



# 2022 & 2026 Draft LCR Study Results Sierra Area

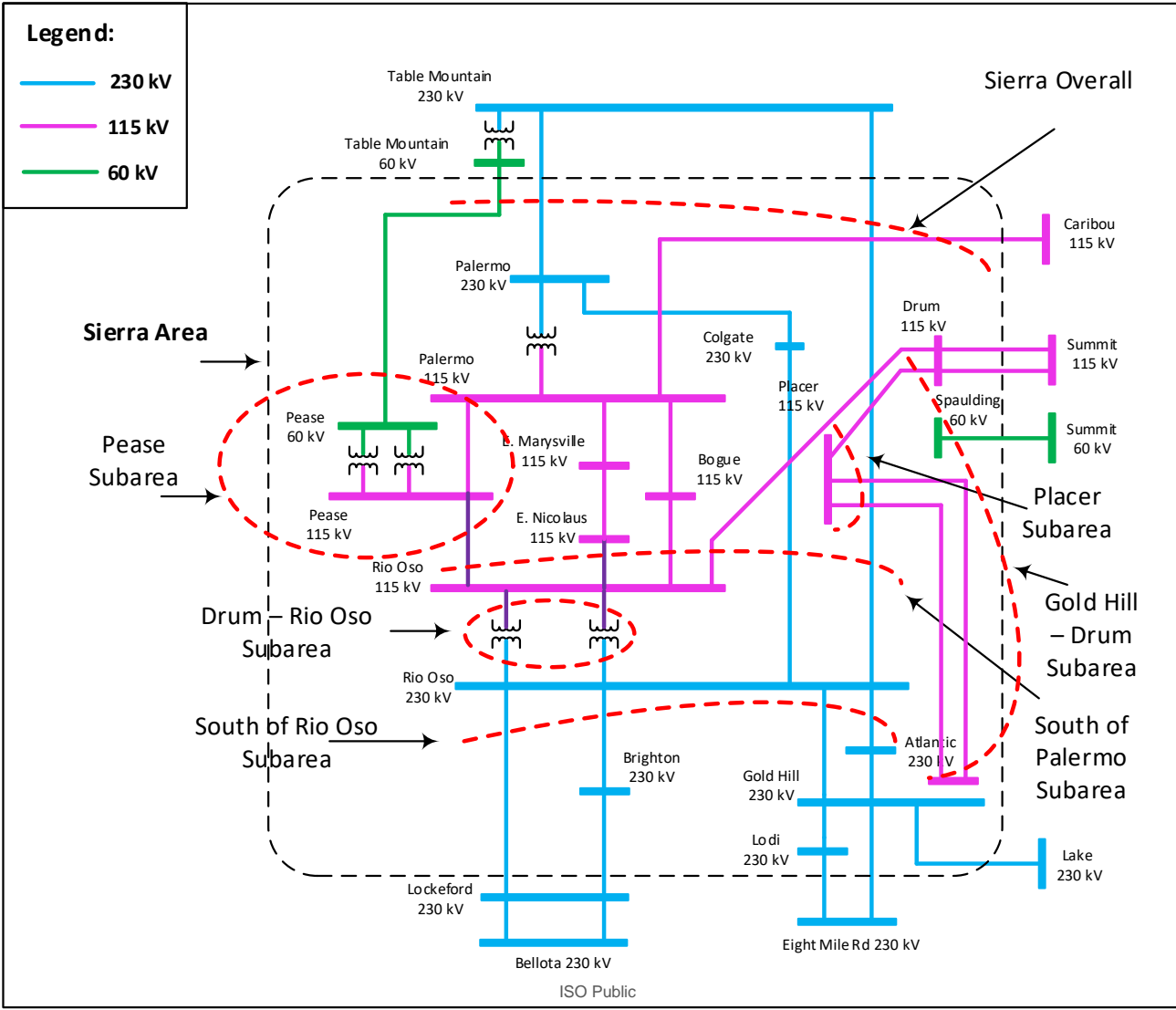
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Stakeholder Call

March 11, 2021

# Sierra Area Transmission System & LCR Sub-areas



# New major transmission projects

Project Name	Expected ISD
Year 2022	
South of Palermo 115 kV Reinforcement Project	2021
Year 2026	
Rio Oso 230/115 kV Transformer Upgrades	Oct-23
Rio Oso Area 230 kV Voltage Support	Jul-24

# Power plant changes

## Additions:

- Grizzly Unit #1 due to the POI change.

