



2023 & 2027 Final LCR Study Results North Coast & North Bay Area

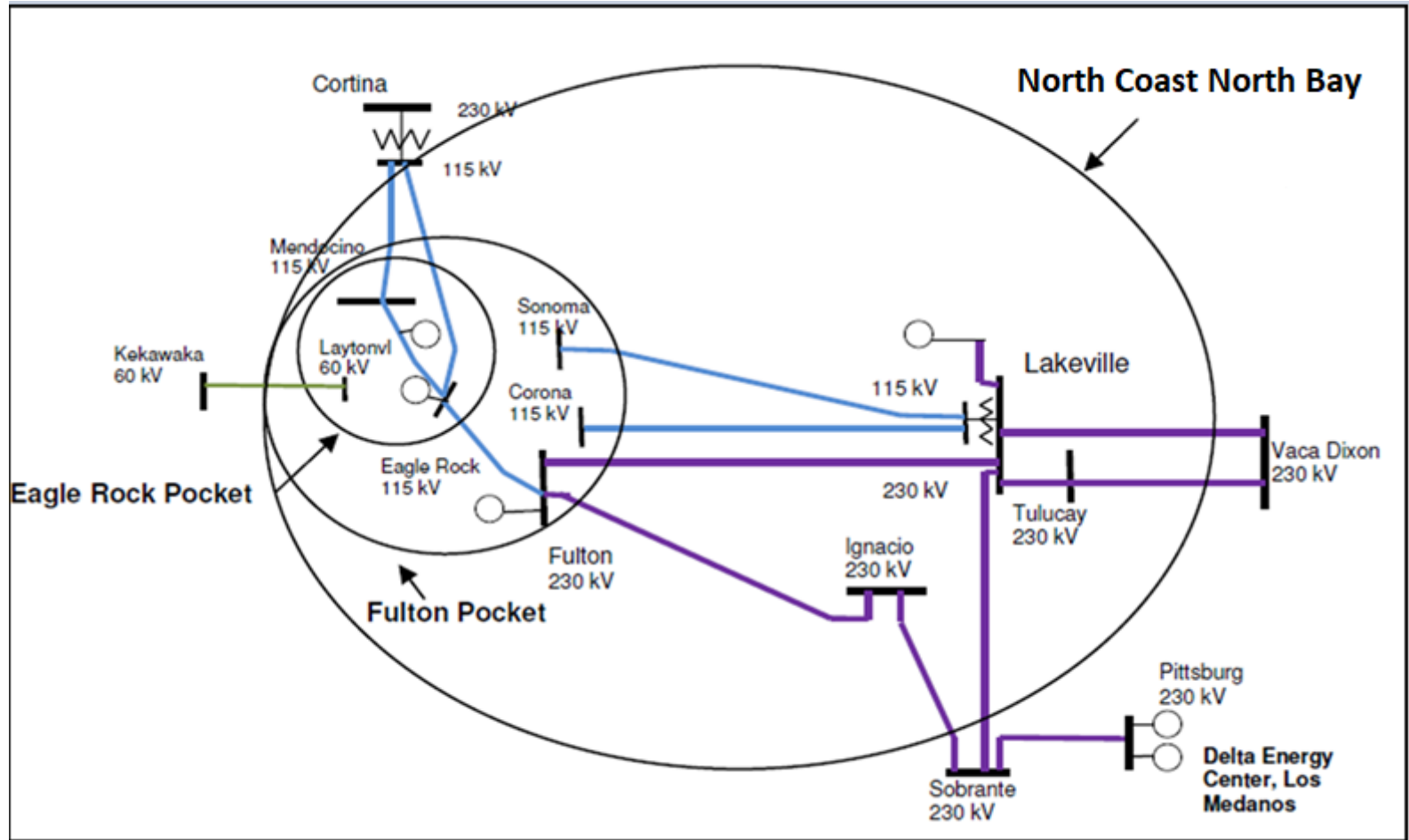
Bryan Fong

Senior Regional Transmission Engineer

Stakeholder Call

April 12, 2022

North Coast & Bay Area Transmission System



Major transmission projects

Project Name	Expected ISD
Vaca Dixon-Lakeville 230 kV Corridor Series Compensation	Oct 2025
Tulucay-Napa #2 60 kV Line Capacity Increase	Dec 2026

Resource Additions:

- No new resource additions

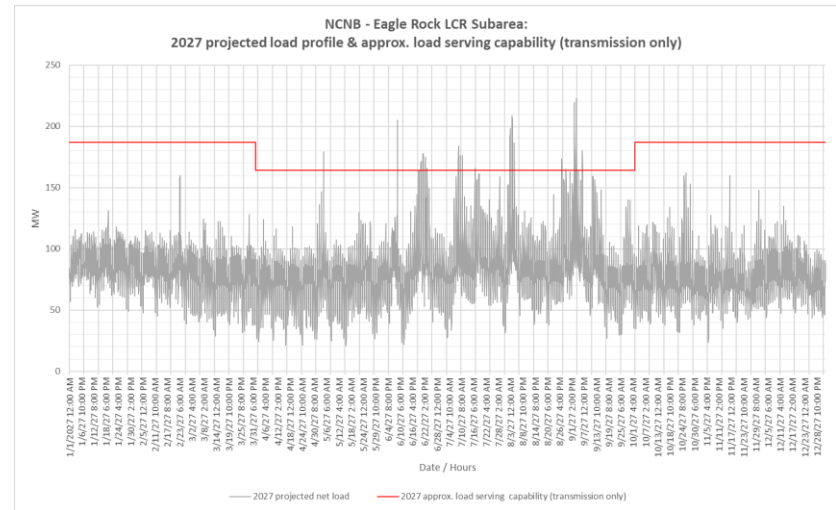
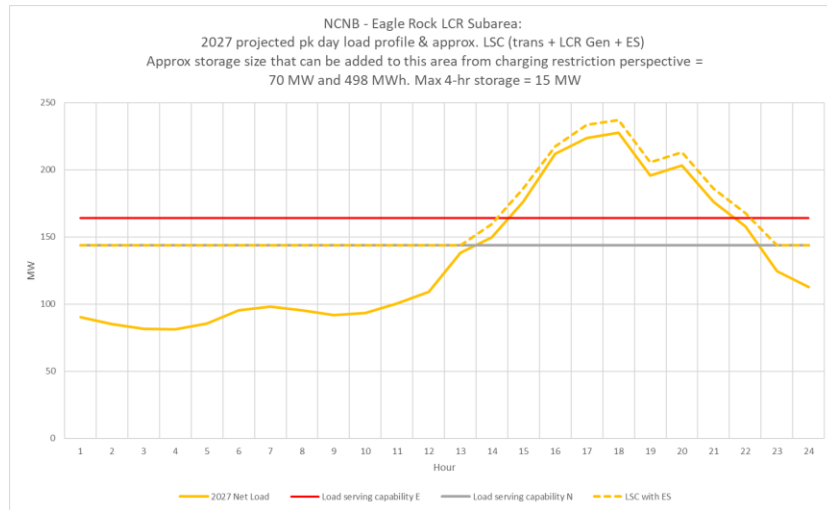
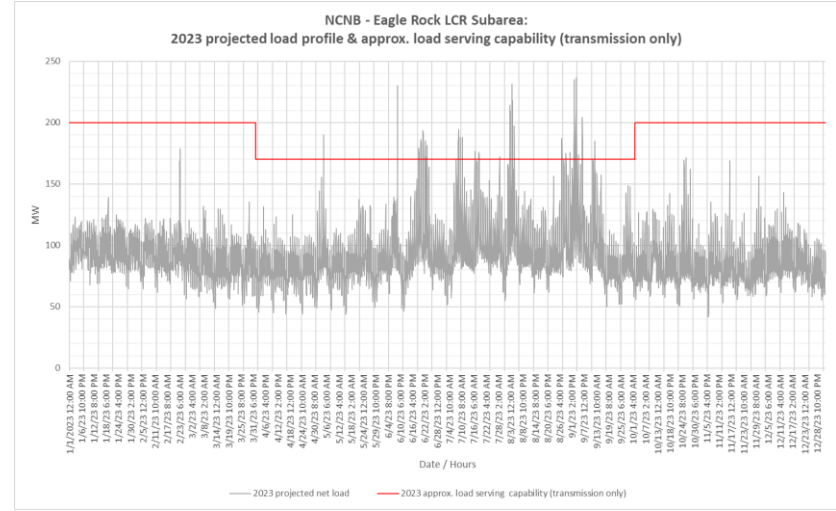
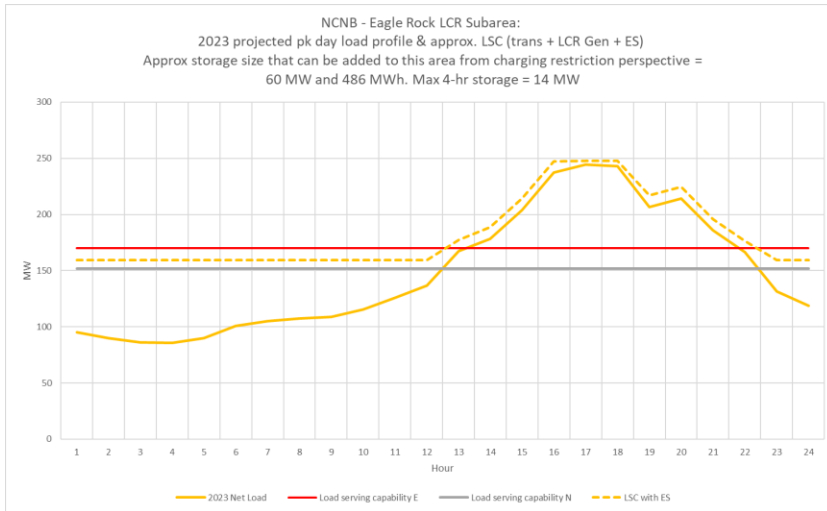
Resource Retirements:

- No new retirements

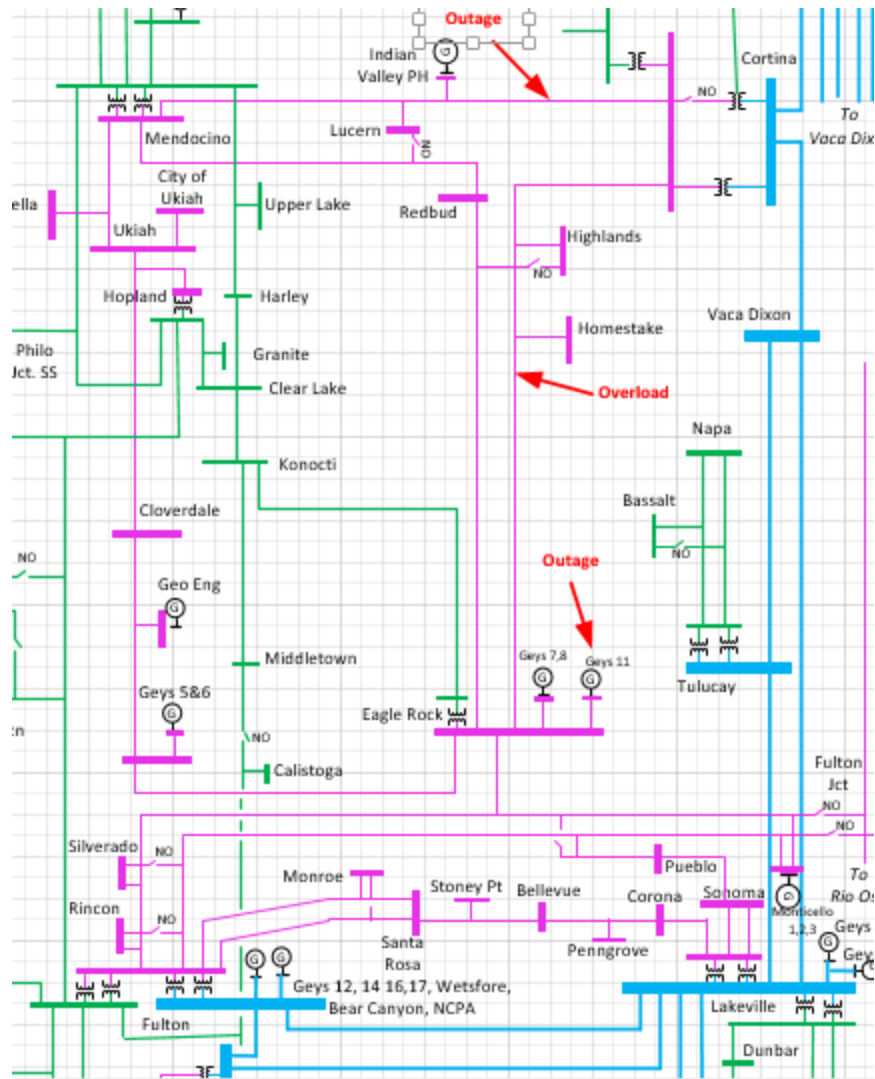
Eagle Rock Sub-area: Load and Resources

Load (MW)	2023	2027	Generation (MW)	2023	2027
Gross Load	251	260	Market	275	275
AAEE	-4	-6	Solar	0	0
Behind the meter DG	0	0	Muni	2	2
Net Load	247	254	QF	0	0
Transmission Losses	13	14	Future preferred resource and energy storage	0	0
			Existing 20-minute Demand Response	0	0
