



California ISO

2019 & 23 Final LCR Study Results Humboldt and North Coast/North Bay Areas

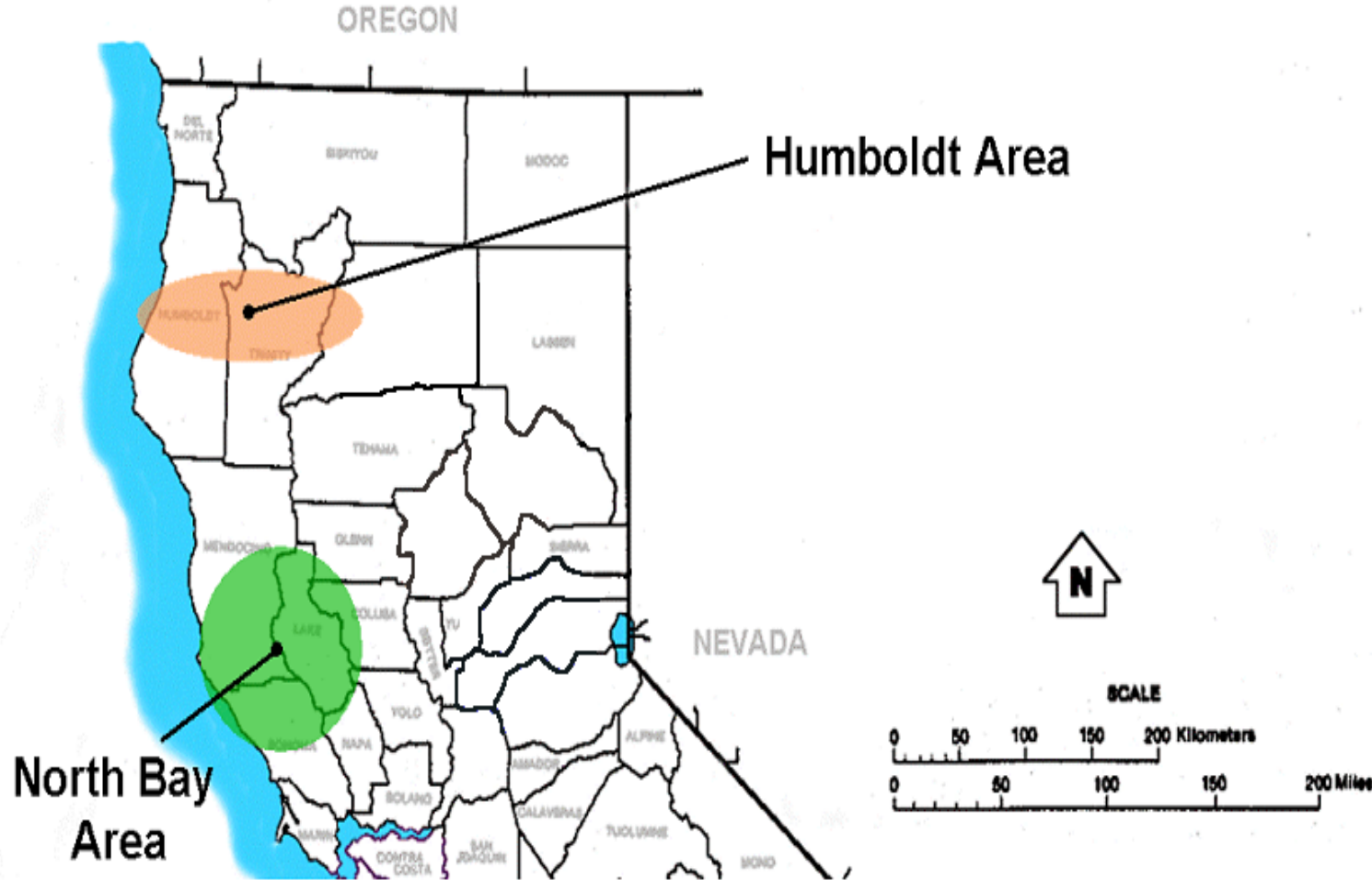
Bryan Fong

