



Year 2007

Local Capacity Requirements Study

Greater Fresno and Kern Areas

Summary of Preliminary Results

Xiaobo Wang

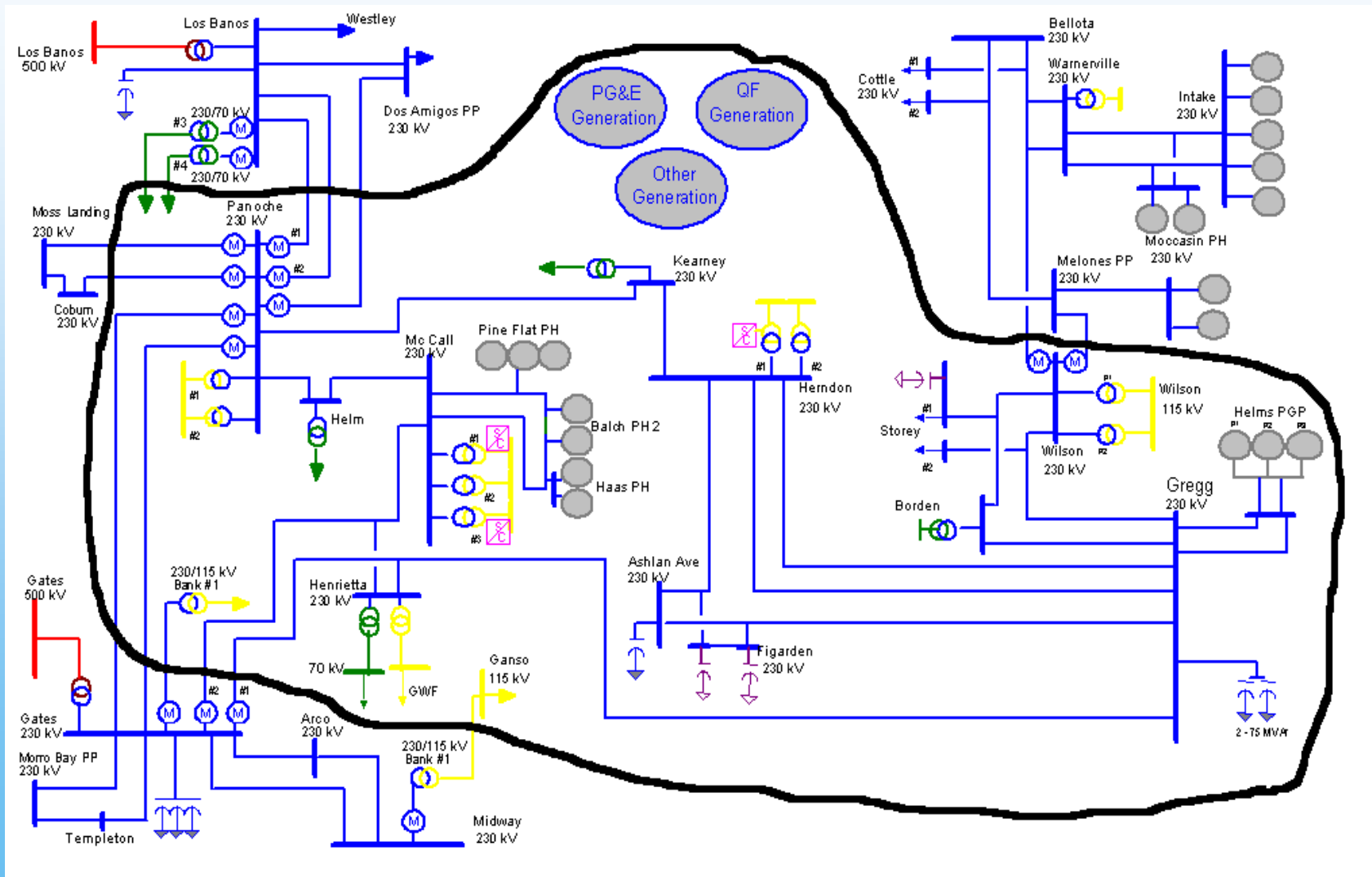
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April 26, 2006



Greater Fresno Area



Greater Fresno Area Boundaries

Lines:

