



Transmission Projects Seeking Approval in Humboldt, North Coast & North Bay Areas

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2009 CAISO Transmission Plan Stakeholder Meeting

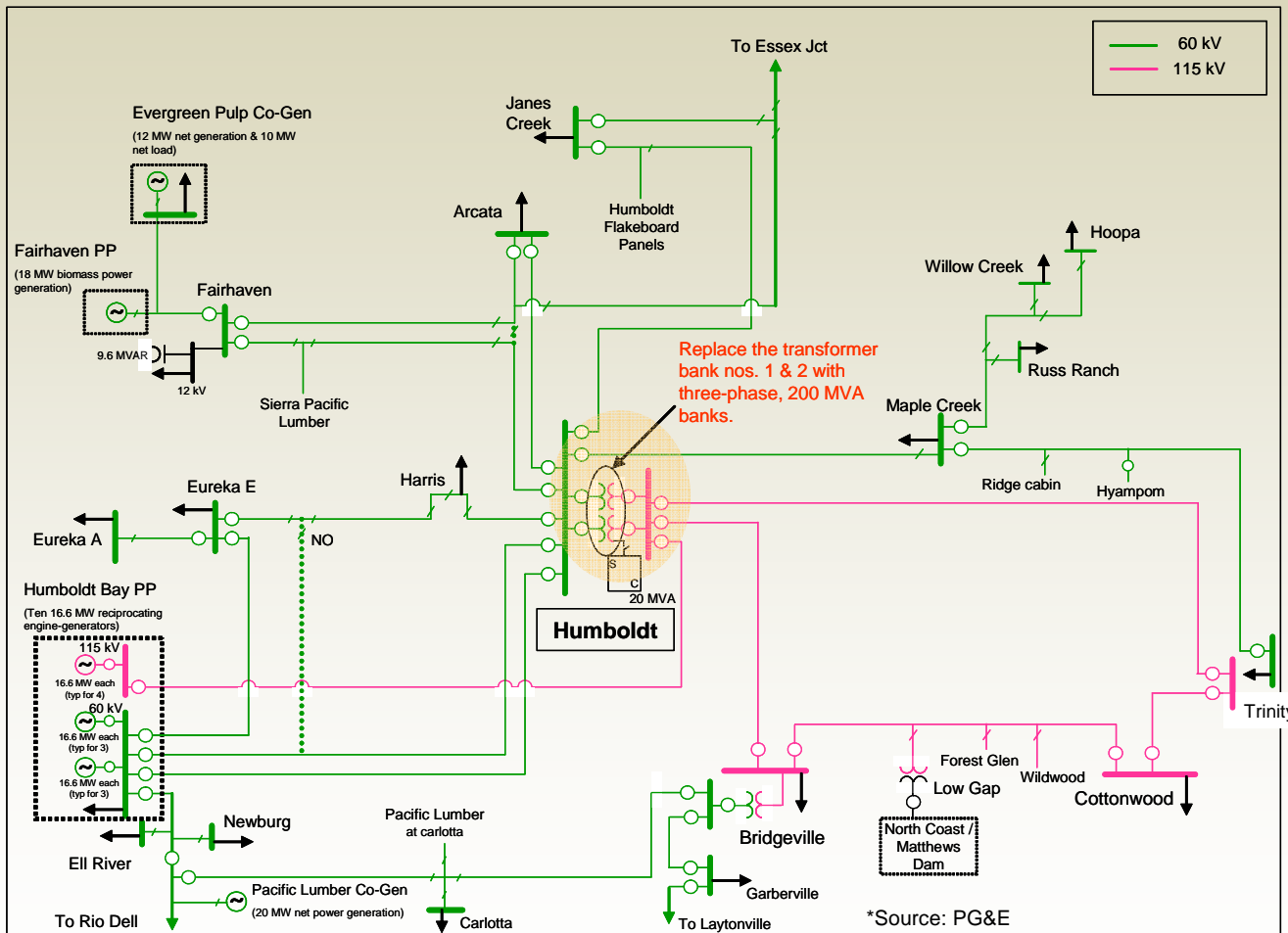
February 27, 2009

Overview of 2008 Request Window Humboldt, North Coast and North Bay Areas

- CAISO has proposed a total of 18 solutions to address the potential problems in the Humboldt, North Coast & Bay areas
- A total of 10 projects were submitted through the Request Window
- 7 projects were submitted by SCE, 3 by Merchant Transmission Company
- CAISO Staff recommends ISO Management approval of 6 projects,
- CAISO Staff recommends further review on the remaining 4 projects, some of which will require policy review

