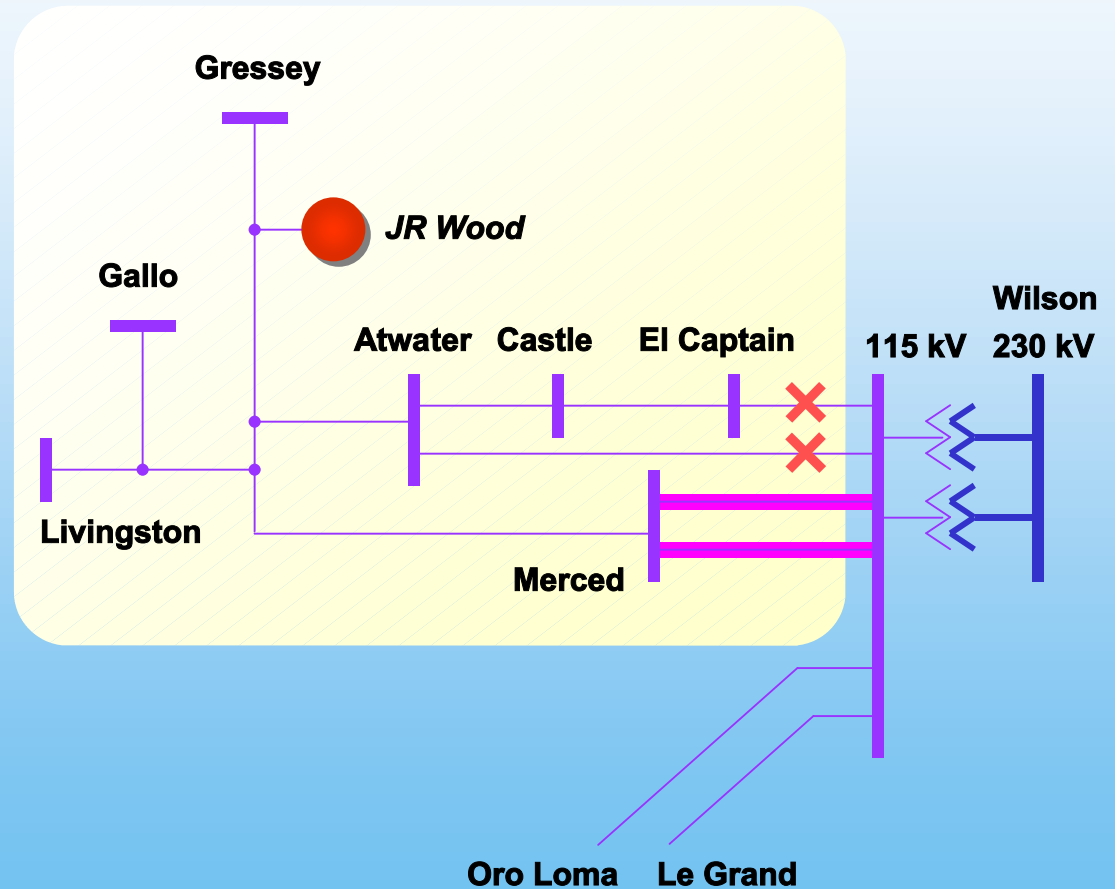
Constrained Element:

- Wilson – Merced 115 kV line #1
- Wilson – Merced 115 kV line #2

LCR:

87 MW

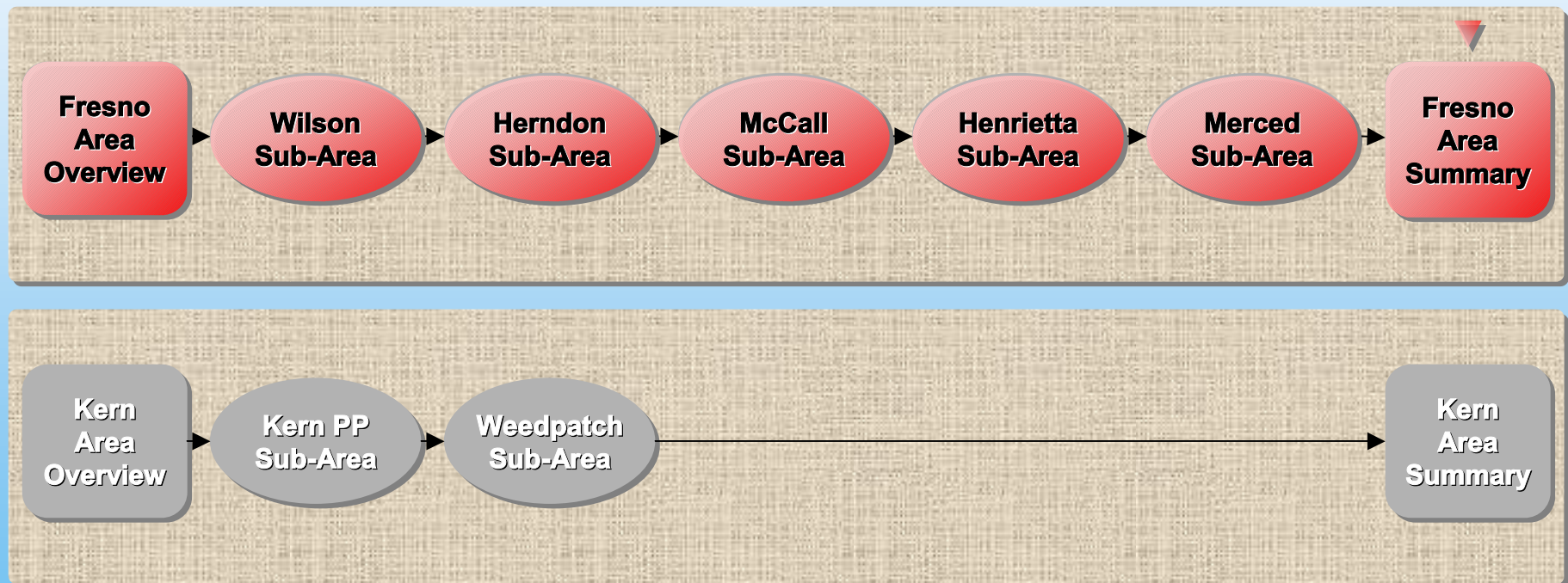
Market	0 MW
QF	6 MW
Muni	0 MW
Deficiency	81 MW