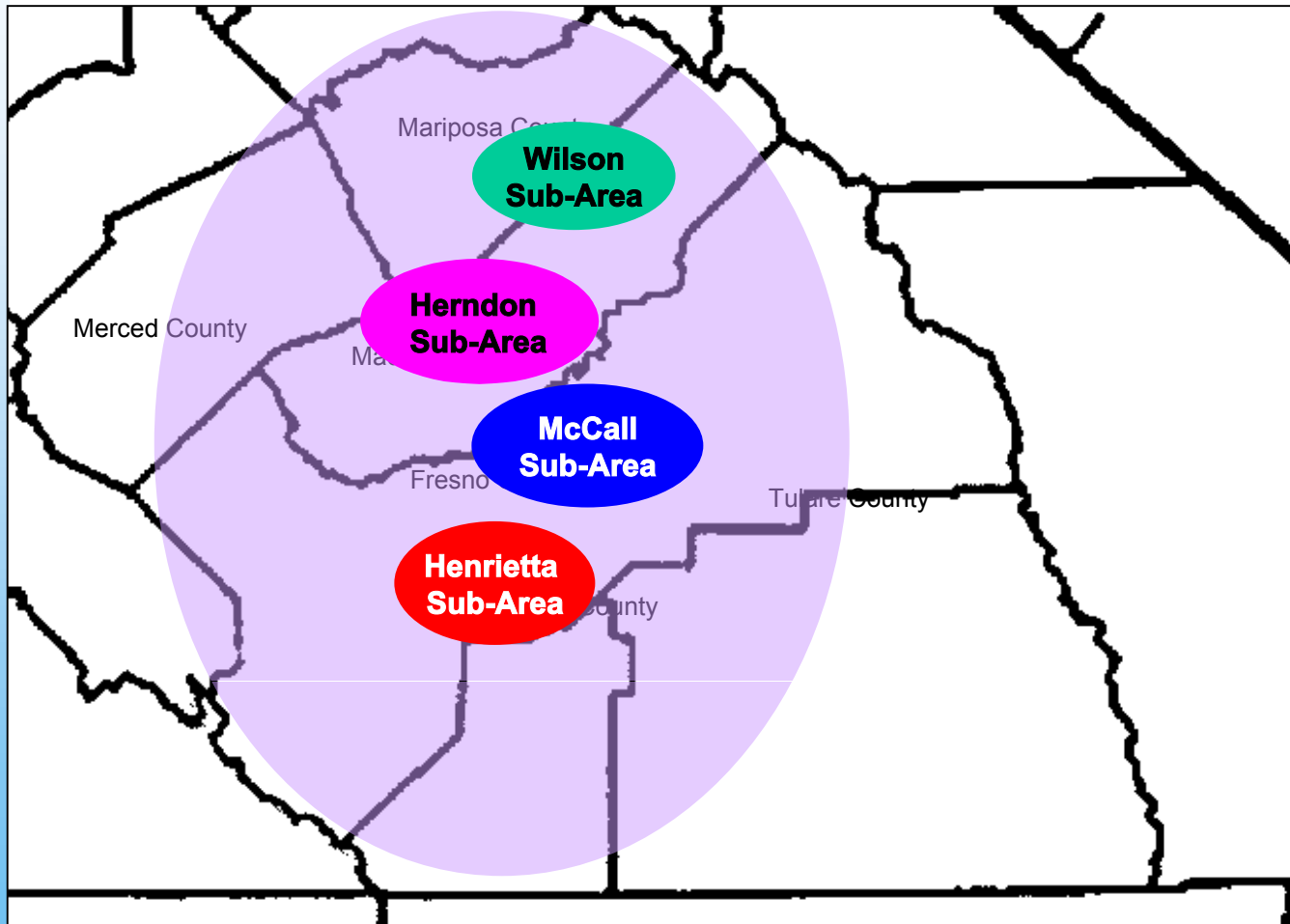
- **Gates-Henrietta Tap 1 230 kV**
- **Gates-Henrietta Tap 2 230 kV**
- **Gates #1 230/115 kV Transformer Bank**
- **Los Banos #3 230/70 Transformer Bank**
- **Los Banos #4 230/70 Transformer Bank**
- **Panoche-Gates #1 230 kV**
- **Panoche-Gates #2 230 kV**
- **Panoche-Coburn 230 kV**
- **Panoche-Moss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

Substations:

- **Los Banos 230 kV**
- **Gates 230 kV**
- **Panoche 230 kV**
- **Wilson 230 kV**
- **Alpaugh 115 kV**
- **Coalinga 70 kV**

