

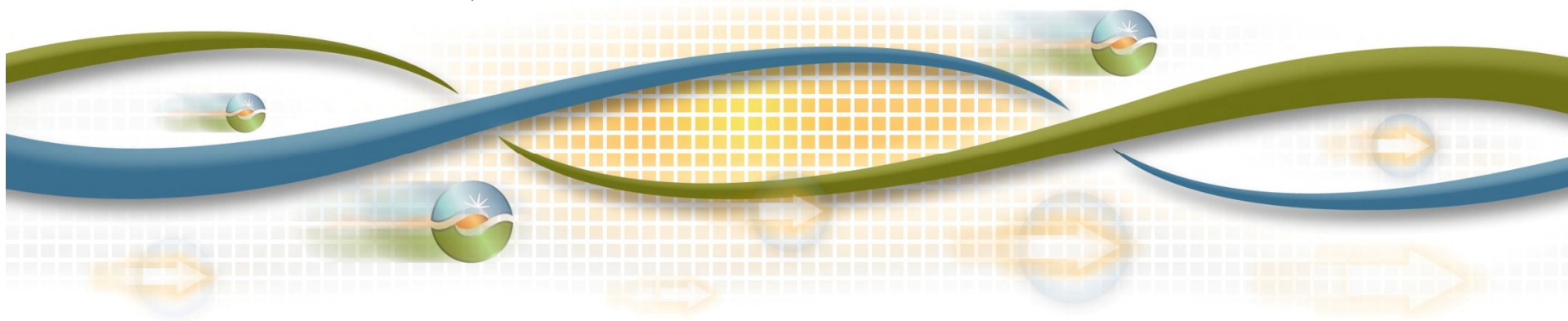
# 2012 Draft LCR Study Results Humboldt and North Coast/ North Bay

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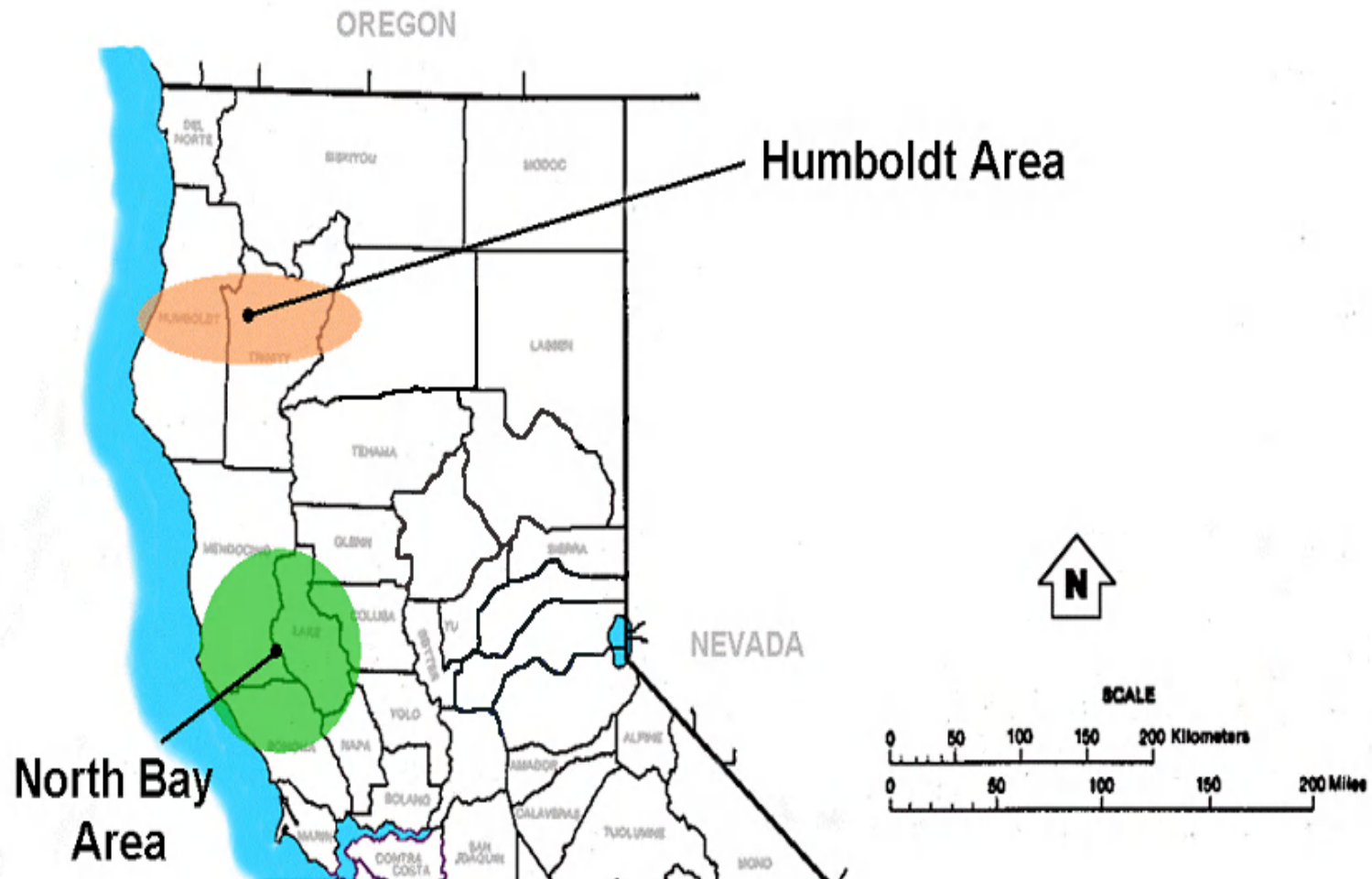
Senior Regional Transmission Engineer