Projects Recommended for CAISO Management Approval

(1) Humboldt 115/60 Banks Replacement Project



Project Proponent

- PG&E

Needs

- NERC Category B/C overloads (2013)
- Operational concerns (winter)
- LCR limitations (2011)
- Identified limitation from deliverability assessment

Project Scope

- Replace both existing banks with higher ratings transformers (200/220 MVA)

Costs

- Less than 15 \$M

Other Considered Alternative

- Adding the 3rd transformer
- Utilizing SPS

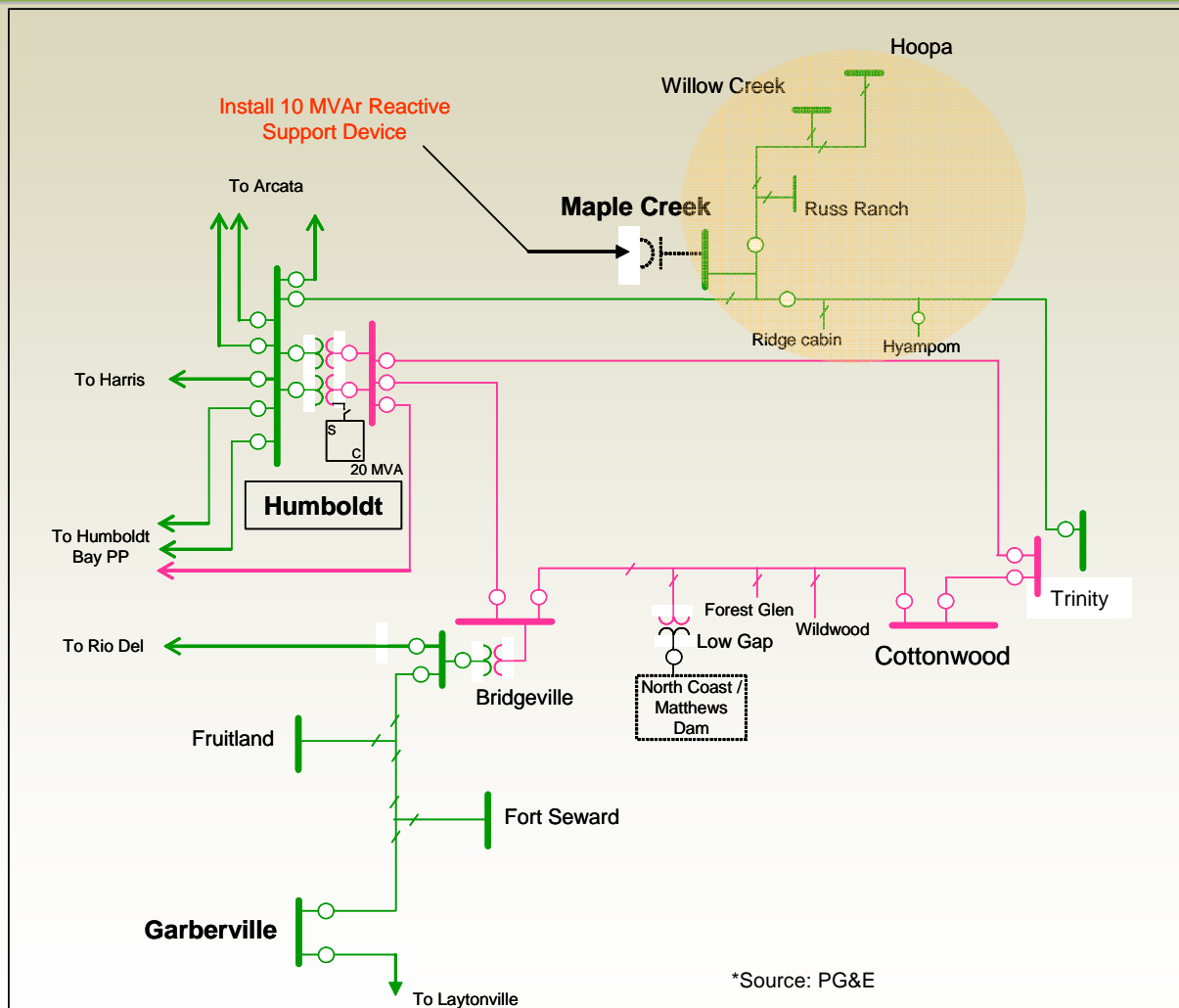
-Expected In-Service

- December 2010

Recommended Action

- Approval by CAISO Management

(2) Maple Creek Reactive Support



Project Proponent

- PG&E

Needs

- NERC Category B/C Under Voltages (Now)
- Voltage stability concerns

Project Scope

- Install approx 10 MVAR of dynamic reactive support (SVC)