Senior Regional Transmission Engineer

Stakeholder Call

May 1, 2018

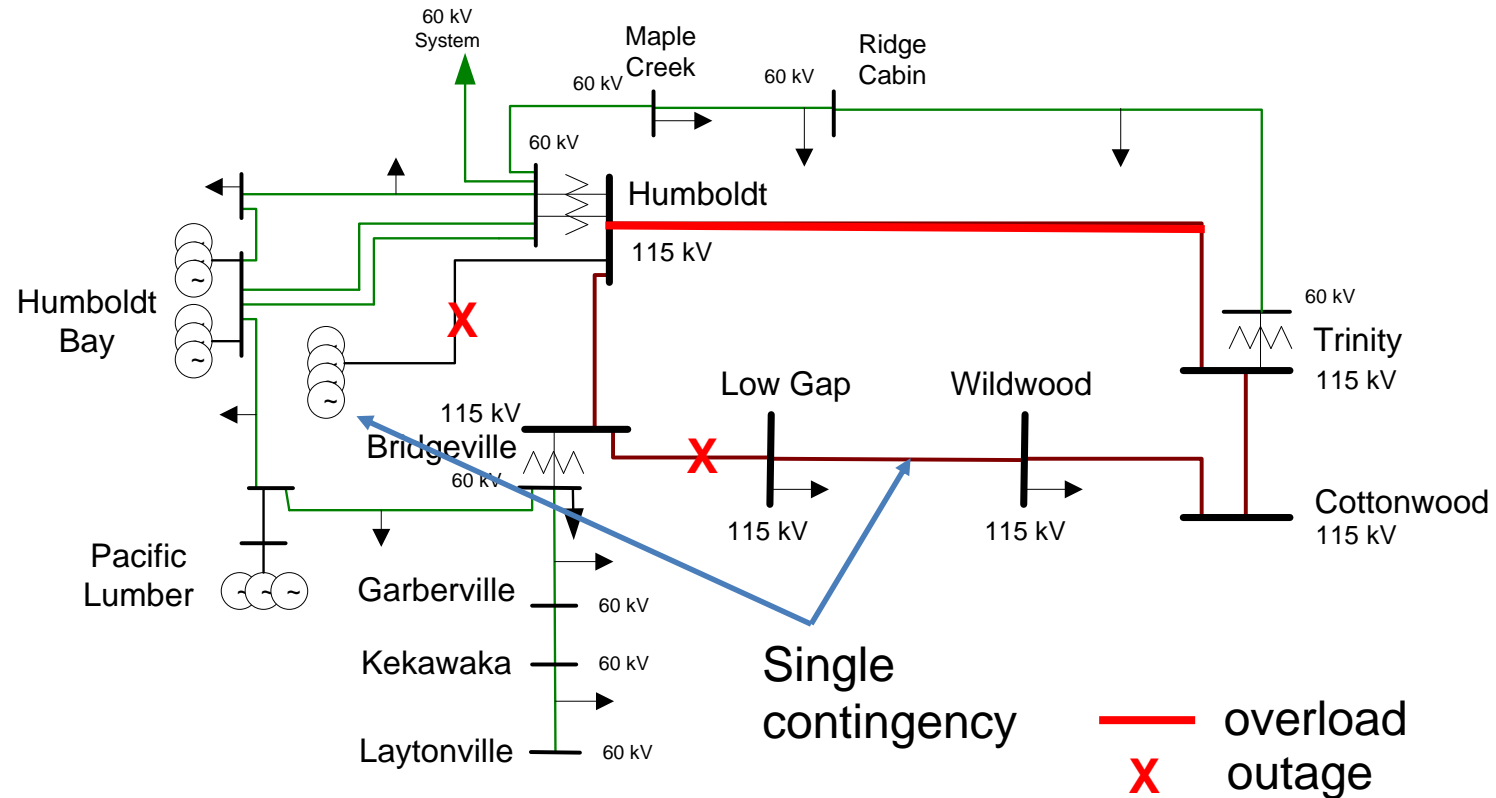
Humboldt and North Coast/North Bay



Humboldt Load and Resources (MW)