Stakeholder Meeting

March 9, 2011



# Humboldt and North Coast/North Bay



# Humboldt Load and Resources (MW)

**2012**

Load = 200

Transmission Losses = 10

Total Load = **210**

Market Generation = 178

Muni Generation = 0

QF/Self-Gen Generation = 56

Total Qualifying Capacity = **234**

The diagram illustrates the Humboldt Bay area power system, showing the following components and connections:

- 115 kV Transmission Line:**
  - Connects **Humboldt Bay** to **Trinity**.
  - Substations along this line include **Bridgeville**, **Low Gap**, **Wildwood**, and **Cottonwood**.
- 60 kV System:**
  - Branches off from Humboldt Bay, passing through **Maple Creek** and **Ridge Cabin**.
  - Connects to **Garberville**, **Kekawaka**, and **Laytonville** from Bridgeville.
- Other Connections:**
  - Humboldt Bay** is connected to **Pacific Lumber** and **Garberville**.
  - Trinity** is connected to **Cottonwood**.

The diagram uses color-coding to distinguish between voltage levels: green lines for 60 kV and red lines for 115 kV. Blue arrows indicate the direction of power flow.

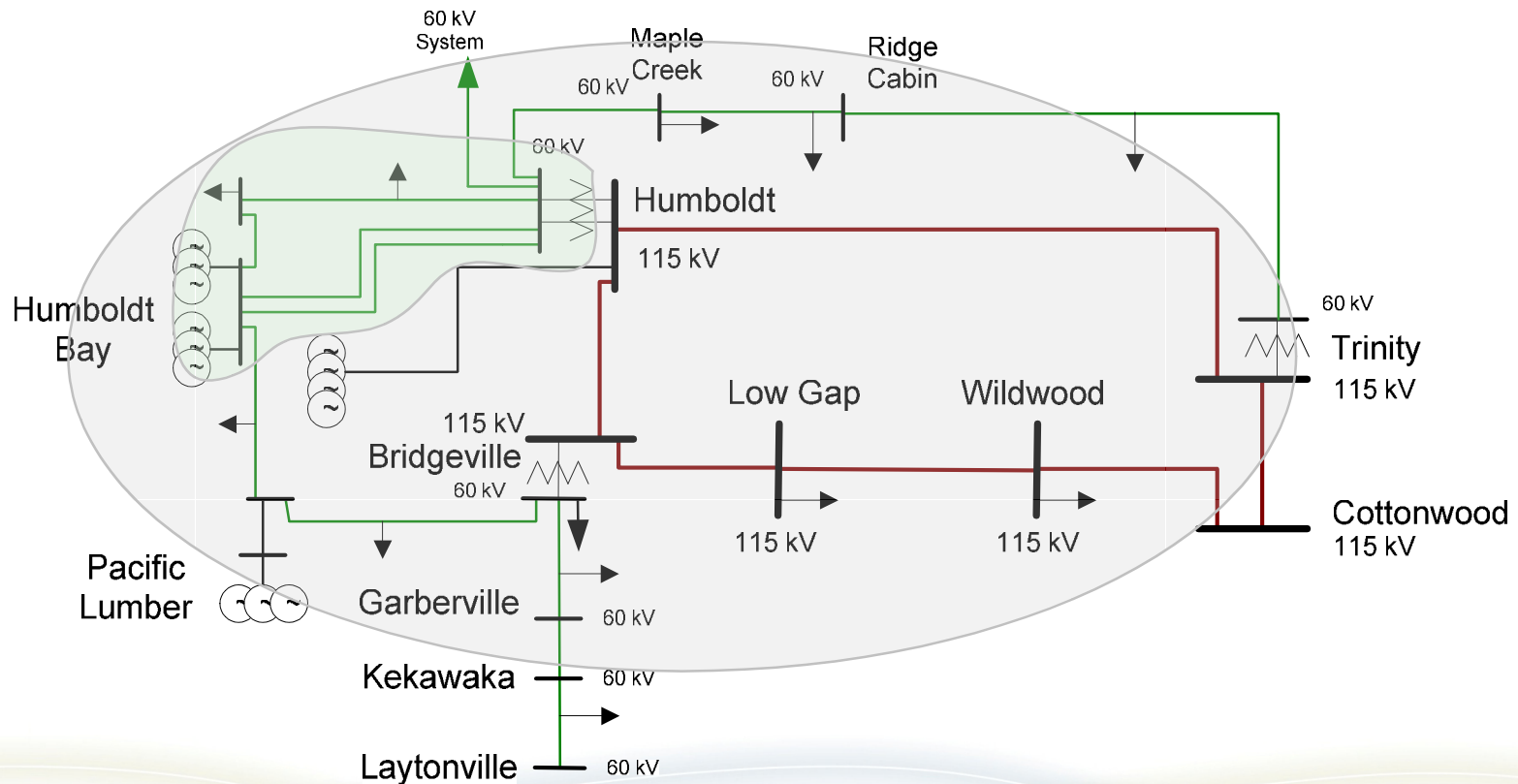
# Critical Contingencies

## Humboldt Area

Two types of requirements:

Humboldt 60 kV Pocket

Entire Humboldt area



# Critical Contingencies

## Humboldt 60 kV Sub-area

### **Humboldt 60 kV Sub-area – Category B**

Contingency: An outage of one Humboldt 115/60 kV Transformer