Costs

-2-5 \$M

Other Considered Alternative

- Install shunt cap
- Load dropping

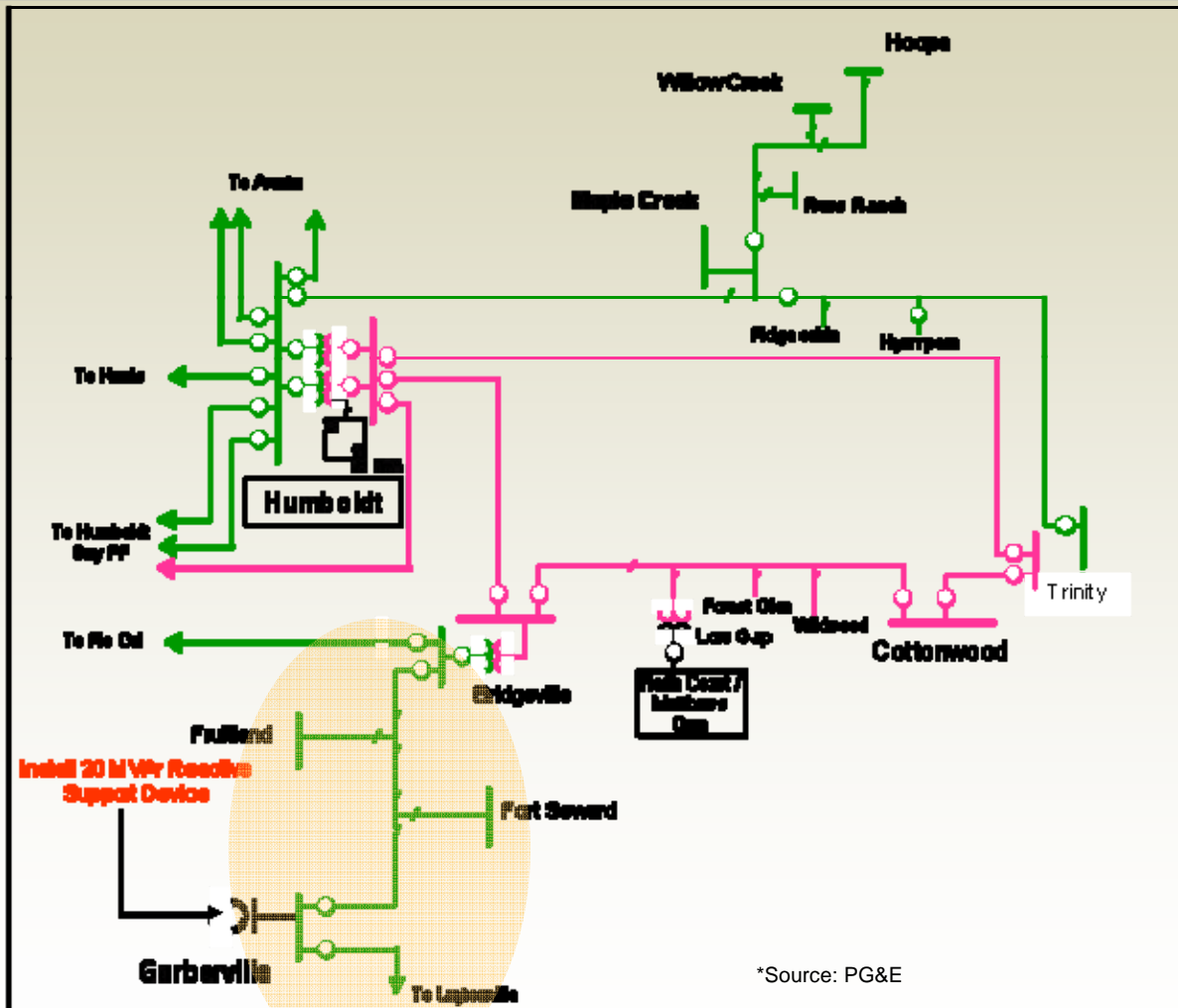
Expected In-Service

-May 2011

Recommended Action

- Approval by CAISO Management

(3) Garberville Reactive Support



Project Proponent

- PG&E

Needs

- NERC Category B/C Under voltages (Now)
- Voltage stability concerns

Project Scope

- Install approx 20 MVAR of dynamic reactive support (SVC)

Costs

- Less than 10 \$M

Other Considered Alternative

- Install reactive resources at different locations