Pumps	0	0	Total Qualifying Capacity	277	277
Load + Losses + Pumps	260	268			

Eagle Sub-area: Load Profiles



Eagle Rock Sub-Area: One-line diagram



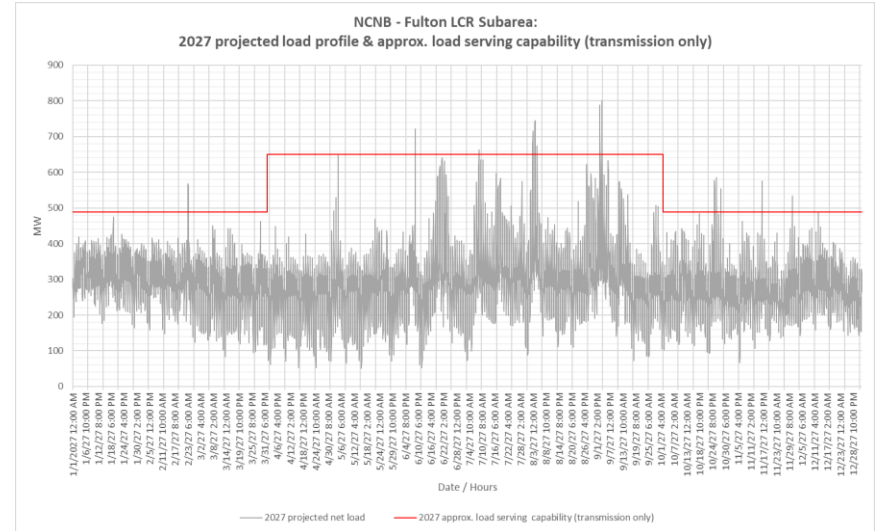
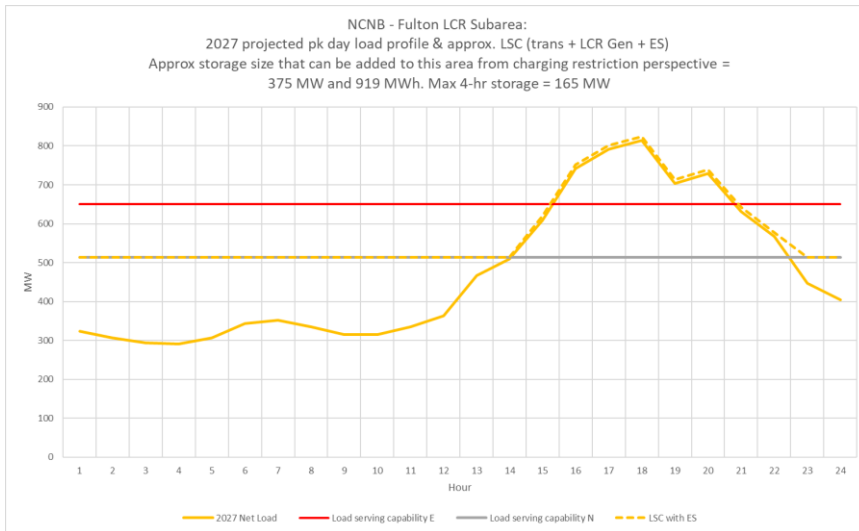
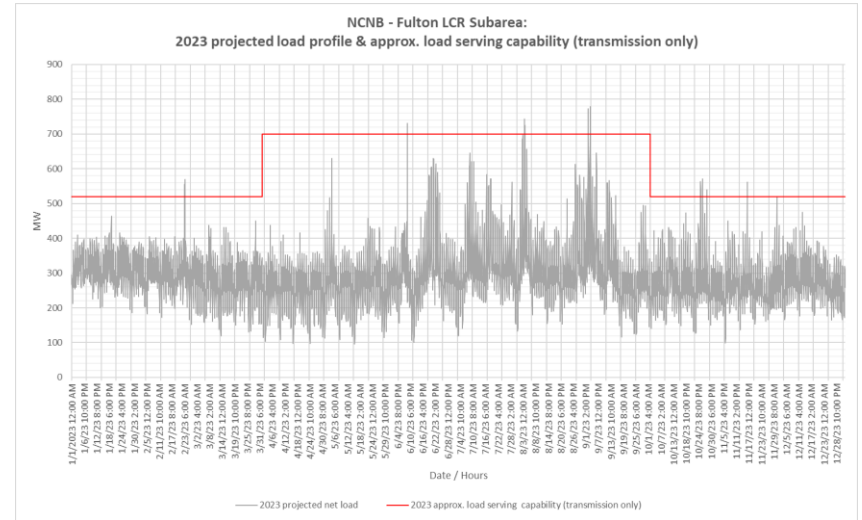
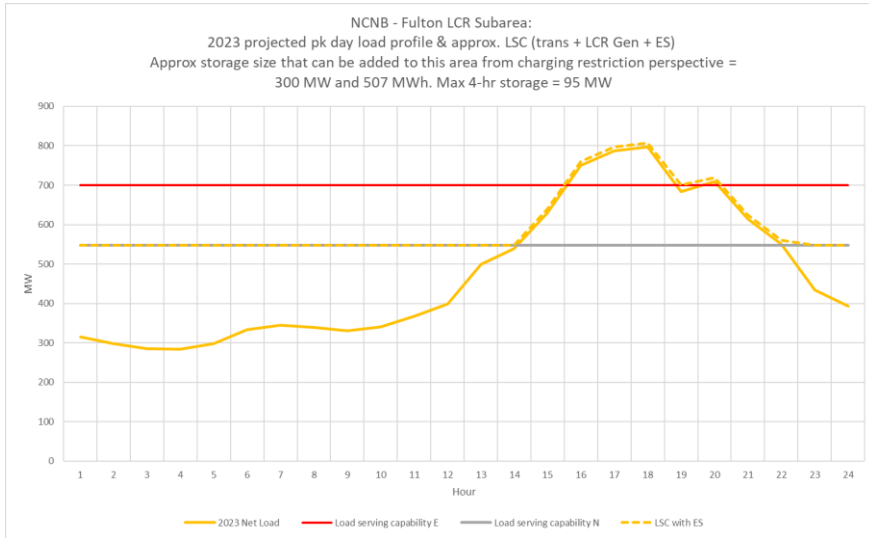
Eagle Rock Sub-Area: Requirements