LCR need: 129 MW (including 56 MW of QF/Self generation)

Limiting component: Thermal overload on the parallel Humboldt 115/60 kV Transformer

### **Humboldt 60 kV Sub-area – Category C**

Contingency: An outage of one Humboldt 115/60 kV Transformer and one of the 60 kV tie-lines connecting Humboldt Bay units

LCR need: 177 MW (including 56 MW of QF/Self generation and 9 MW of deficiency)

Limiting component: Thermal overload on the parallel Humboldt 115/60 kV Transformer



# Critical Contingencies Humboldt Area

## Humboldt Overall – Category B

Contingency: An outage of Cottonwood-Bridgeville 115 kV line  
with one of the Humboldt pp units out of service

LCR need: 159 MW (including 56 MW of QF/Self generation)

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

## Humboldt Overall – Category C

Contingency: An outage of Cottonwood – Bridgeville 115 kV  
line overlapping with an outage of the 115 kV  
tie-line connecting the Humboldt Bay Units

LCR need: 190 MW (including 56 MW of QF/Self generation)

Limiting component: Thermal overload on the Humboldt –  
Trinity 115kV Line

# Changes

## Since last year:

1. The new Blue Lake geothermal generation project (12 MW) connected to Essex Jct-Arcata-Fairhaven 60 kV line is modeled.
2. Humboldt area load is 4 MW higher than last year.
3. LCR need is similar to the need of 2011. Total Existing Capacity needed for LCR is 2 MW higher.
4. Deficiency has decreased due to new Blue Lake unit.