		2019	2023
Load	=	180	196
AAEE	=	-5	-19
Transmission Losses	=	12	12
Total Load	=	187	188
Market Generation	=	202	202
QF/Self-Gen Generation	=	0	0
Total Qualifying Capacity	=	202	202

Critical Contingencies Humboldt Area



Critical Contingencies Humboldt Area

Humboldt Overall – Single Contingency Winter Peak

Contingency: Cottonwood-Bridgeville 115 kV line + one Humboldt
PP units out of service

Limiting component: Thermal overload on Humboldt -Trinity 115 kV line

2019 LCR Need: 116 MW

2023 LCR Need: 111 MW

Humboldt Overall – Double Contingencies Winter Peak

Contingency: Cottonwood – Bridgeville 115 kV line + Humboldt – Humboldt
Bay 115kV line

Limiting component: Thermal overload on Humboldt -Trinity 115 kV line

2019 LCR need: 165 MW

2023 LCR need: 169 MW

Changes

Since last year:

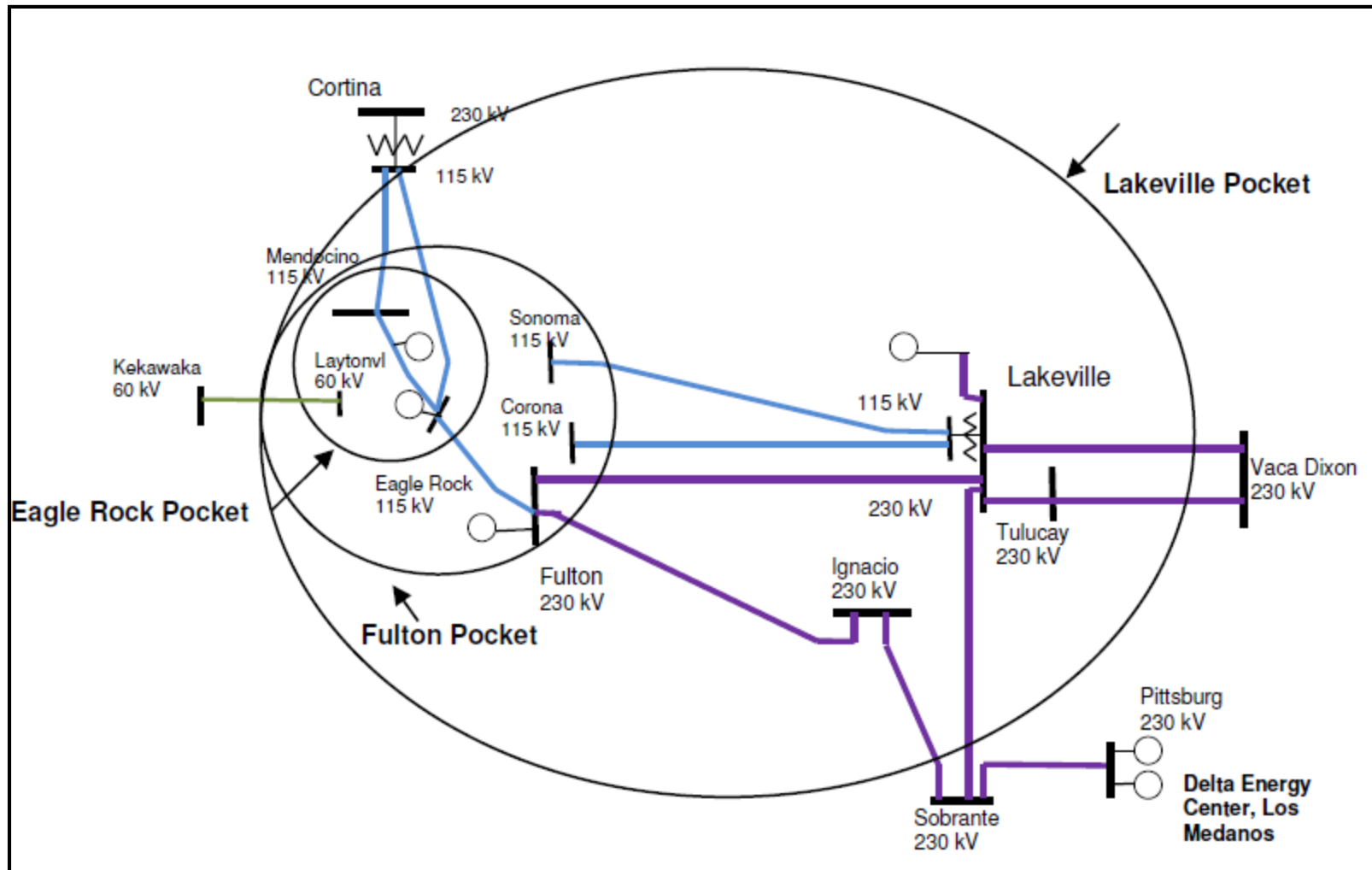
- 1) Updated NQC.
- 2) Load did not change in 2019 compared with 2018
- 3) LCR decreased by 4 MW in 2019 compared to 2018.
- 4) Load went down by 2 MW in 2023 compared with 2022
- 5) LCR remained the same in 2023 compared to 2022.