- Install shunt cap
- Load dropping

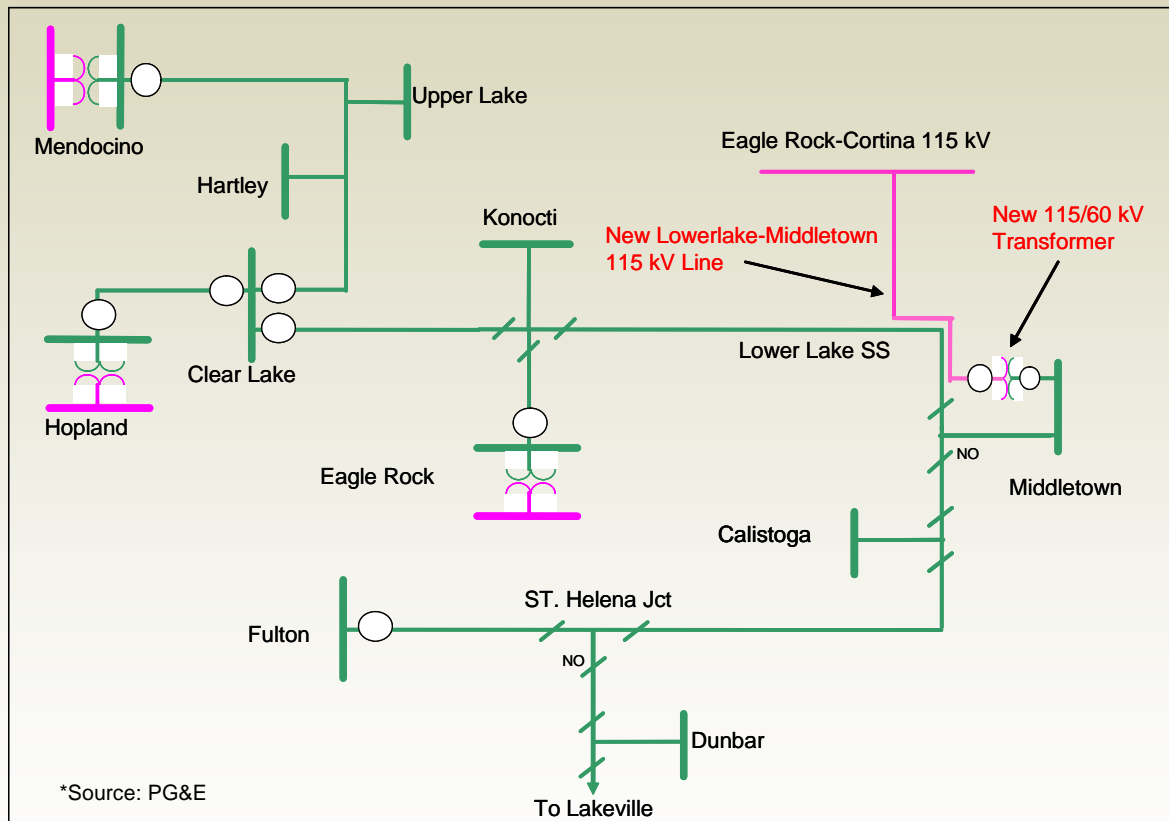
Expected In-Service

- May 2011

Recommended Action

- Approval by CAISO Management

(4) Clear Lake 60 kV System Reinforcement Project



Project Proponent

- PG&E

Needs

- Various NERC Category B,C Overloads (Now)
- Various NERC Category B,C Under Voltages (Now)
- Various Category B,C diverged cases
- Provide operational flexibility (Allow Calistoga - Middletown switching)
- Improve system reliability (Use UVLS at Middletown as the safety net only)