**Your comments and questions are welcomed**

**Please send written comments to:**  
**[RegionalTransmission@caiso.com](mailto:RegionalTransmission@caiso.com)**



# North Coast/Bay Load and Resources (MW)

**2012**

Load = 1386

Transmission Losses = 34

Total Load = **1420**

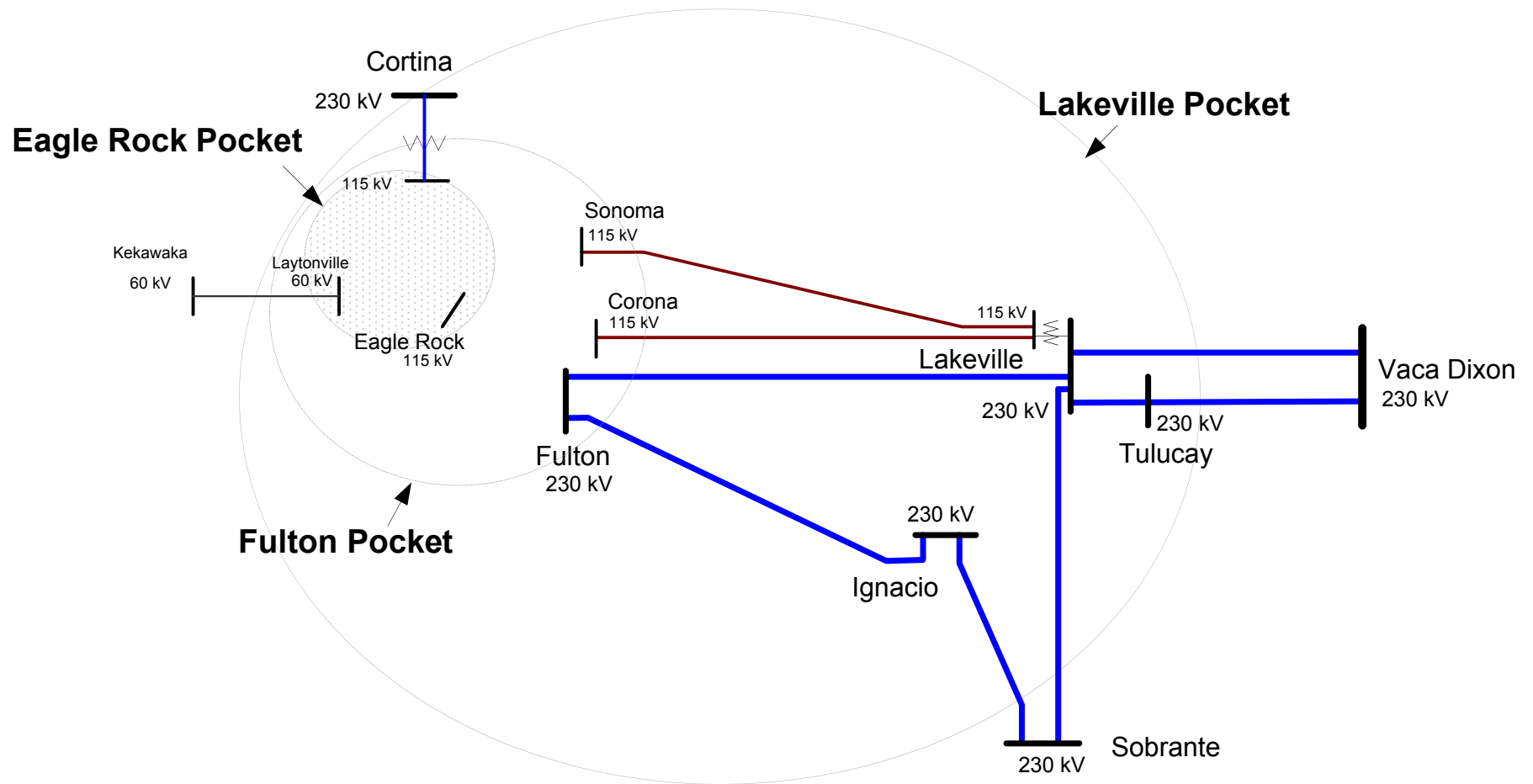
Market Generation = 728

Muni Generation = 116

QF Generation = 14

Total Qualifying Capacity = **858**

# North Coast and North Bay



# Eagle Rock Sub-Area

## **Eagle Rock Sub-area – Category B**

Contingency: Cortina-Mendocino 115 kV

LCR need: 166 MW (includes 2 MW of QF/Muni generation)