Year	Limit	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2023	First Limit	P3	Thermal overload on Eagle Rock-Cortina 115 kV line	Cortina-Mendocino 115 kV line with Geyser #11 unit out of service	246
2027	First Limit	P3	Thermal overload on Eagle Rock-Cortina 115 kV line	Cortina-Mendocino 115 kV line with Geyser #11 unit out of service	258

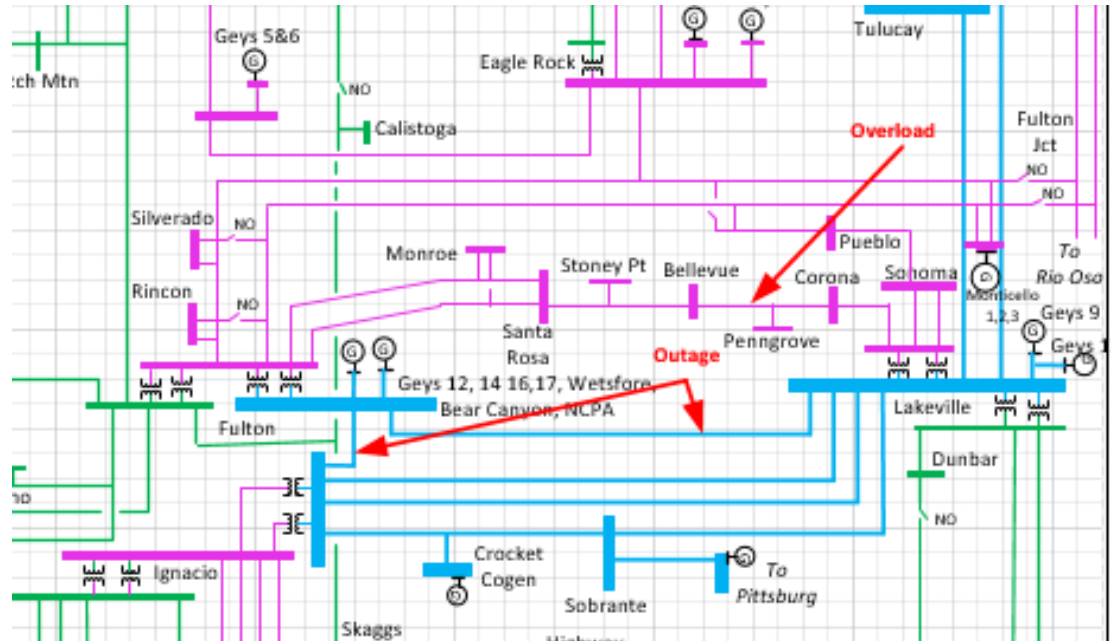
Fulton Sub-area: Load and Resources

Load (MW)	2023	2027	Generation (MW)	2023	2027
Gross Load	889	911	Market	487	487
AAEE	-9	-13	Wind	0	0
Behind the meter DG	0	0	Muni	54	54
Net Load	880	898	QF	5	5
Transmission Losses	26	26	Future preferred resource and energy storage	0	0
			Existing 20-minute Demand Response	0	0
Pumps	0	0	Total Qualifying Capacity	546	546
Load + Losses + Pumps	906	924			