## Retirements:

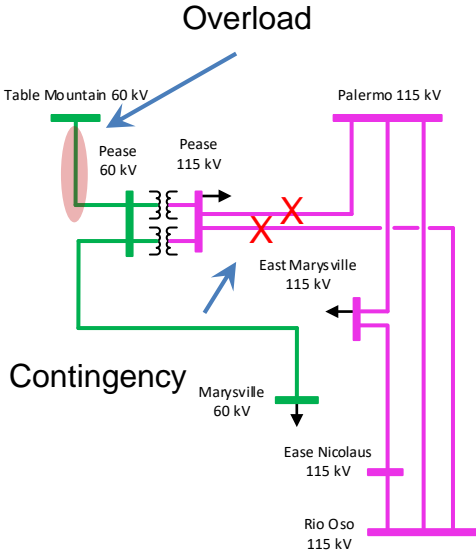
- No new retirements

## Sierra Area Overall: Load and Resources

Load (MW)	2022	2026	Generation (MW)	2022	2026
Gross Load	1,564	1,834	Market/ Net Seller/ Battery	739	739
AAEE	-13	-25	Solar	5	5
Behind the meter DG	0	11	Wind	0	0
<b>Net Load</b>	<b>1,551</b>	<b>1,798</b>	Muni	1,105	1,105
Transmission Losses	67	81	QF	51	51
Pumps	0	0	Future preferred resource and energy storage	0	0
<b>Load + Losses + Pumps</b>	<b>1,619</b>	<b>1,880</b>	<b>Total Qualifying Capacity</b>	<b>1,900</b>	<b>1,900</b>

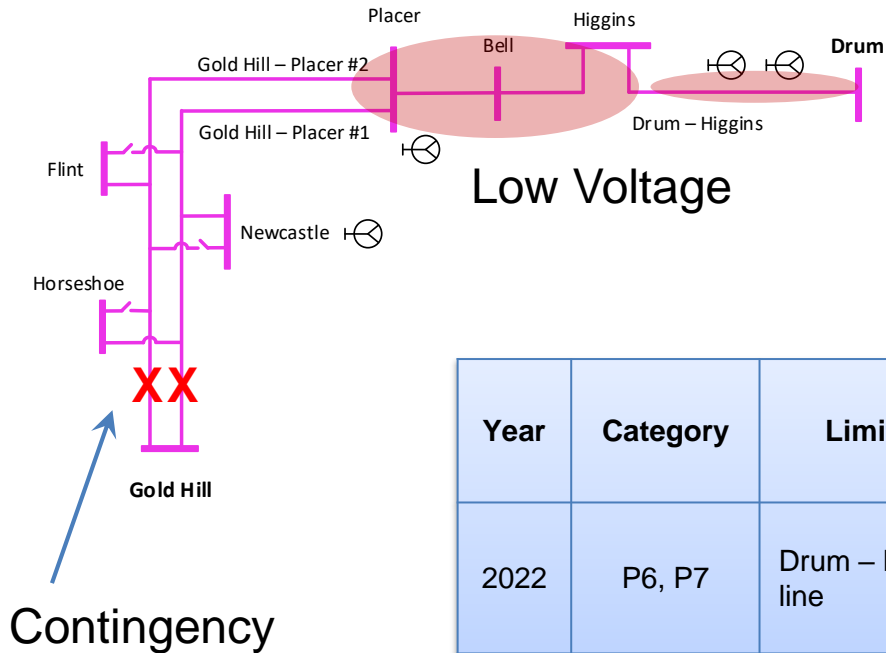
# Pease Sub-Area: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2022	P6, P7	Table Mountain – Pease 60 kV line	Palermo – Pease 115 kV and Pease – Rio Oso 115 kV	60
2026	P6, P7	Table Mountain – Pease 60 kV line	Palermo – Pease 115 kV and Pease – Rio Oso 115 kV	80



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# Placer Sub-Area: Requirements