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

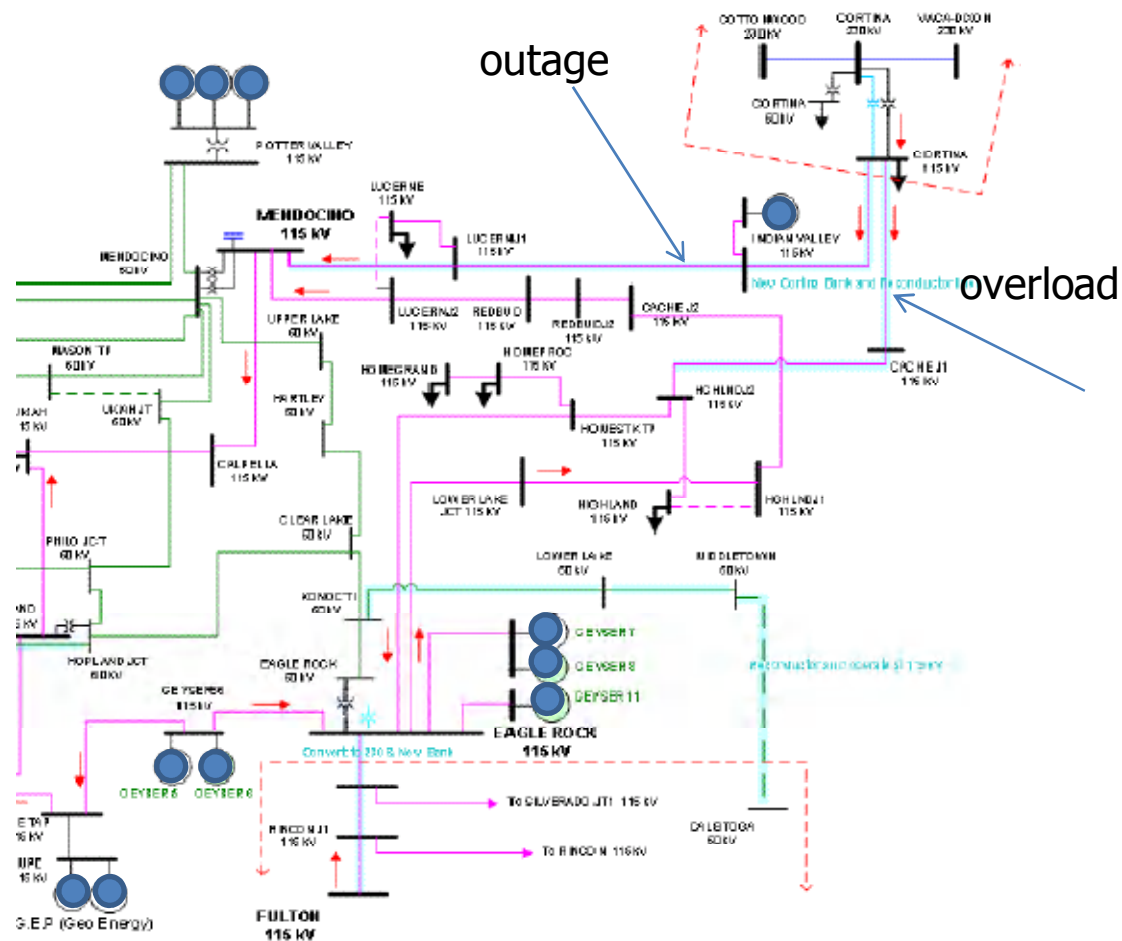
## **Eagle Rock Sub-area – Category C**

Contingency: Cortina-Mendocino 115 kV and Fulton-Lakeville  
230 kV line

LCR need: 207 MW (includes 2 MW of QF/Muni generation)

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

# Eagle Rock Sub-Area



# Fulton Sub-area

## Fulton Sub-area – Category C

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

LCR need: 293 MW (includes of 14 MW QF and 55 MW of Muni generation)

Limiting component: Thermal overload on Santa Rosa-Corona 115kV line



# Lakeville Sub-area

## **Lakeville Sub-area (NC/NB Overall) – Category B**

Contingency: Vaca Dixon-Tulucay 230 kV line and DEC power plant out of service

LCR need: 622 MW (includes 14 MW QF and 116 MW of Muni generation)

