



2019 & 2023 Draft LCR Study Results San Diego-Imperial Valley non-bulk sub-areas

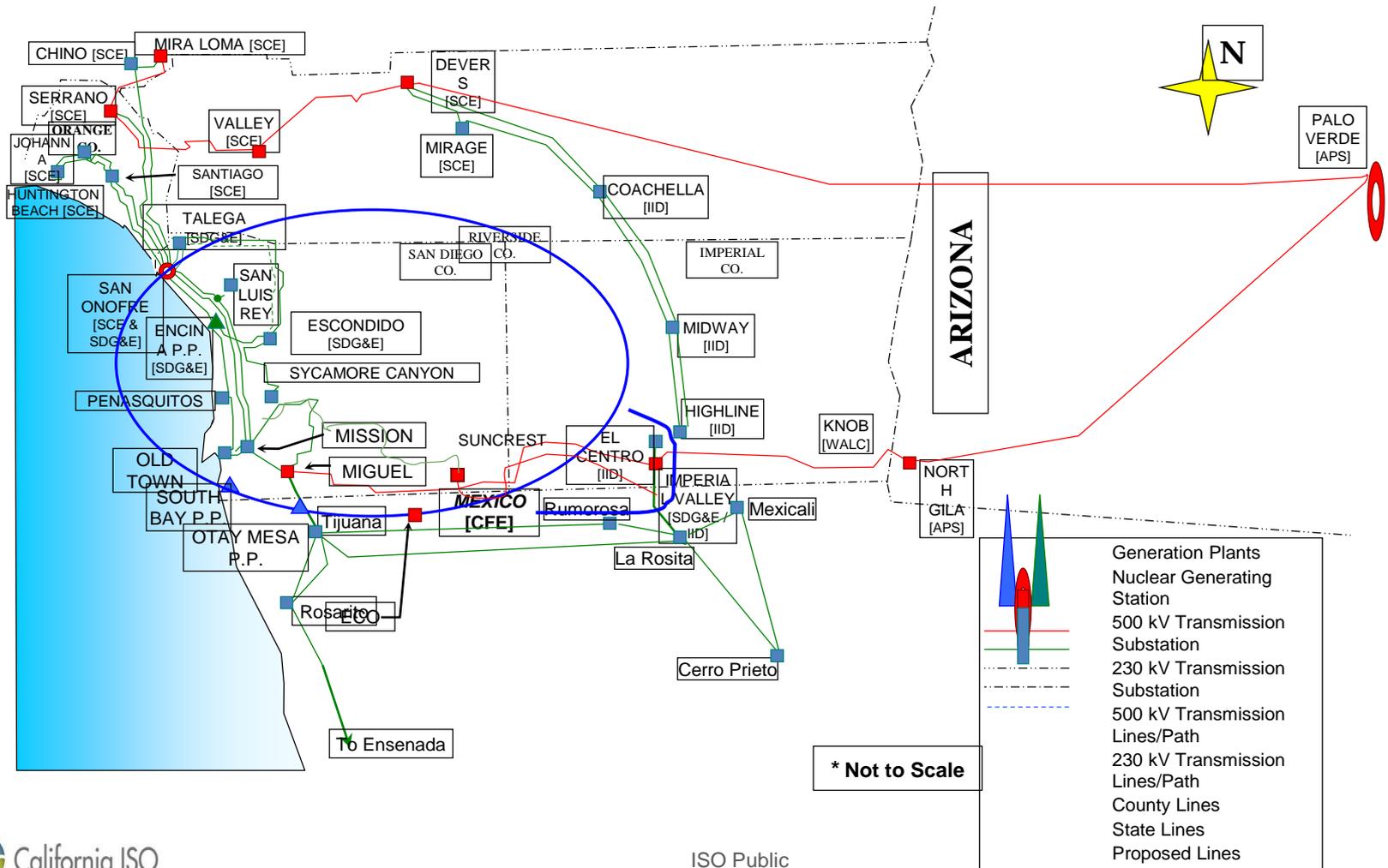
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Stakeholder Meeting