Fulton Sub-area: Load Profiles



Fulton Sub-Area: One-line diagram



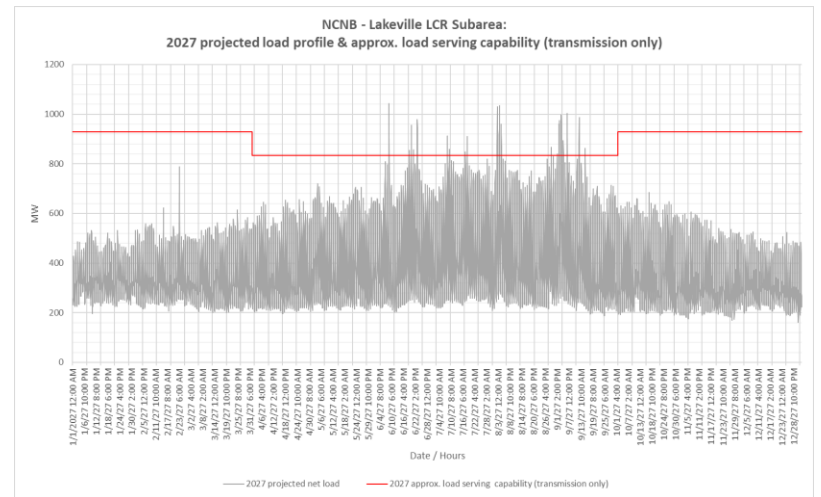
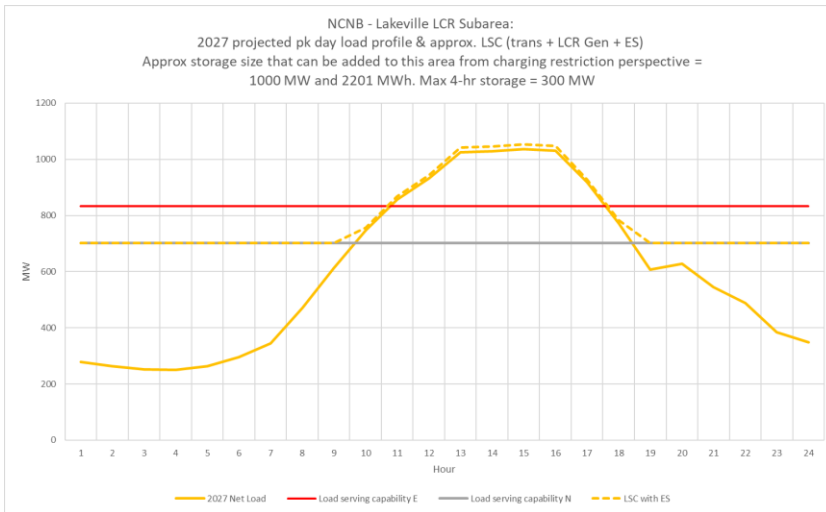
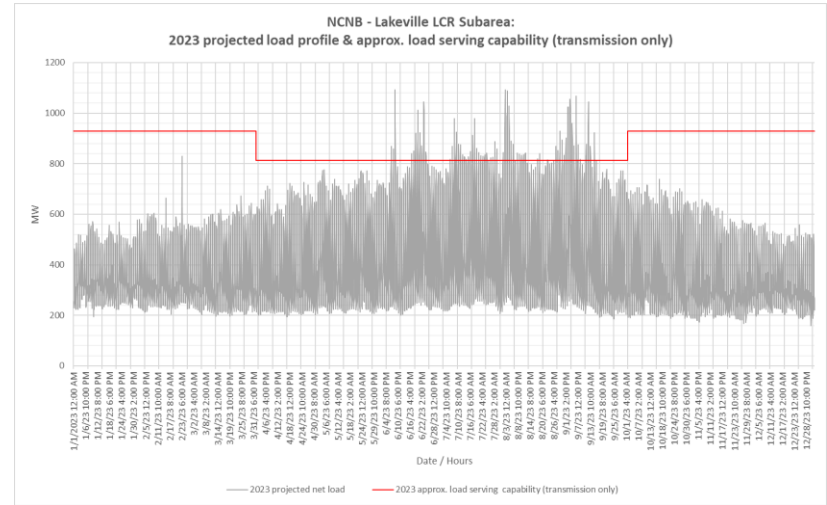
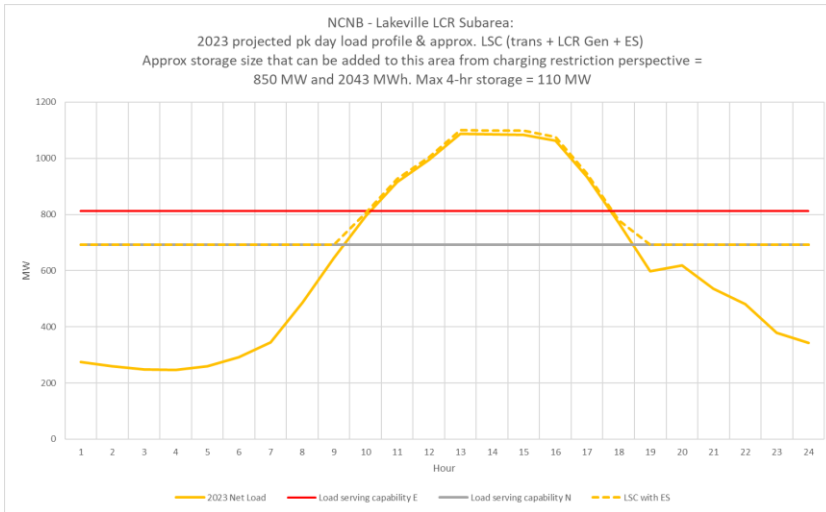
Fulton Sub-Area: Requirements

Year	Limit	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2023	First Limit	P6	Thermal overload on Corona-Penngrove 115kV Line	Fulton-Lakeville and Fulton-Ignacio 230 kV lines	337
2027	First Limit	P6	Thermal overload on Corona-Penngrove 115kV Line	Fulton-Lakeville and Fulton-Ignacio 230 kV lines	378