Project Scope

- Build a new 12-mile 115 kV line (297/345 A) tapping Eagle Rock-Cortina line to Middletown substation.
- Install 100 MVA 115/60 kV Bank at Middletown substation

Costs

- Less than 30 \$M

Other Considered Alternative

- Increase import capability to the North Geysers area such as adding 2nd Cortina Bank or Connecting Lower Lake with Middletown

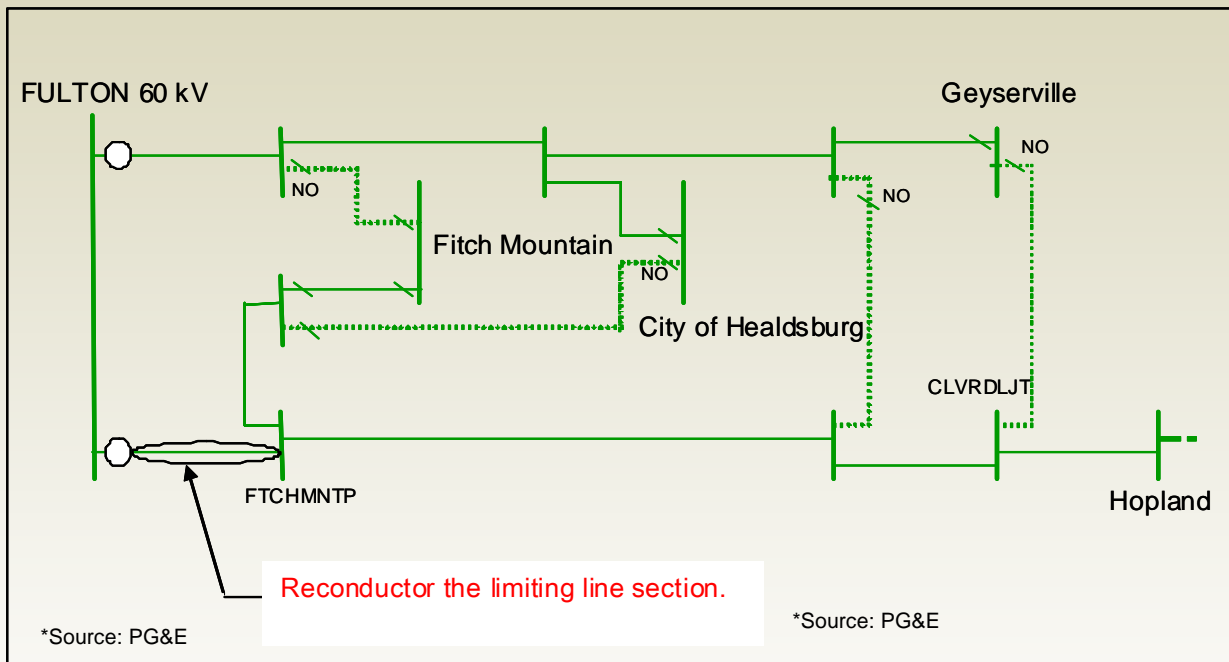
Expected In-Service

-May 2012

Recommended Action

- Approval by CAISO Management

(5) Fulton – Fitch Mountain 60 kV Reconductor Project



Project Proponent

- PG&E

Needs

- NERC Category C Overloads (Now)
- LCR reduction in North Geysers

Project Scope

- Reconductor the limiting 8 Miles section with 715 Al conductor (631/742A)