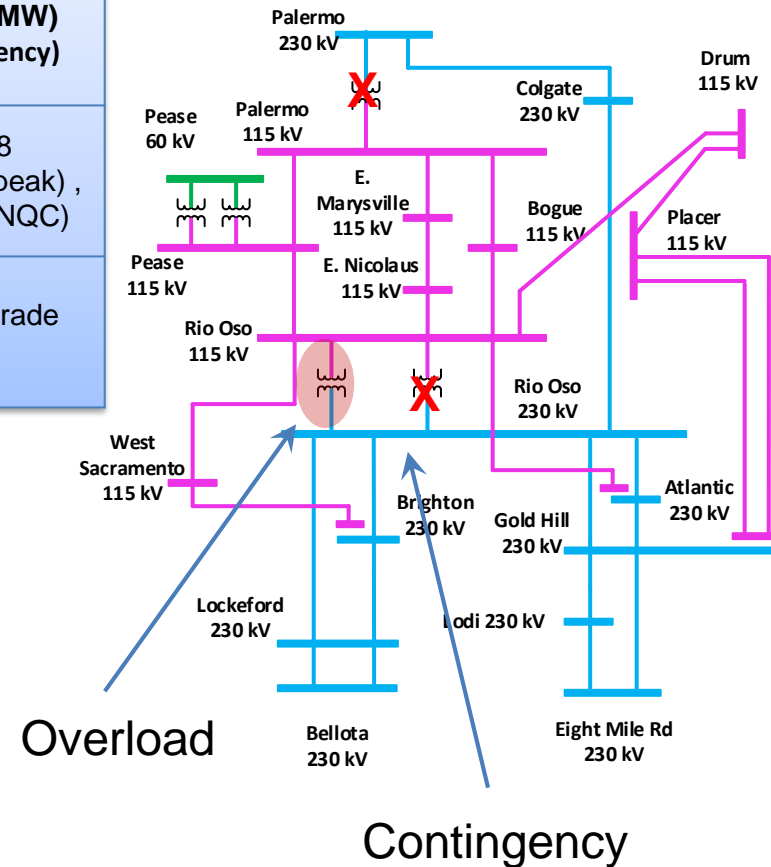


Year	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2022	P6, P7	Drum – Higgins 115 kV line	Gold Hill – Placer #1 and #2 115 kV lines	80 (15)
2026	P6, P7	Low voltage at Placer, Bell, and Higgins 115 kV buses	Gold Hill – Placer #1 and #2 115 kV lines	127 (62)

# Drum – Rio Oso Sub-Area: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2022	P6	Rio Oso 230/115 kV #1 Transformer	Rio Oso 230/115 kV #2 and Palermo 230/115 kV #2 Transformers	748 (192 at peak) , 187 at NQC)
2026	All	No requirement due to Rio Oso 230/115 kV Transformer Upgrade project		

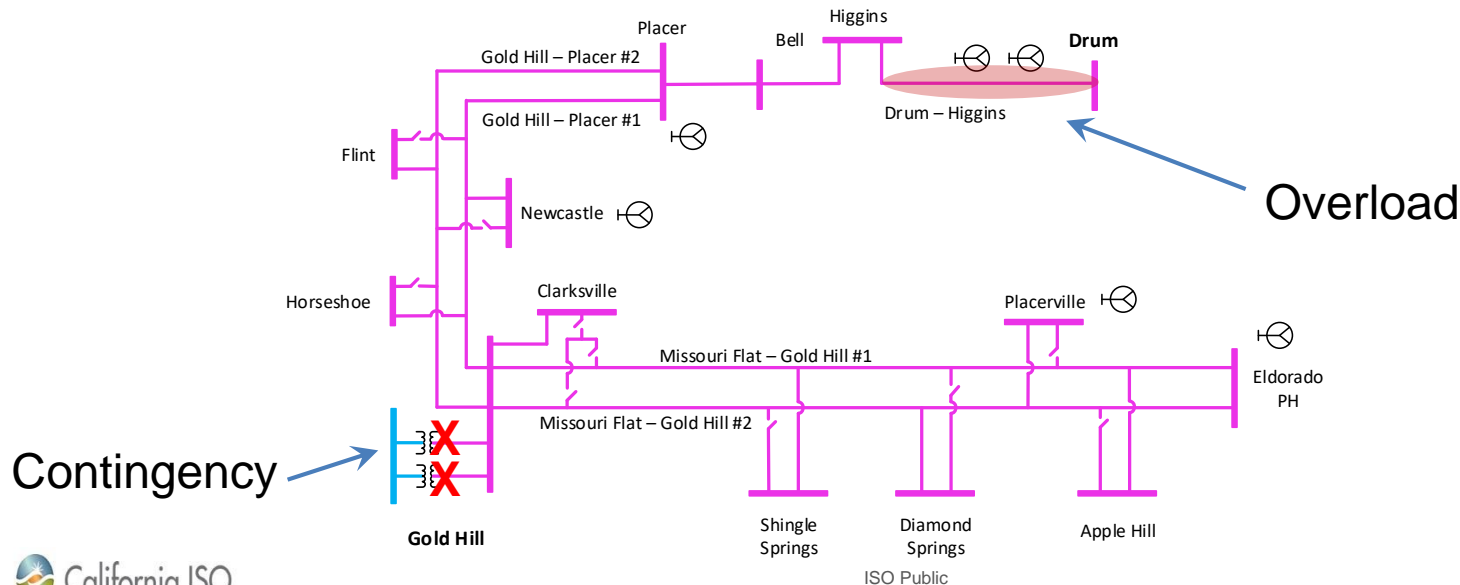
- The reason for significant increase in the LCR of this sub-area compared to last year is that the summer emergency rating of Bank #1 has reduced from 144 MVA to 92 MVA.
- While the deficiency values in the table are based on P6 contingencies, the sub-area is deficient even for P1 contingency of Palermo 230/115 kV TB #2