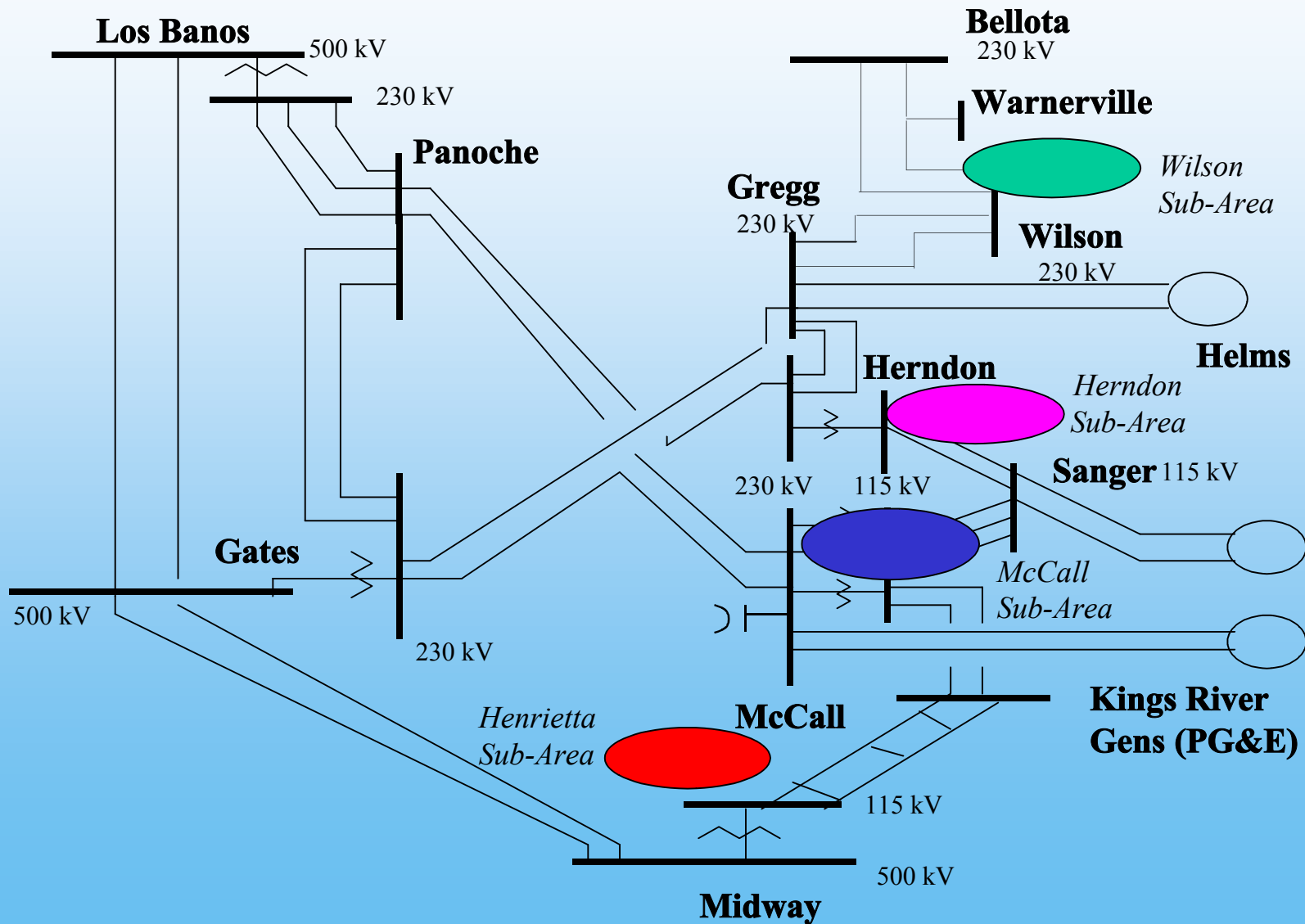


Greater Fresno Sub-Areas (Pockets)