Since last stakeholder meeting: No changes

North Coast/North Bay Load and Resources (MW)

		2019	2023
Load	=	1500	1557
AAEE	=	-18	-60
Behind the meter DG	=	-56	-15
Transmission Losses	=	40	42
Total Load	=	1465	1524
Market Generation	=	771	771
Wind Generation	=	0	0
Muni Generation	=	114	113
QF Generation	=	5	6
Total Qualifying Capacity	=	890	890

North Coast and North Bay



New major transmission projects

2019:

None

2023:

Vaca Dixon-Lakeville 230 kV Corridor Series Compensation

Eagle Rock Sub-Area

Eagle Rock Sub-area – Single Contingency

Contingency: Cortina-Mendocino 115 kV line, with Geyser #11 unit out

2019 LCR need: 212 MW

2023 LCR need: 238 MW

Limiting component: Thermal overload on Eagle Rock-Cortina 115 kV line

Eagle Rock Sub-area – Double Contingency

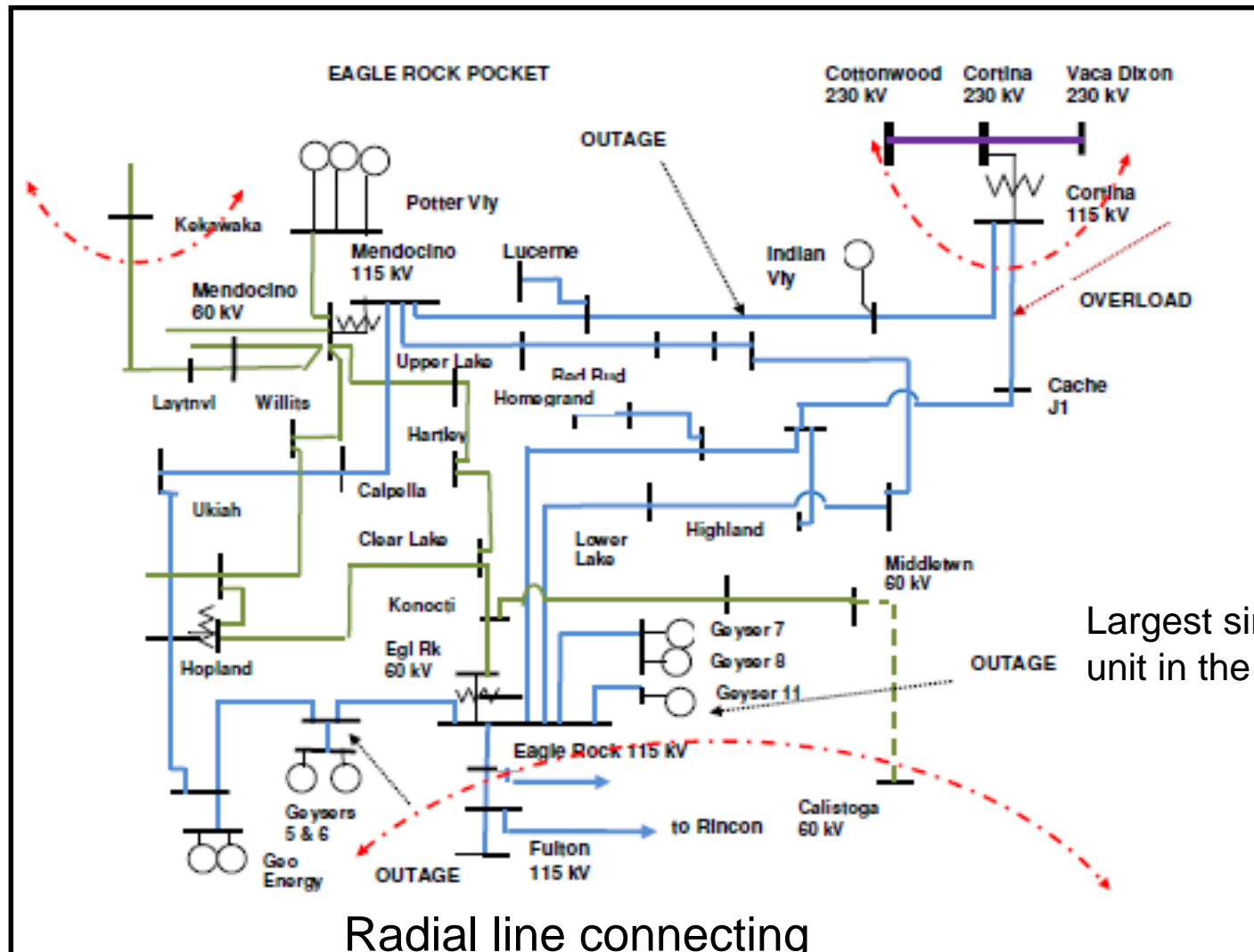
Contingency: Cortina-Mendocino and Geysers #3-Geysers #5 115 kV lines