LCR for Greater Fresno & Kern Areas

Table of Contents



Greater Fresno Area Summary of 2008 LCR

"Category B" LCR (MW)

	Market	QF	Muni	Deficiency	All Types
Wilson	1009	204	292	0	1505
Herndon	365	49	225	0	639
Henrietta	8	24	0	0	32
Merced	0	0	0	0	0
Fresno Area Total*	1716	204	292	0	2212

"Category C" LCR (MW)

	Market	QF	Muni	Deficiency	All Types
Wilson	1067	204	292	0	1563
Herndon	573	49	225	0	847
Henrietta	90	24	0	27	141
Merced	0	6	0	81	87
Fresno Area Total*	1778	204	292	108	2382

- Due to overlapping of sub-areas, the *Fresno Area Total* is an aggravated sum (*not* a simple sum) of generation requirements for all sub-areas.

Greater Fresno Area Comparison of 2007 and 2008 LCR

“Category B” LCR (MW)

	2007 LCR	2008 LCR
Wilson	1449	1505
Herndon	719	639
McCall	1405	0
Henrietta	34	32
Merced	0	0
Fresno Area Total	2115	2212

“Category C” LCR (MW)

	2007 LCR	2008 LCR
Wilson	1449	1563
Herndon	680	847
McCall	1462	0
Henrietta	117	141
Merced	151	87
Fresno Area Total	2151	2382

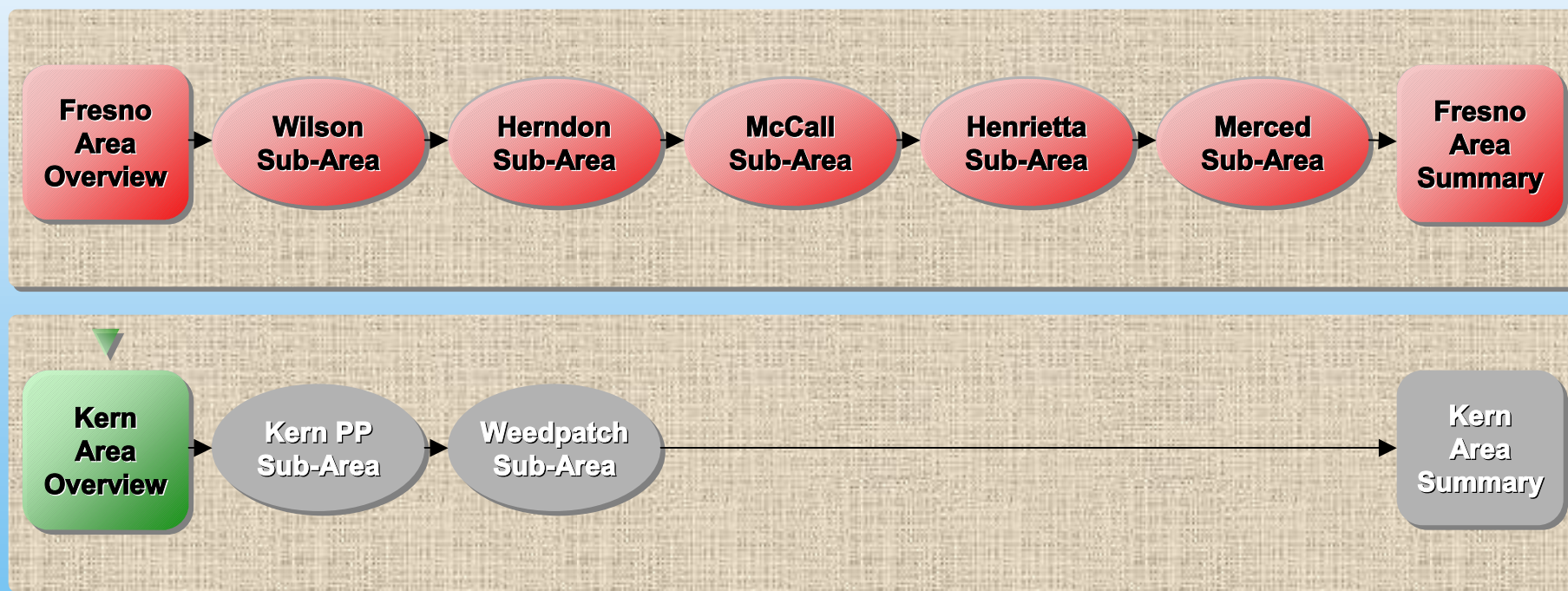
Note:

In the 2008 study, non-effective units are excluded in the definitions of Herndon and Merced sub-areas. Therefore, for the two sub-areas, the 2008 LCR numbers are less than the 2007 numbers.

The new “Category C” LCR for the Wilson sub-area drives up the 2008 LCR for the Herndon sub-area.