Greater Fresno Area Transmission System



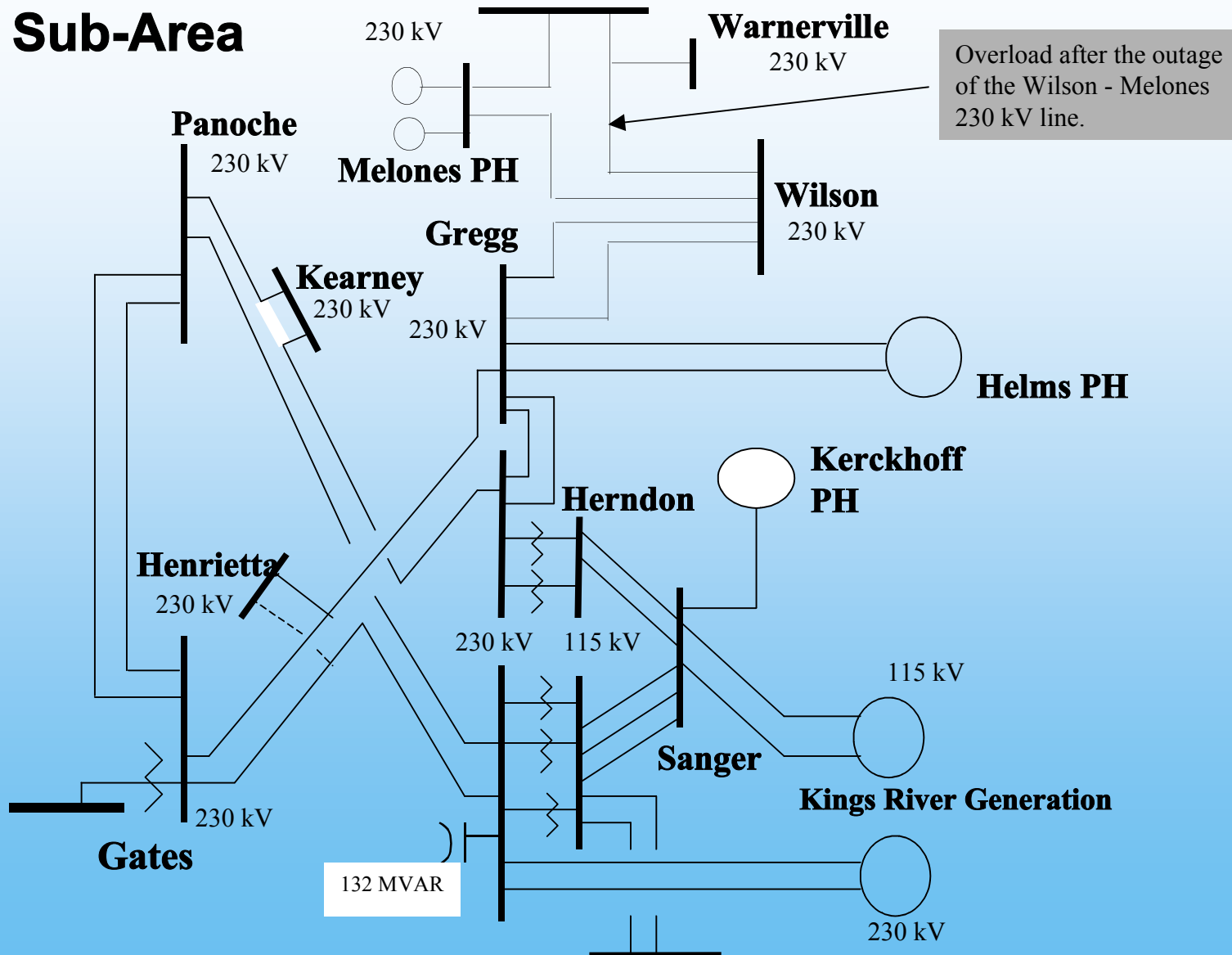
Greater Fresno Area Load and Resources

<u>Load</u>	1 in 10 (LCR)
Customer Load	3051 MW
Transmission Losses	103 MW
Total Area Load	3154 MW

<u>Generation (MW)</u>	<u>Rated Capacity</u>
Utility	1762 MW
Market	575 MW
Muni	300 MW
QFs	289 MW
Total Area Generation:	2926 MW