2019 LCR need: 228 MW

2023 LCR need: 257 MW

Limiting component: Thermal overload on Eagle Rock-Cortina 115 kV line

Eagle Rock Sub-Area



Radial line connecting two units

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Fulton Sub-area

Fulton Sub-area – Single Contingency

No requirement

Fulton Sub-area – Double Contingency

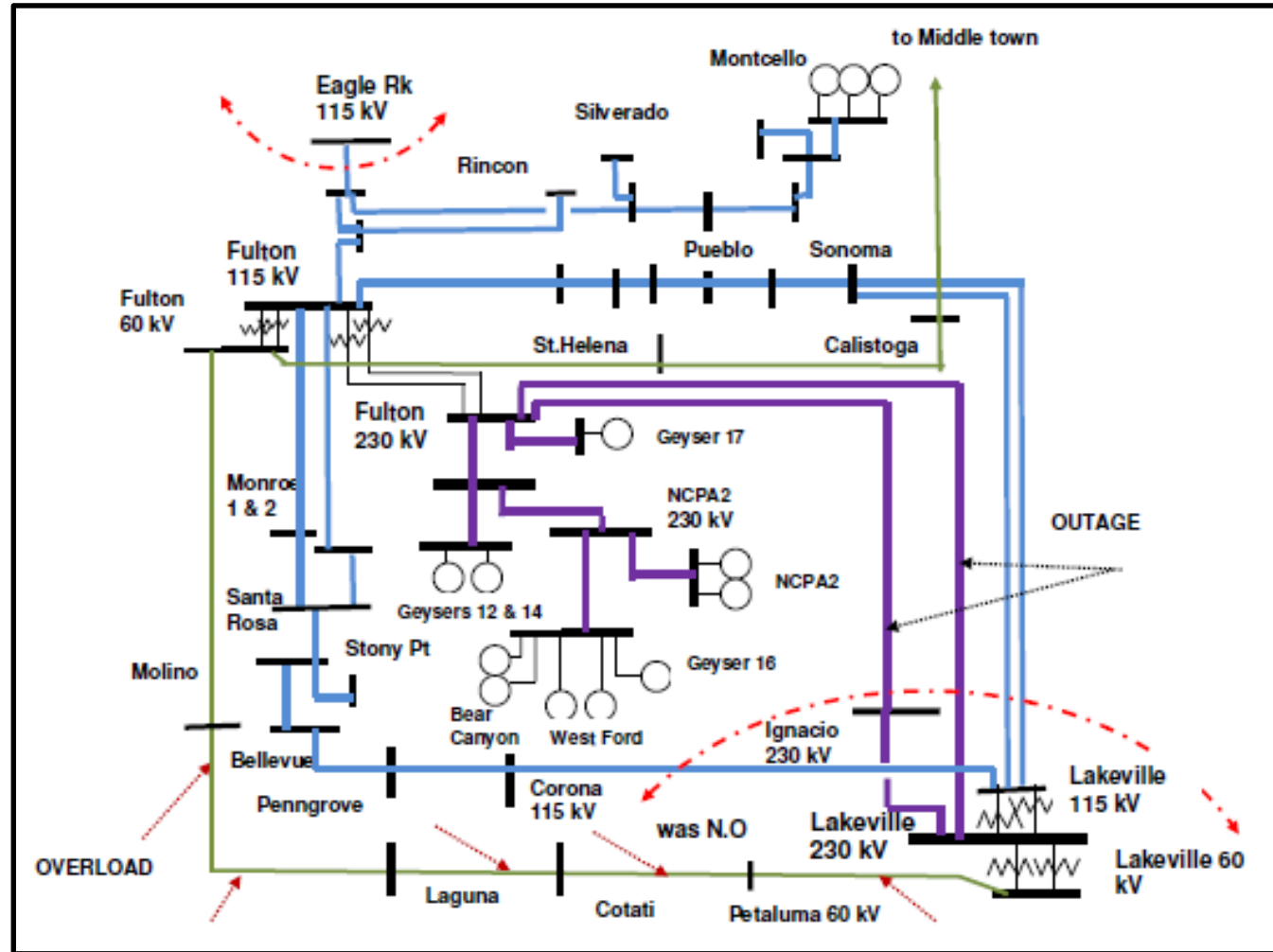
Contingency: Fulton-Lakeville and Fulton-Ignacio 230 kV lines

Limiting component: Thermal overload on Lakeville# 2 60 kV line
(Lakeville-Petaluma-Cotati 60 kV)

2019 LCR need: 525 MW

2023 LCR need: 553 MW

Fulton Sub-area



Lakeville Sub-area

Lakeville Sub-area (NCNB Overall) – Category B

Non-binding Contingency: Vaca Dixon-Tulucay 230 kV line with Delta Energy Center power plant out of service