April 9, 2018

San Diego-Imperial Valley LCR Area



Major Network Upgrades Modeled by 2019

1. Ocean Ranch 69 kV substation
3. Mesa Height TL600 Loop-in
4. Re-conductor of Mission-Mesa Heights 69 kV
4. Re-conductor of Kearny-Mission 69 kV line
5. TL6906 Mesa Rim rearrangement
6. Upgrade Bernardo - Rancho Carmel 69kV line
7. Re-conductor of Japanes Mesa–Basilone–Talega Tap 69 kV lines
8. 2nd Miguel–Bay Boulevard 230 kV line
9. Sycamore–Penasquitos 230kV line
10. 2nd Mission 230/69 kV bank
11. Suncrest SVC project
12. By-passing 500 kV series capacitor banks on SWPL and SPL
13. Encina generation retirement
14. Carlsbad Energy Center (5x100 MW)
15. Storage projects at Melrose (20 MW)
16. Battery energy storage projects (77 MW)

Additional Network Upgrades by 2023

1. TL632 Granite loop-in and TL6914 reconfiguration
2. 2nd San Marcos–Escondido 69kV line
3. Reconductor of Stuart Tap–Las Pulgas 69 kV line (TL690E)
4. 2nd Poway–Pomerado 69 kV line
5. Artesian 230 kV expansion with 69kV upgrade
6. South Orange County Reliability Enhancement
7. Imperial Valley bank #80 replacement

Sub-areas studied:

- El Cajon sub-area
- Esco sub-area
- Pala sub-area
- Border sub-area
- Mission sub-area
- Miramar sub-area

El Cajon Sub-area Critical Contingencies

Category C:

2019: Contingency: loss of Miguel–Granite–Los Coches three-terminal 69 kV line(TL632) followed by the loss of El Cajon Unit 2.

Limiting component: El Cajon-Los Coches 69 kV (TL631) overloaded.

LCR need: 88 MW

2023: Contingency: loss of Granite – Los Coches 69 kV lines #1 and #2.

Limiting component: El Cajon-Los Coches 69 kV (TL631) overloaded.

LCR need: 35 MW

Category B:

2019: Contingency: loss of El Cajon Unit 2 followed by the loss of Miguel–Granite–Los Coches 69 kV (TL632)

Limiting component: El Cajon -Los Coches 69 kV (TL631) overloaded

LCR need: 88 MW

2023: LCR need: 0 MW

Esco Sub-area Critical Contingency

Category C:

2019:

No LCR need in 2019 due to the addition of the Sycamore-Penasquitos 230 kV line, along with load reduction of energy efficient (AAEE) and distributed self-generation (BTM PV).

2023:

Contingency: loss of either one of the two Sycamore-Pomerado 69 kV (TL6915 or TL6924) lines followed by the loss of Artesian 230/69kV bank or vice versa.

Limiting component: remaining Sycamore-Pomerado 69 kV line overloaded.

LCR need: 20 MW

Category B:

No LCR need in 2019 and 2023.

Pala Sub-area Critical Contingency

Category C:

Contingency: loss of Pendleton-San Luis Rey 69 kV line (TL6912) followed by loss of Lilac-Pala 69kV (TL6908).

Limiting component: Melrose-Morro Hill Tap 69kV (TL694) overloaded.

2019 LCR need: 10 MW

2023 LCR need: 10 MW

Category B:

No LCR need in 2019 and 2023.

Border Sub-area Critical Contingency

Category C:

Contingency: loss of Bay Boulevard-Otay 69 kV #1 (TL645) followed by loss of Bay Boulevard-Otay 69 kV #2 (TL646)

Limiting component: Imperial Beach-Bay Boulevard 69 kV (TL647) overloaded

2019 LCR need: 100 MW

2023 LCR need: 108 MW

Category B:

No LCR need in 2019 and 2023.

Mission Sub-area Critical Contingency

The LCR need for the Mission sub-area is eliminated with the completions of the T600 Loop-in to Mesa Heights 69 kV and TL676 Mission – Mesa Heights 69 kV re-conductor projects.

Category C:

No LCR need in 2019 and 2023.

Category B:

No LCR need in 2019 and 2023.

Miramar Sub-area Critical Contingency

The LCR need for the Miramar sub-area is eliminated with the addition of the Sycamore-Penasquitos 230 kV project.

Category C:

No LCR need in 2019 and 2023

Category B:

No LCR need in 2019 and 2023

THANK YOU

Your comments and questions are welcome.

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