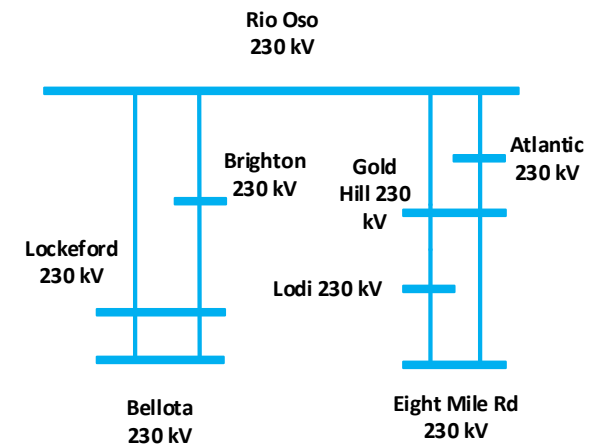
# Gold Hill - Drum Sub-Area: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2022	P6	Drum – Higgins 115 kV	Gold Hill 230/115 kV #1 and Gold Hill 230/115 kV #2 Transformers	366 (276)
2026	P6	Drum – Higgins 115 kV	Gold Hill 230/115 kV #1 and Gold Hill 230/115 kV #2 Transformers	450 (360)



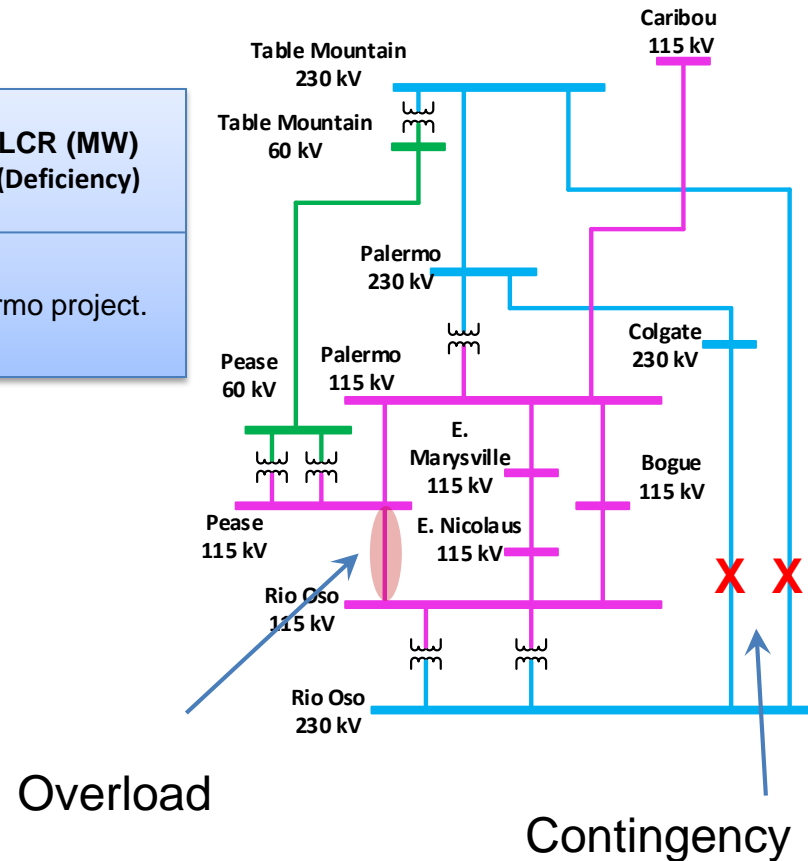
# South of Rio Oso Sub-Area: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2022	P6	Rio Oso – Atlantic 230 kV	Rio Oso – Gold Hill 230 kV Rio Oso – Brighton 230 kV	256
2026	P6	Rio Oso – Atlantic 230 kV	Rio Oso – Gold Hill 230 kV Rio Oso – Brighton 230 kV	308