Limiting component: Thermal overload on the Vaca Dixon-Lakeville 230 kV line

Ames/Pittsburg/Oakland Sub-area – Category C

Contingency1: DCTL Newark-Ravenswood & Tesla-Ravenswood 230 kV

Limiting component: Thermal overload on the Ames-Ravenswood #1 115 kV line

Contingency2: Moraga-Sobrante & Moraga-Claremont #1 115 kV

Limiting component: Thermal overload on the Moraga-Claremont #2 115 kV line

2019 LCR need:

2023 LCR need:

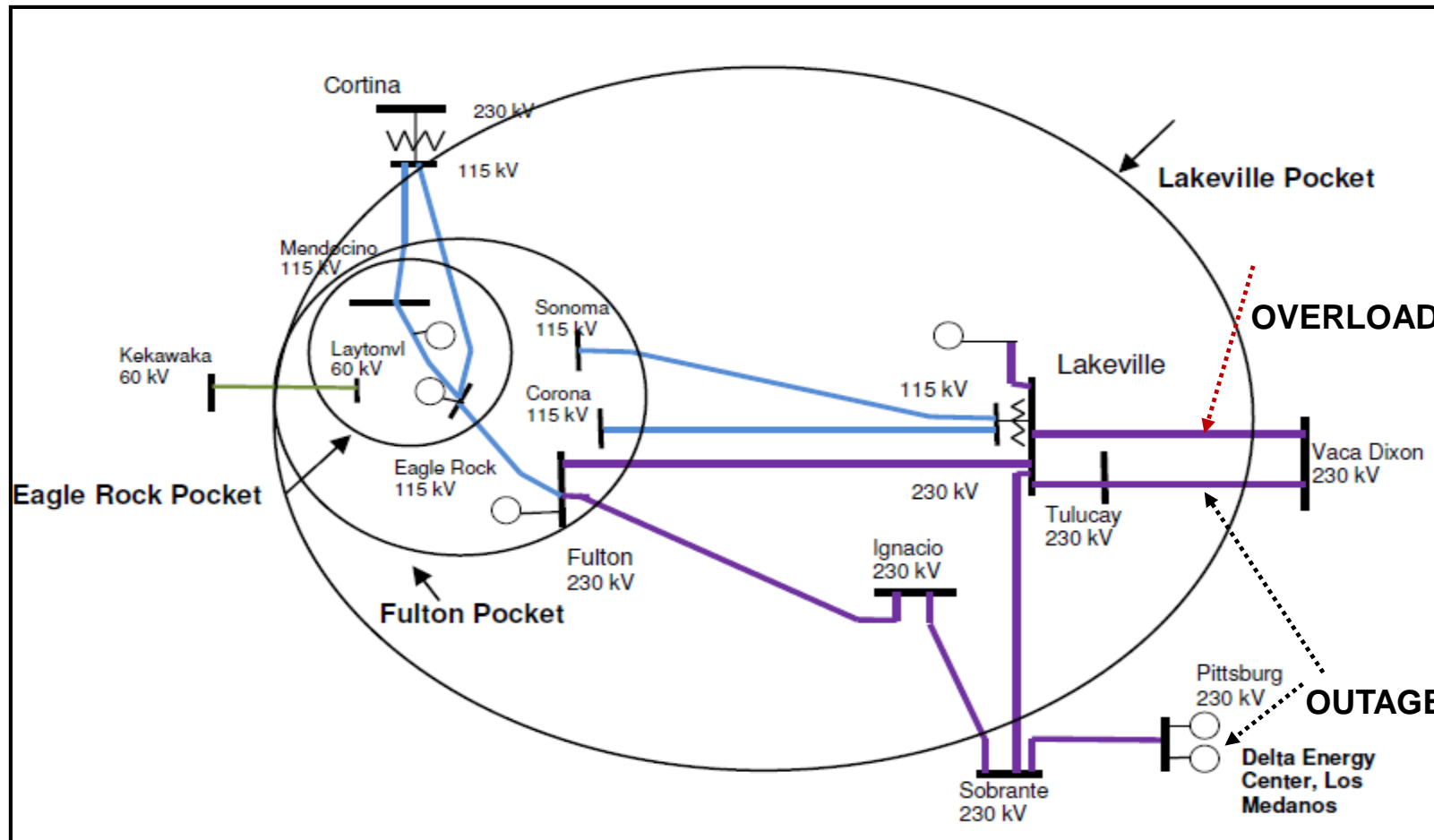