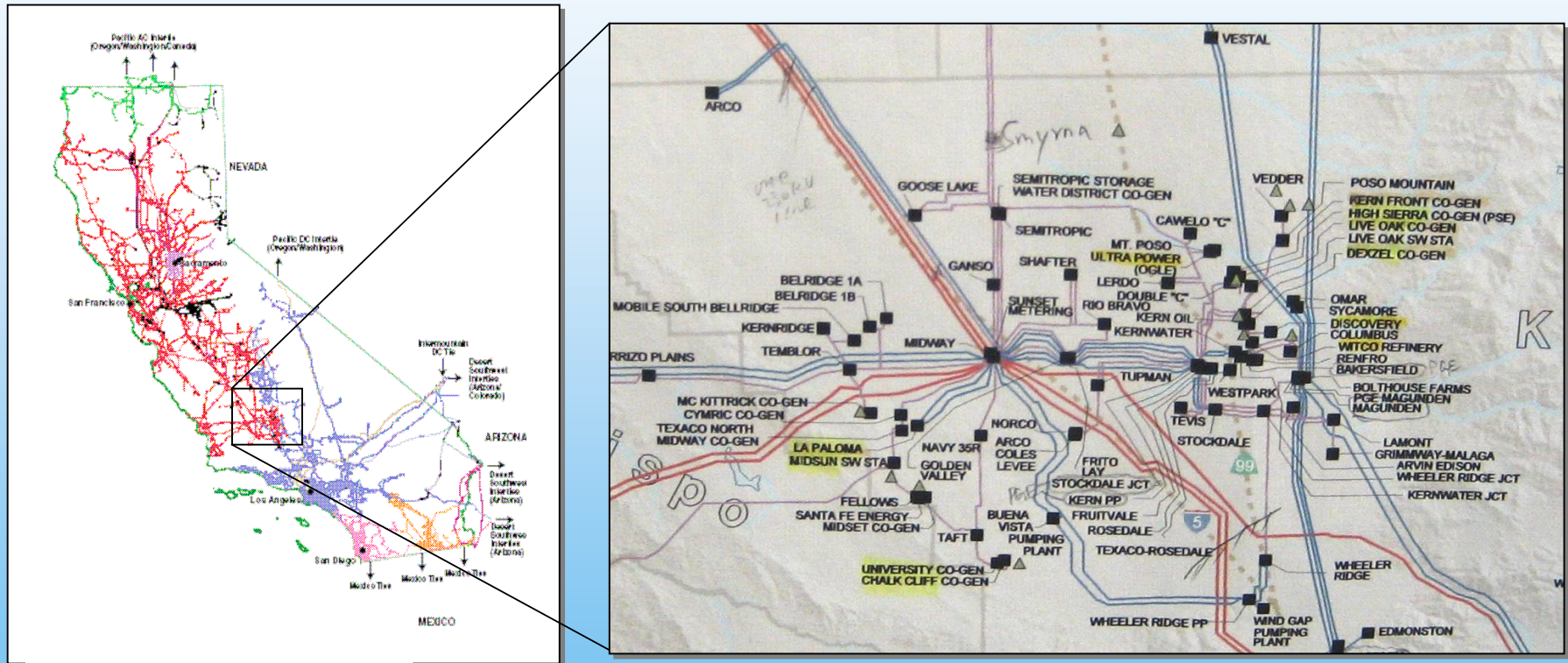
LCR for Greater Fresno & Kern Areas

Table of Contents





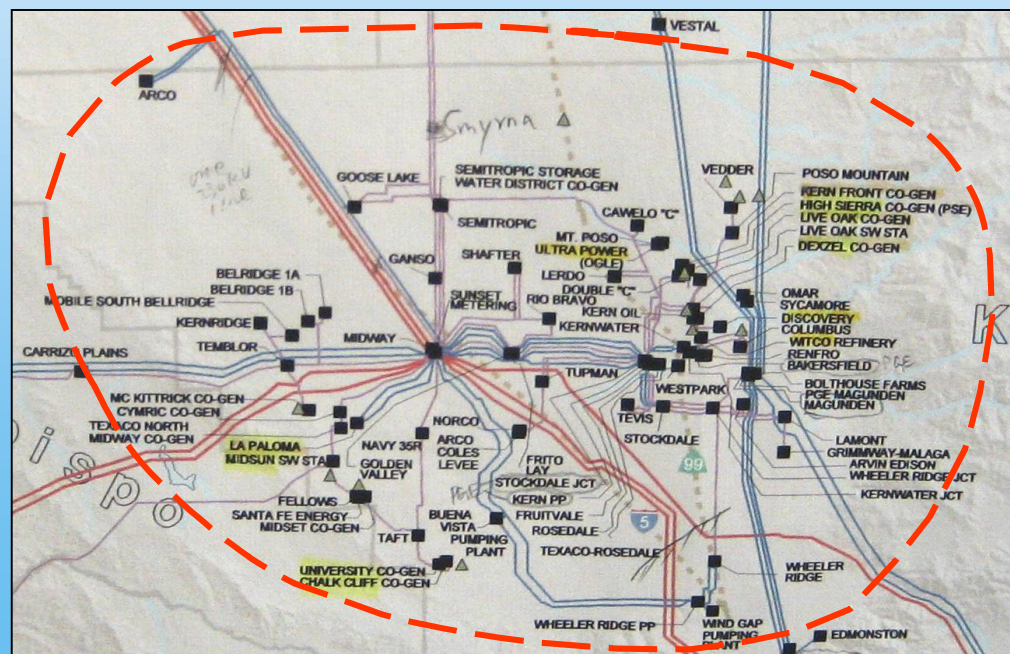
Kern Area



— 500 kV
— 230 kV
— 115 kV

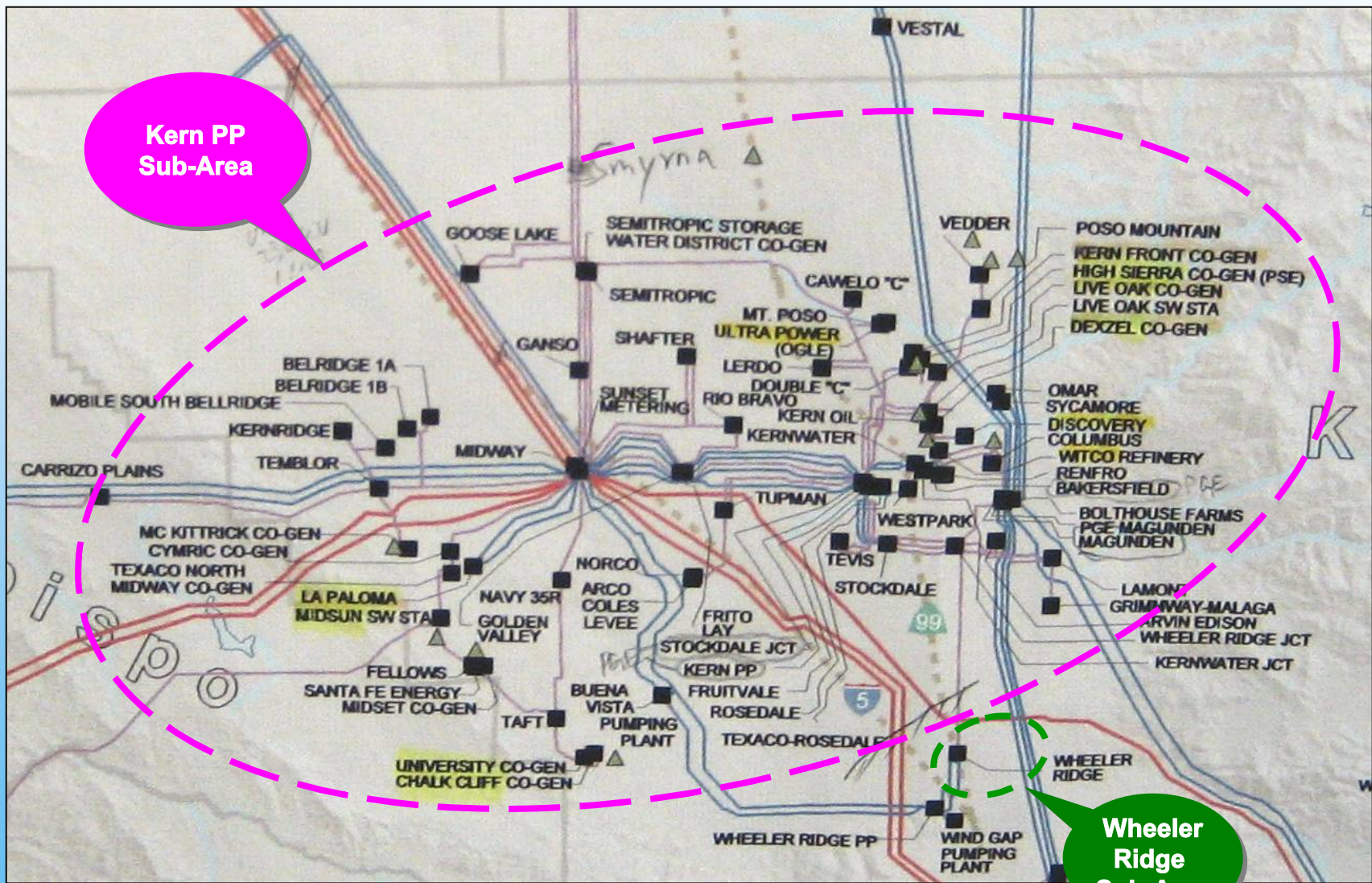
Kern Area Boundaries