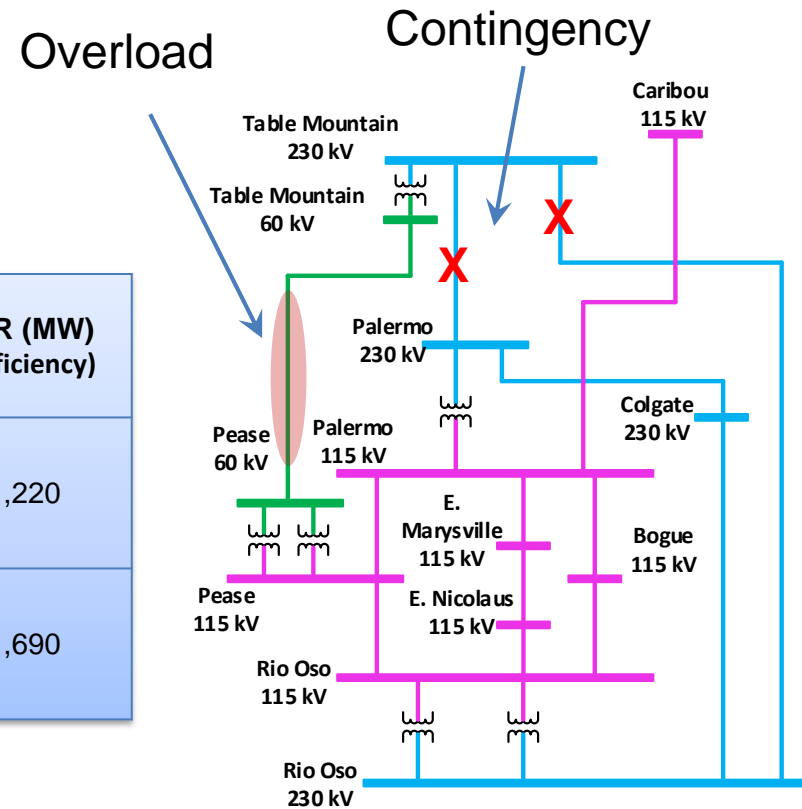
# South of Palermo Sub-Area: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2022	All	No requirements due to implementation of South of Palermo project.		
2026				



# South of Table Mountain Sub-Area: Requirements

Year	Category	Limiting Facility	Contingency	LCR (MW) (Deficiency)
2022	P6, P7	Table Mountain – Pease 60 kV	DCTL of Table Mtn. – Palermo and Table Mtn. Rio Oso 230 kV lines	1,220
2026	P6, P7	Table Mountain – Pease 60 kV	DCTL of Table Mtn. – Palermo and Table Mtn. Rio Oso 230 kV lines	1,690



## Changes from 2021 to 2022

Sub-area	2021		2022	
	Load	LCR	Load	LCR
Pease	155	83	134	60
Placer	178	93	159	80
Drum - Rio Oso	N/A	700	N/A	748
Gold Hill - Drum	508	416	444	366
South of Rio Oso	N/A	665	N/A	256
South of Palermo	N/A	1,587	N/A	0
South of Table Mountain	N/A	1,821	N/A	1,220
Total	1,865	2,110	1,619	1,552

- The overall LCR requirement decreased in 2022 as compared to 2021 due to the drop in the load forecast and the implementation of the South of Palermo project.
- The LCR in Drum-Rio Oso sub-area increased due to reduction in the Rio Oso Bank #1 Transformer Rating

*N/A=Flow-through area. No defined load pocket.*

## Changes from 2025 to 2026

Sub-area	2025		2026	
	Load	LCR	Load	LCR
Pease	161	0	154	80
Placer	179	93	194	127
Gold Hill - Drum	512	0	526	450
South of Rio Oso	N/A	223	N/A	308
South of Table Mountain	N/A	1,367	N/A	1,690
Total	1,918	1,412	1,880	2,050

- Although the overall load forecast for year 2026 dropped as compared to year 2025, the load forecast in the Placer and Gold Hill – Drum sub-areas increased.
- Overall LCR requirement is higher due to delay in East Marysville 115/60 kV and the Gold Hill 230/115 Transformer projects.

*N/A=Flow-through area. No defined load pocket.*

## Sierra Area Total LCR Need

Study Year	Existing Generation Capacity Needed (MW)	Deficiency (MW)	Total MW Need
2022	1,220	332	1,552
2026	1,690	360	2,050