NCNB: 689 MW

553 MW (driven by Fulton need)

Ames/Pittsburg/Oakland : 1741 MW

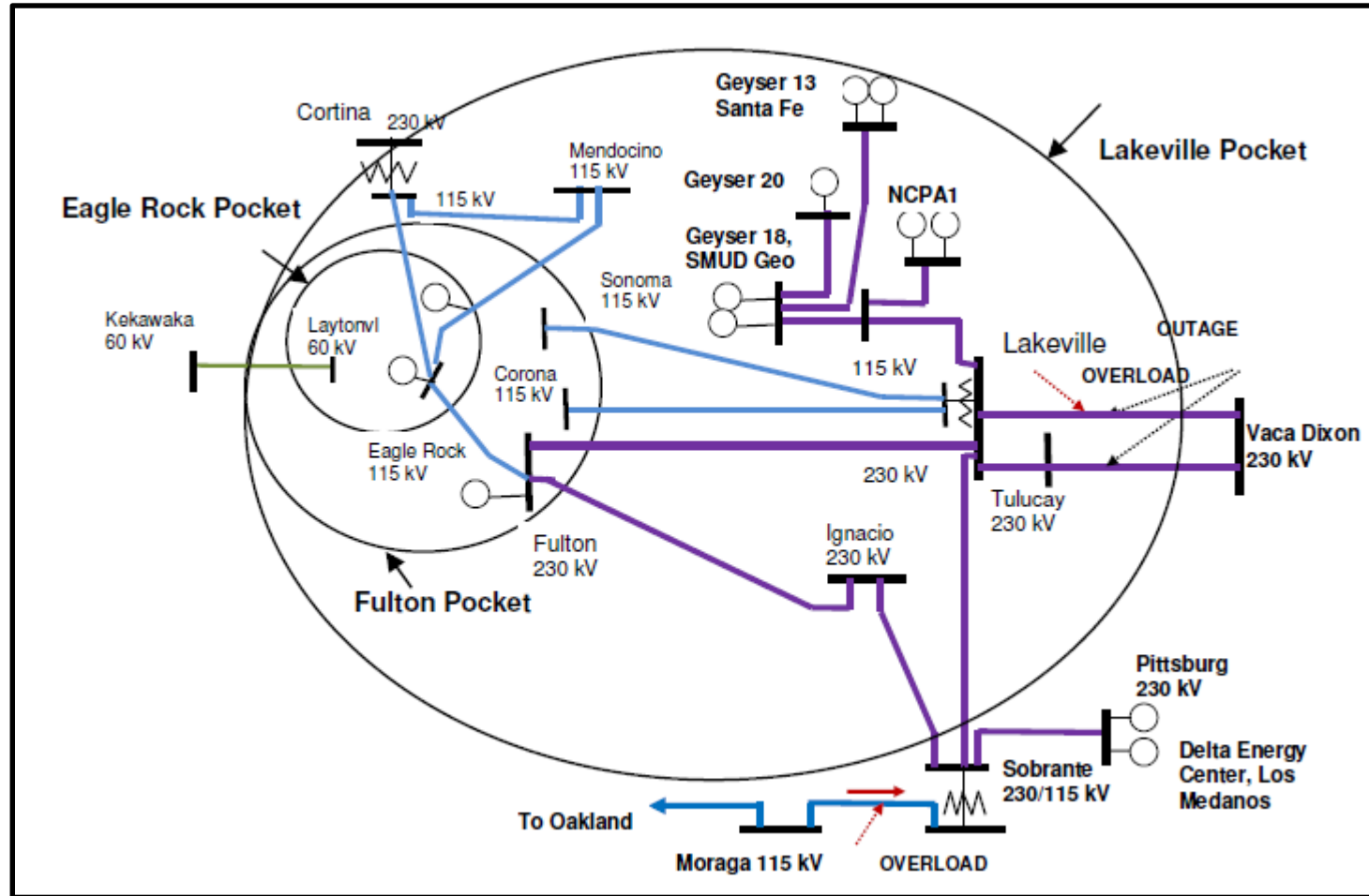
1630 MW

Lakeville sub-area one line and generator



LCR need depends on the generation in the Pittsburg/Ames/Oakland sub-areas.

Lakeville Sub-area double line outage



LCR need depends on the generation in the Pittsburg/Ames/Oakland sub-areas.

Changes

Since last year:

- 1) Updated NQC.
- 2) 2019 load forecast has increased by 132 MW vs. 2018
- 3) LCR need has increased in 2019 vs. 2018 by 55 MW mainly due to load increase.
- 4) 2023 load forecast has increased by 275 MW vs. 2022
- 5) LCR need has increased in 2023 vs. 2022 by 113 MW, mostly due to load increase in the Fulton sub-area.

Since last stakeholder meeting:

- 1) Updated NQC

THANK YOU

Your comments and questions are welcome.

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

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