Wilson Sub-Area

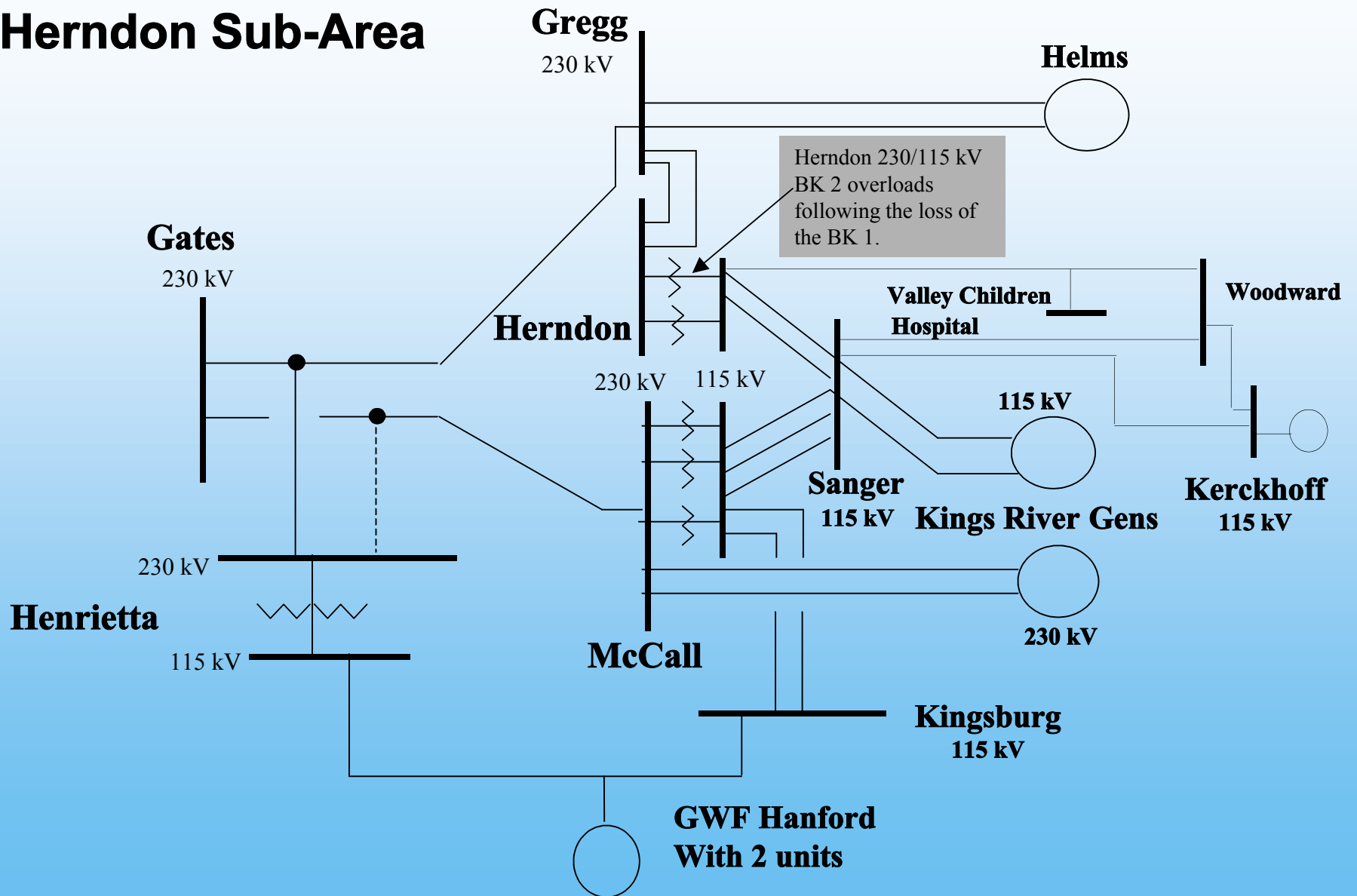


Wilson Sub-Area

- Critical Contingency: **Overload on the Wilson–Warnerville 230 kV line following the Wilson–Melone 230 kV line outage overlapped with loss of one Helms unit.**
- LCR Deficiency for the Sub-Area: 0 MW
- LCR Requirement for the Sub-Area: **1275 MW** (Category B)
1679 MW (Category C)