- 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





Kern LCR Constraints (Sub-Areas)



Kern Area

Load and Generation Resources

Area Load (1-in-10 Summer Peak)

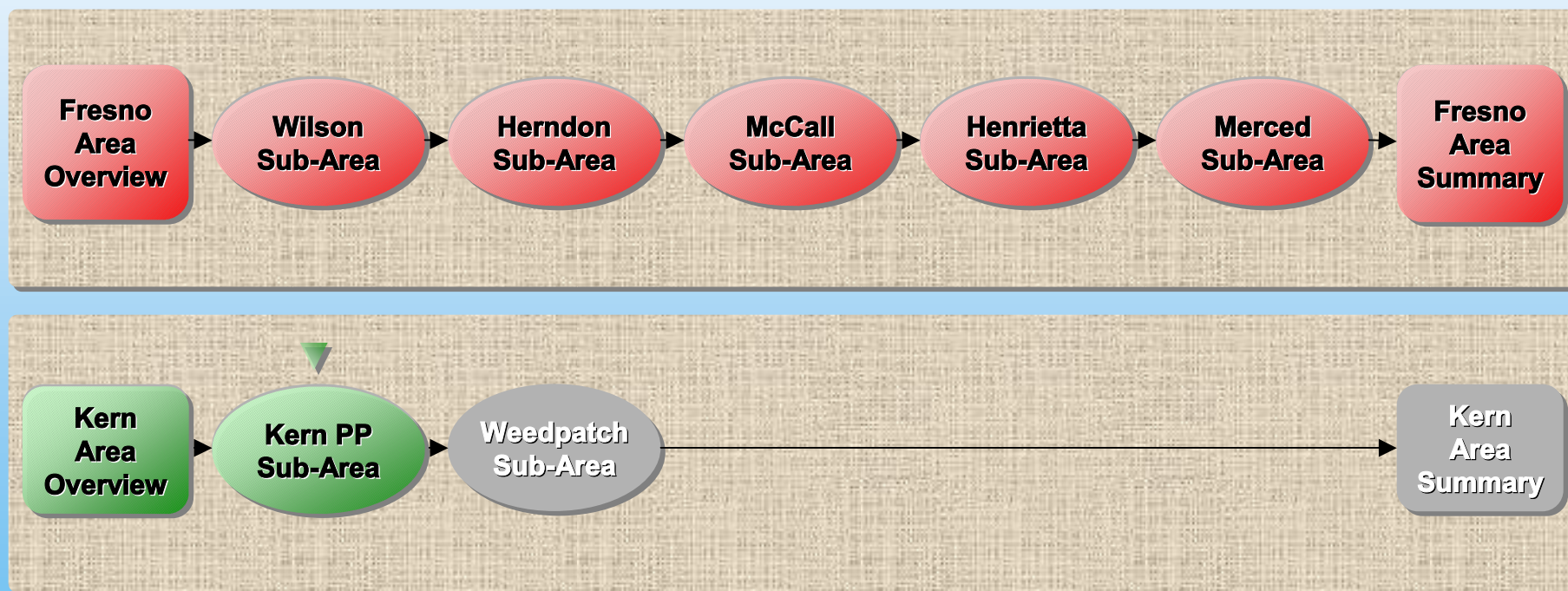
Customer Load:	1308 MW
Transmission Losses:	16 MW
Total:	1324 MW