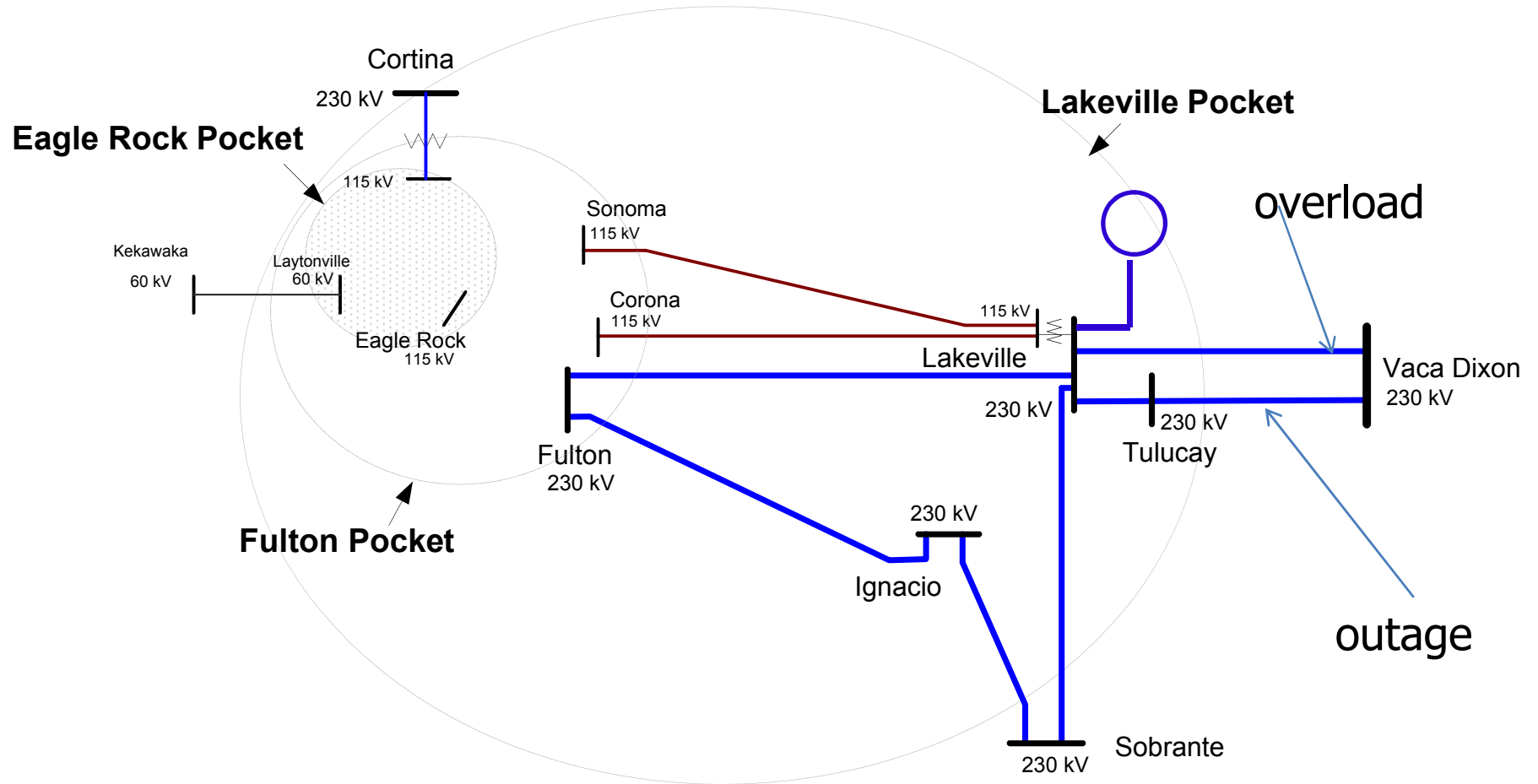
Limiting component: Thermal overload on the Vaca Dixon-Lakeville 230 kV line

## **Lakeville Sub-area (NC/NB Overall) – Category C**

Not binding



# Lakeville Sub-area



# Changes

## Since last year:

1. North Coast and North Bay area load is 154 MW (9.8%) lower than last year
2. Total LCR need has decreased by 112 MW

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