Herndon Sub-Area

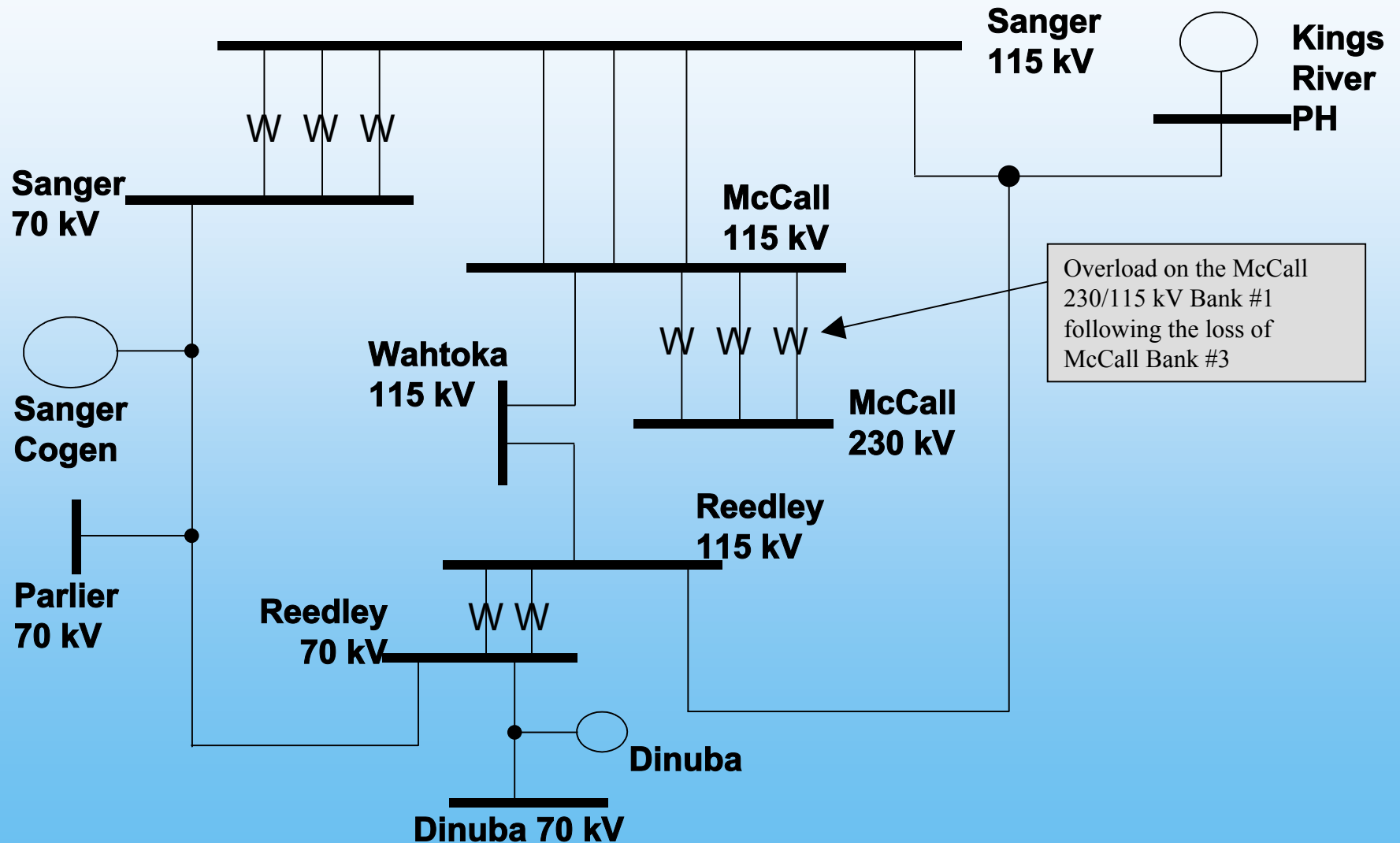


Herndon Sub-Area

- Critical Contingency: **Overload on the Herndon 230/115 kV Bank #2 following the loss of Bank #1 overlapped with the outage of the Kerckhof II generator**
- LCR Deficiency for the Sub-Area: **0 MW**
- LCR Requirement for the Sub-Area: **961 MW (Category B)**
1115 MW (Category C)