Area Generation (Qualifying Capacity)

Market:	31 MW
Muni:	0 MW
QF:	615 MW
Total:	646 MW

LCR for Greater Fresno & Kern Areas

Table of Contents





Kern PP Sub-Area

Category B

Limiting Contingency:

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

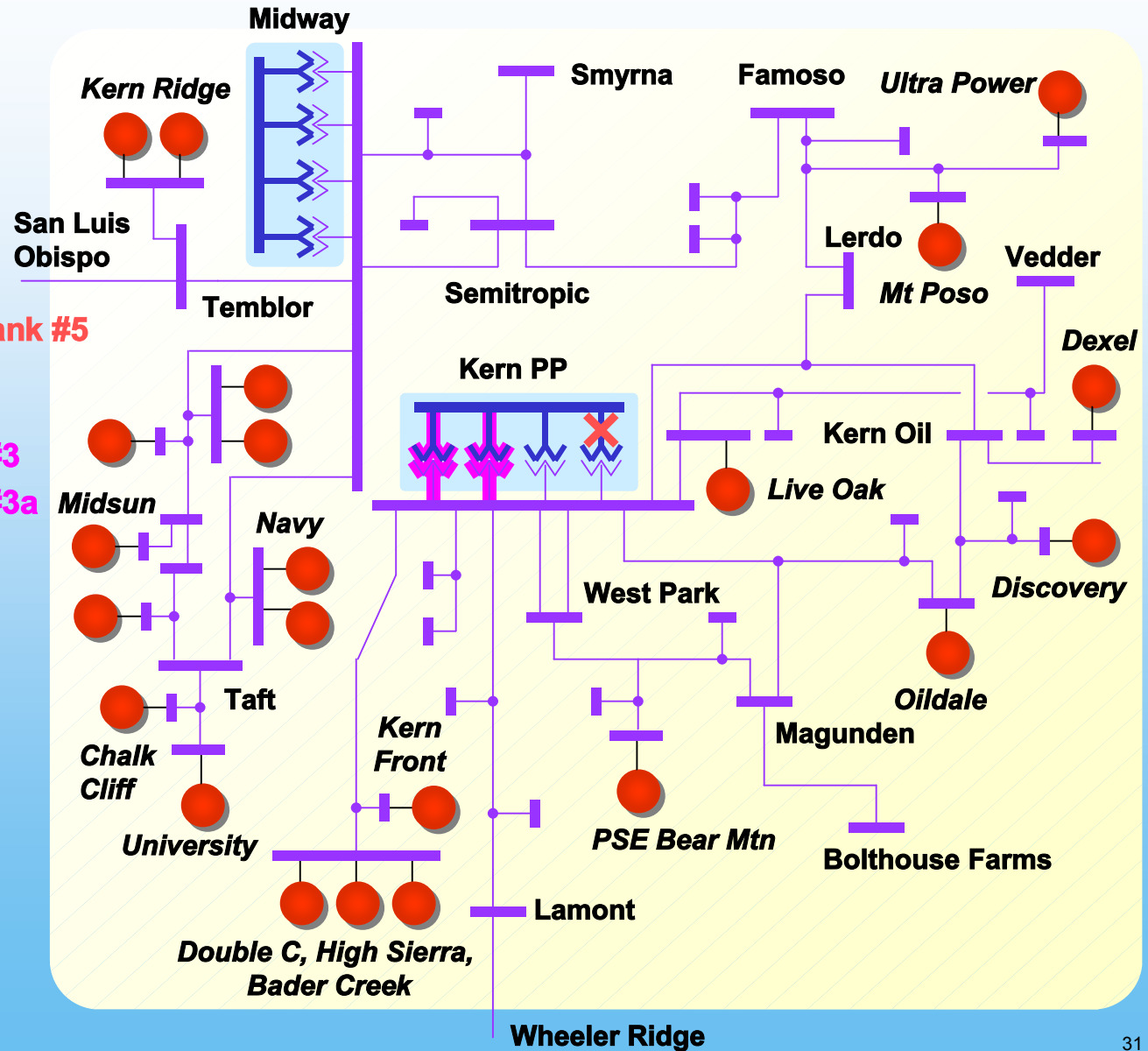
Constrained Elements:

- Kern PP 230/115 kV bank #3
- Kern PP 230/115 kV bank #3a

LCR:

259 MW

Market	0 MW
QF	259 MW
Muni	0 MW
Deficiency	0 MW





Kern PP Sub-Area

Category C

Limiting Contingencies:

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

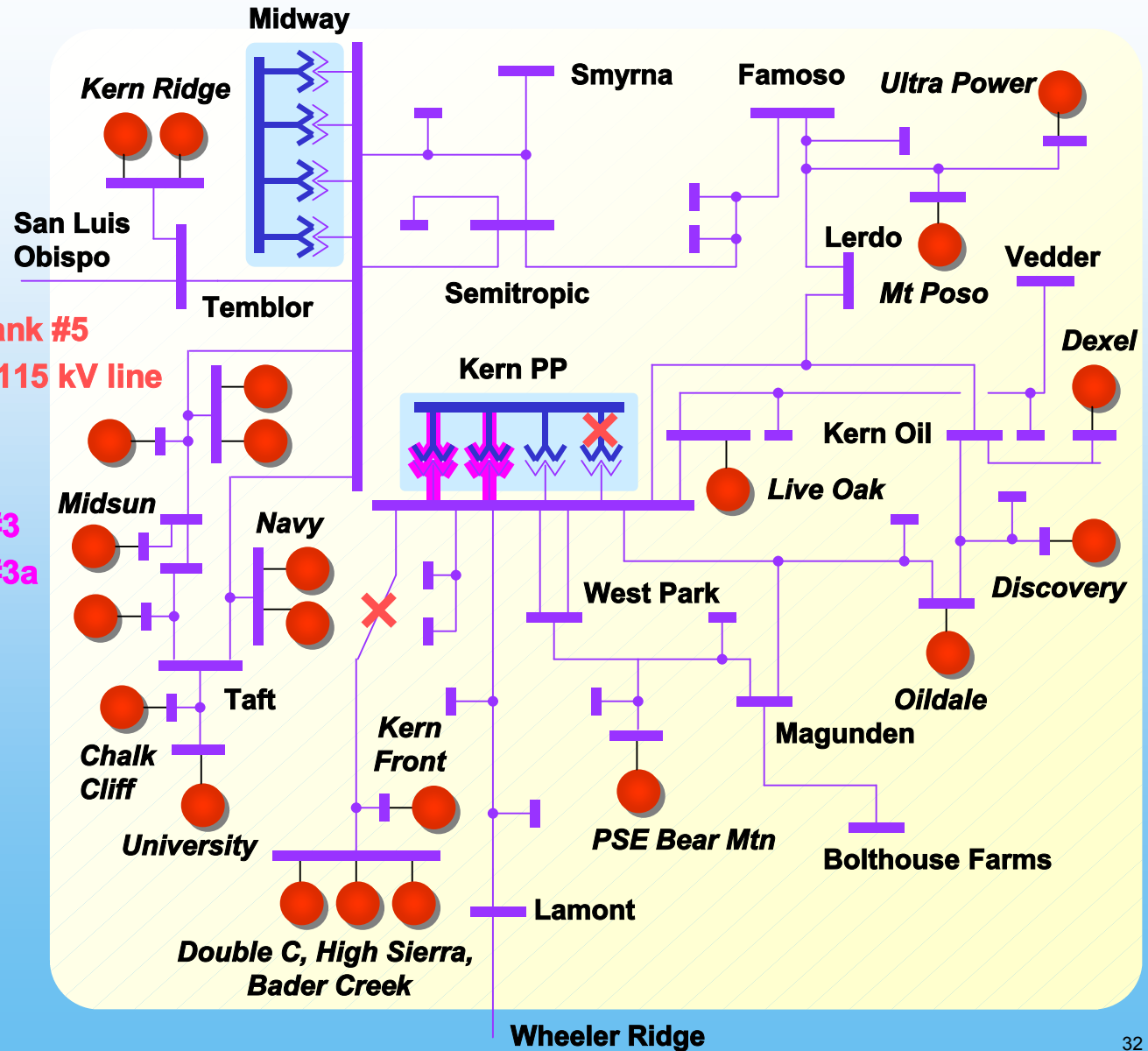
Constrained Elements:

- Kern PP 230/115 kV bank #3
- Kern PP 230/115 kV bank #3a

LCR:

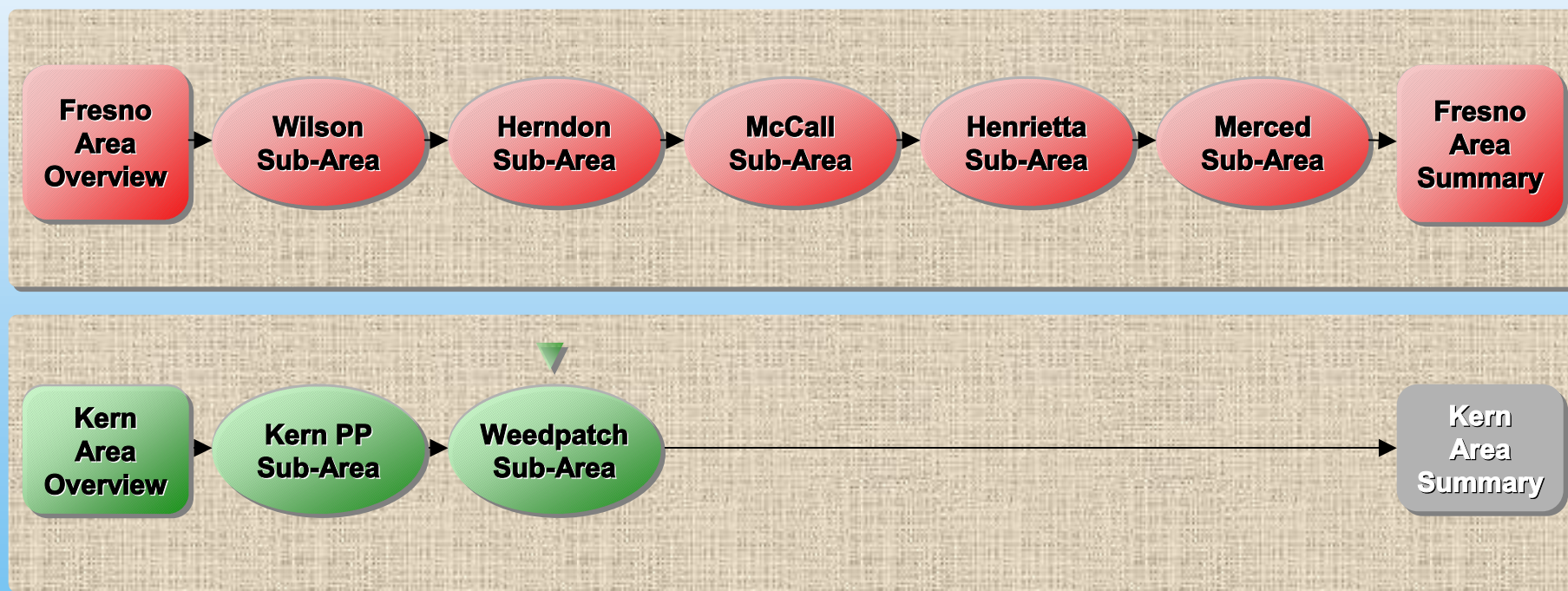
448 MW

Market	0 MW
QF	448 MW
Muni	0 MW
Deficiency	0 MW



LCR for Greater Fresno & Kern Areas

Table of Contents





Weedpatch Sub-Area

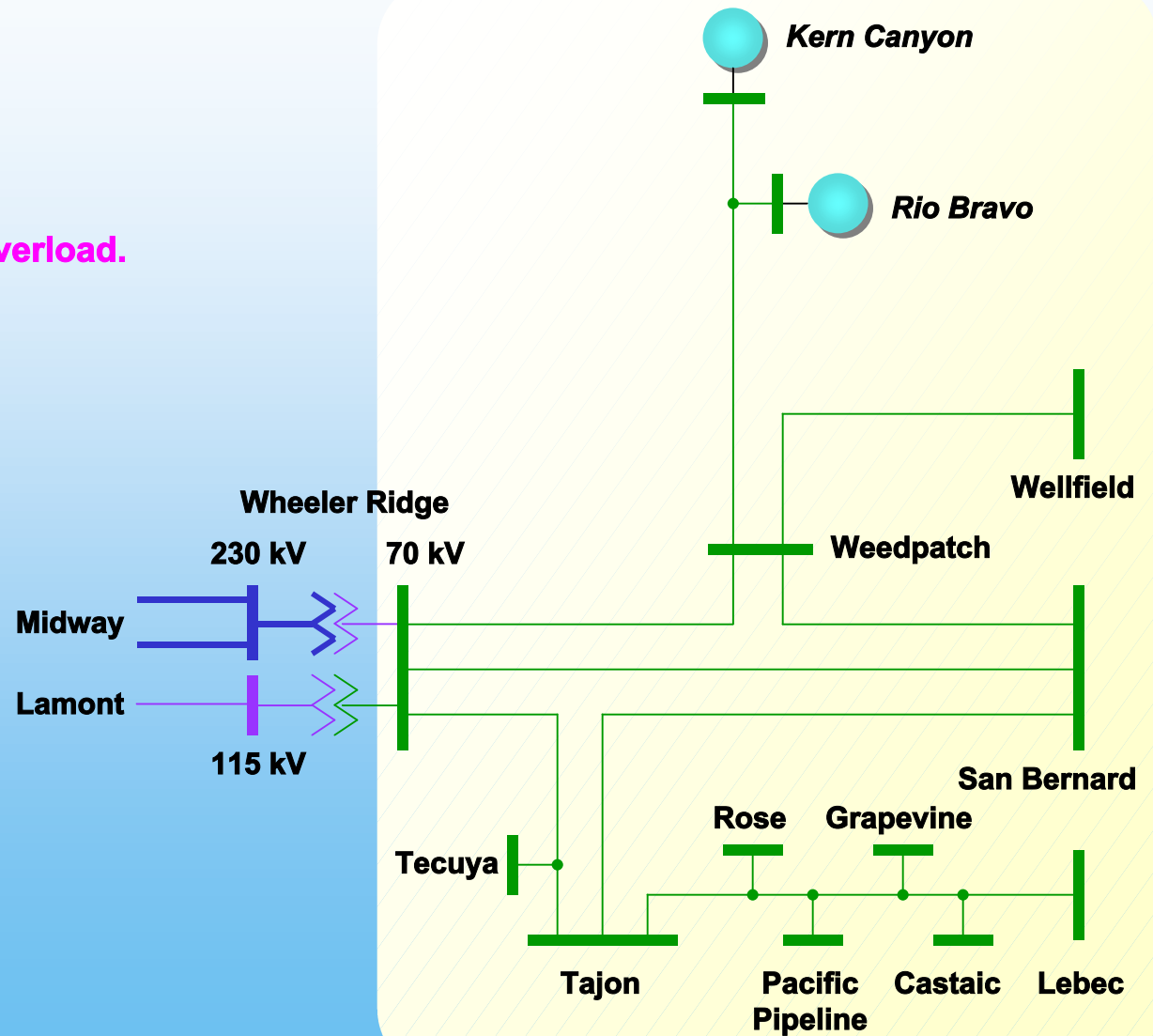
Category B

No contingency to cause any overload.

LCR:

0 MW

Market	0 MW
QF	0 MW
Muni	0 MW
Deficiency	0 MW





Weedpatch Sub-Area

Category C

Limiting Contingencies:

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

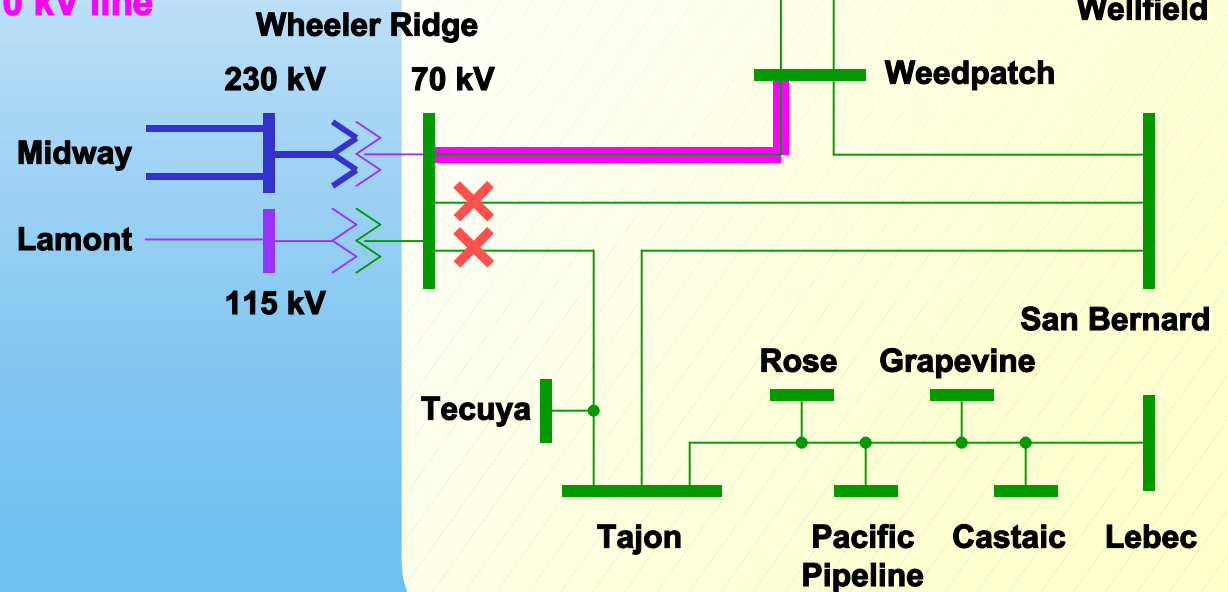
Constrained Element:

- Wheeler Ridge – Weedpatch 70 kV line

LCR:

38 MW

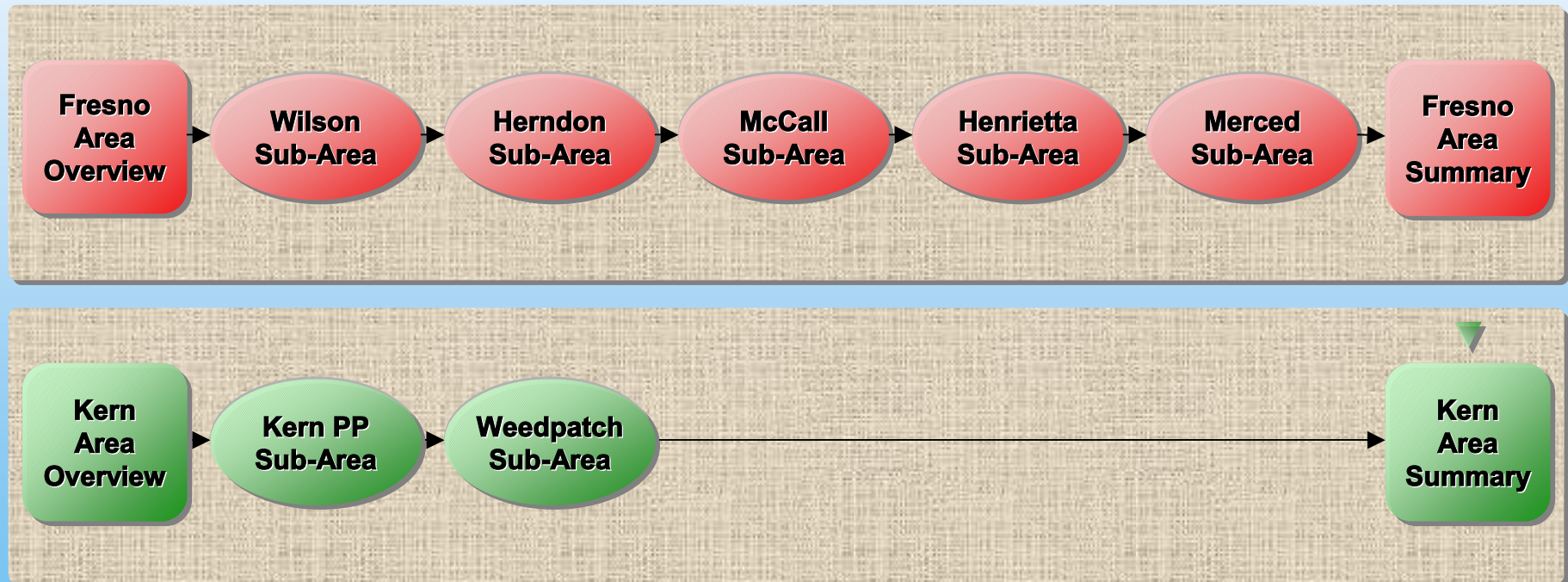
Market	9 MW
QF	6 MW
Muni	0 MW
Deficiency	23 MW





LCR for Greater Fresno & Kern Areas

Table of Contents



Kern Area Summary of 2008 LCR

“Category B” Requirements (MW)

	Market	QF	Muni	Deficiency	All Types
Kern PP	0	259	0	0	259
Weedpatch	0	0	0	0	0
Kern Area Total	0	259	0	0	259

“Category C” Requirements (MW)

	Market	QF	Muni	Deficiency	All Types
Kern PP	0	448	0	0	448
Weedpatch	9	6	0	23	38
Kern Area Total	9	454	0	23	486

Kern Area Comparison of 2007 and 2008 LCR

“Category B” LCR (MW)

	2007 LCR	2008 LCR
Kern PP	554	259
Weedpatch	0	0
Kern Area Total	554	259

“Category C” LCR (MW)

	2007 LCR	2008 LCR
Kern PP	749	448
Weedpatch	48	38
Kern Area Total	797	486

Note:

In the 2007 LCR study, all units were assumed to be same effective.
In the 2008 LCR study, effectiveness of units are distinguished; and non-effective units are not dispatched.
Therefore, the 2008 LCR is less than the 2007 LCR.



Stakeholder Comments