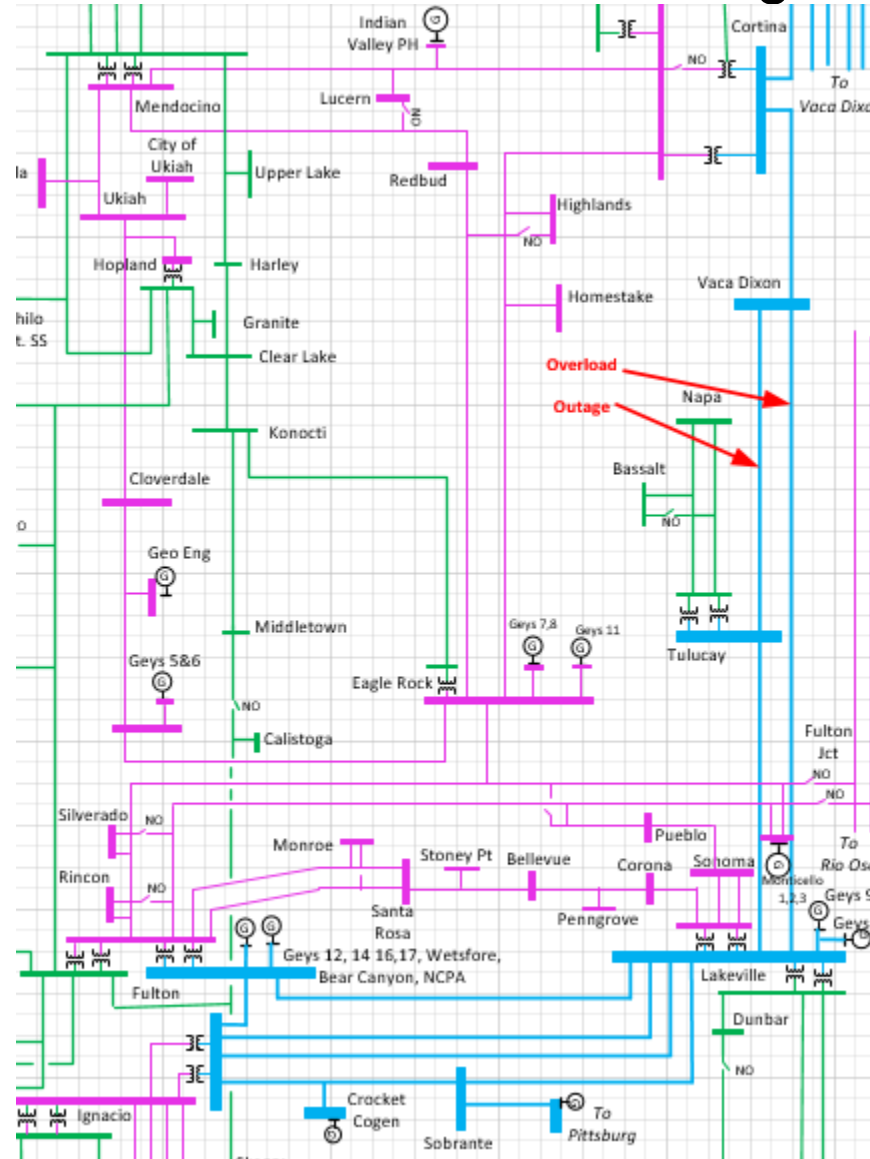
North Coast & North Bay Area Overall: Load and Resources

Load (MW)	2023	2027	Generation (MW)	2023	2027
Gross Load	1466	1499	Market	761	761
AAEE	-14	-21	Wind	0	0
Behind the meter DG	0	0	Muni	133	133
Net Load	1452	1478	QF	5	5
Transmission Losses	42	43	Future preferred resource and energy storage	0	0
			Existing 20-minute Demand Response	12	12
Pumps	0	0	Total Qualifying Capacity	911	911
Load + Losses + Pumps	1494	1521			

NCNB: Load Profiles



NCNB Area: One-line diagram



NCNB Area: Requirement

Year	#	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2023	First Limit	P3	Vaca Dixon-Lakeville 230 kV line	Vaca Dixon-Tulucay 230 kV line with Delta Energy Center power plant out of service	857
2027	First Limit	P3	Vaca Dixon-Lakeville 230 kV line	Vaca Dixon-Tulucay 230 kV line with Delta Energy Center power plant out of service	1025* (114)

- * = With the series reactor cut-in.
- With the series reactor cut-out: LCR = 1123 MW (212)

North Coast & North Bay Area Total Generation & LCR Need

Generation	Market (MW)	Wind (MW)	Muni (MW)	QF (MW)	DR (MW)	Total MW
2023	761	0	133	5	12	911
2027	761	0	133	5	12	911

Year	LCR Need	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Need
2023	P3	857		857
2027	P3	911	114	1025

Changes Compared to Previous LCR Requirements

Subarea	2022		2026		2023		2027	
	Load	LCR	Load	LCR	Load	LCR	Load	LCR
Eagle Rock	264	213	236	248	260	246	268	258
Fulton	909	243	866	316	906	337	924	378
Overall	1509	868 (34)	1489	995 (138)	1494	857	1521	1025 (114)

The decrease in 2023 Overall LCR need is mostly due to load forecast decrease.

The increase in 2027 Overall LCR need is mostly due to load forecast increase.