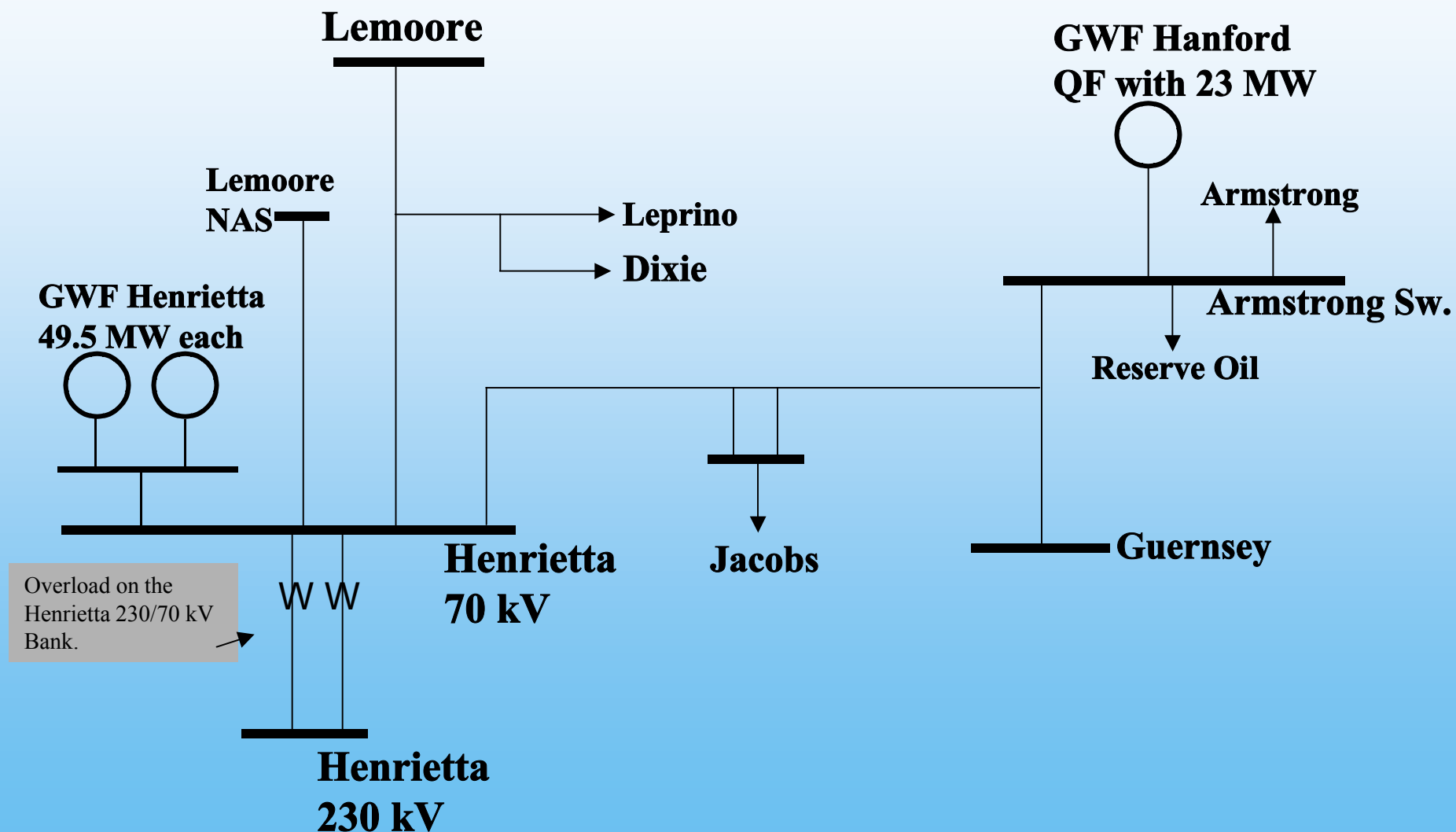
McCall Sub-Area



McCall Sub-Area

- Critical Contingency: **Overload on the McCall 230/115 kV Bank #1 following the loss of McCall Bank #3 overlapped with the loss of the GWF Hanford generator**
- LCR Deficiency for the Sub-Area: 0 MW
- LCR Requirement for the Sub-Area: **1561 MW** (Category B)
1605 MW (Category C)

Henrietta Sub-Area



Henrietta Sub-Area

- Critical Contingency: **Category B: Overload on the old Henrietta 230/70 Bank following the loss of the new Henrietta 230/70 kV Bank. Category C: Overload on the old Henrietta 230/70 Bank following the loss of the generator tie line of the GWF Henrietta generation.**
- LCR Deficiency for the Sub-Area: **4 MW**
- LCR Requirement for the Sub-Area: **64 MW (Category B)**
23 MW (Category C)

Merced Sub-Area

- Critical Contingency: **Overload on the Wilson-Merced 115 kV #1 and #2 lines following the double line outage of the Wilson–Atwater 115 kV #1 and #2 lines.**
- LCR Deficiency for the Sub-Area: **66 MW**
- RMR Requirement for the Sub-Area: **151 MW**