Costs

- Less than 5 \$M

Other Considered Alternative

- Disable the switching scheme

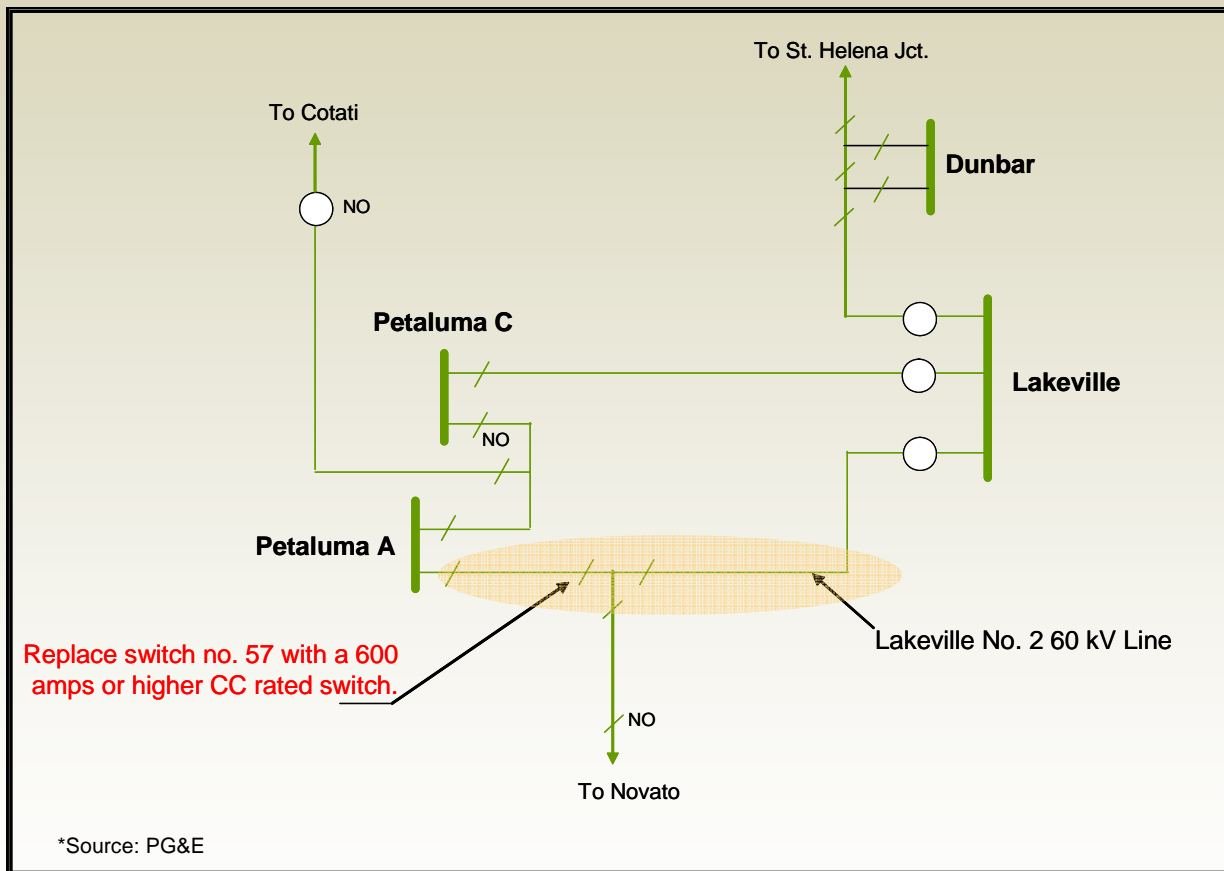
Expected In-Service

- May 2013

Recommended Action

- Approval by CAISO Management

(6) Lakeville No. 2 Line Switch Upgrade



Project Proponent

- PG&E

Needs

- NERC Category B/C overloads (Now)
- Avoid load dropping after switching scheme

Project Scope

- Replace switch 57 to increase rating of this section from 400 to 440/517A

Costs

- Less than 1 \$M

Other Considered Alternative

- Disable the switching scheme
- Reconductor the overloaded section

Expected In-Service

- May 2010

Recommended Action

- Approval by CAISO Management

Projects denied

- Garberville Interim Solution
- Maple Creek Interim Solution

On-going Projects

- Ignacio-Mare Island 115 kV System Reinforcement Project
- Eagle Rock and Mendocino 115 kV Capacity Increase
- Trinity Interim Solution