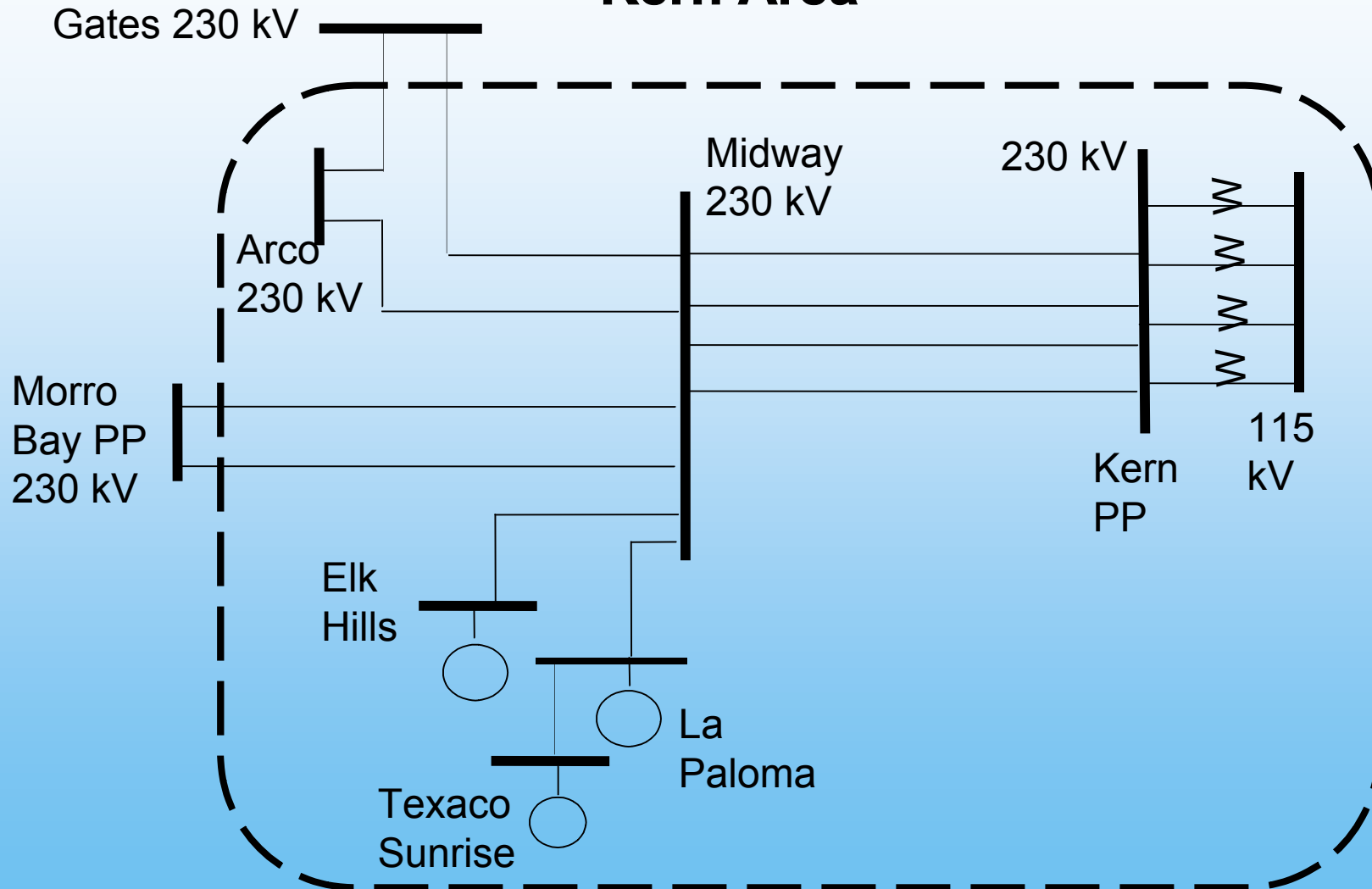
2007 Greater Fresno Area LCR Study Conclusion

Total aggregated LCR MW requirement:

- Year 2006: 2837 MW (with 146 MW deficiency)
- **Year 2007: 2797 MW (with 4 MW deficiency)**



Kern Area



Kern Area Boundaries

Lines:

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

Substations:

- Midway 230 kV
- Arco 230 kV
- Smyrna 115 kV
- Temblor 70 kV

Kern Area Load and Resource

Load

Customer Load	1091 MW
Transmission Losses	16 MW
Total Area Load	1107 MW

<u>Generation (MW)</u>	<u>Rated Capacity</u>
Utility	11 MW
Market	20 MW
Muni	0 MW
QFs	917 MW
Total Area Generation	948 MW



Kern PP Sub-Area

- Critical Contingency: **Overload on the Kern PP 230/115 kV Bank #3 following the outages of the Kern PP 230/115 kV transformer Bank 5 and the Kern PP – Kern Front 115 kV line**
- LCR Deficiency for the Sub-Area: **0 MW**
- LCR Requirement for the Sub-Area: **771 MW**



Weedpatch Sub-Area

- Critical Contingency: **Overload on the Wheeler Ridge 70 kV line following the outages of the Wheeler Ridge – San Bernard 70 kV line and the Wheeler Ridge – Tejon 70 kV line.**
- LCR Deficiency for the Sub-Area: **17 MW**
- LCR Requirement for the Sub-Area: **36 MW**



2007 Kern Area LCR Study Conclusion

Total aggregated LCR MW requirement:

- Year 2006: 797 MW (with 142 MW deficiency)
- **Year 2007: 754 MW (with 17 MW deficiency)**



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Stakeholder Comments