



California ISO

2023-2024 Transmission Planning Process: Transmission Plan - Extension

June 17, 2024 Stakeholder Meeting

Reminders

- Stakeholder calls and meetings related to Transmission Planning are not recorded.
 - Given the expectation that documentation from these calls will be referred to in subsequent regulatory proceedings, we address written questions through written comments, and enable more informal dialogue at the call itself.
 - Minutes are not generated from these calls, however, written responses are provided to all submitted comments.
- Calls are structured to stimulate an honest dialogue and engage different perspectives.
- Please keep comments professional and respectful.

Instructions for raising your hand to ask a question

- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon located on the bottom of your screen.

Note: *3 only works if you dialed into the meeting.

- Please remember to state your name and affiliation before making your comment

2023-2024 Transmission Planning Process Stakeholder Call – Agenda

Topic	Presenters
Agenda	Yelena Kopylov-Alford
Introduction	Jeff Billinton
Projects Identified for Further Review <ul style="list-style-type: none">- Oakland Area Transmission Reinforcement- Short Circuit Mitigation for Miguel 230 kV Circuit Breakers- Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers	Uriel Rangel Diaz Rene Romo de Santos Rene Romo de Santos
Next Steps	Yelena Kopylov-Alford



Oakland Area Transmission Reinforcement – Status Update

Uriel Rangel Diaz

Regional Transmission - North

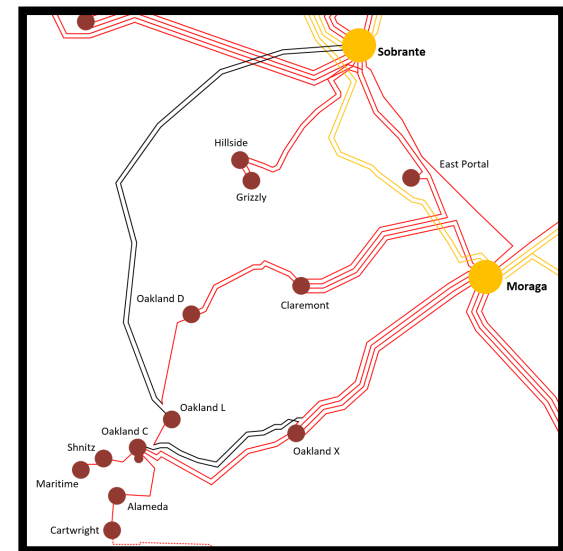
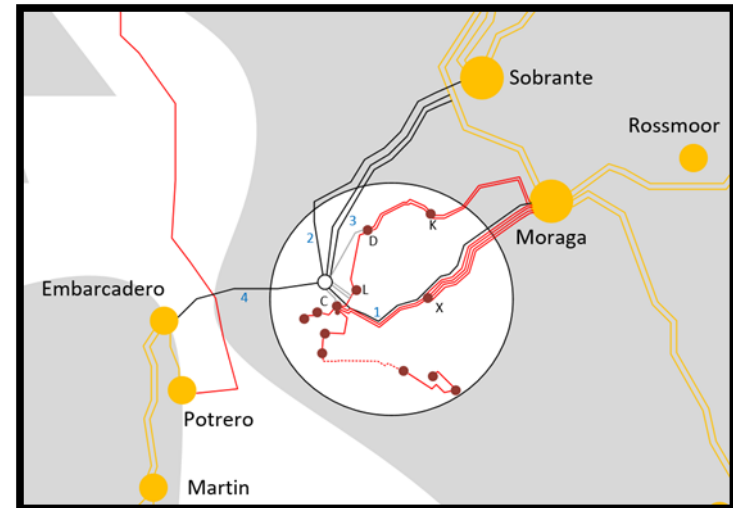
*2023-2024 Transmission Planning Process Stakeholder Meeting
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Background

- Reliability Assessment
 - 2023-2024 TPP modeled 162 MW or 59% higher load forecast in the Oakland pocket compared to the previous cycle load forecast
 - As a result, a number of overload issues were observed on most of the 115 kV lines serving this pocket
- Reinforcement Need:
 - Additional transmission upgrades in the area to supply the anticipated increased load in Oakland without relying on the local thermal generation.
 - The Oakland area, being a dense urban area, has considerable construction challenges, such as:
 - new transmission line routing to get to the metropolitan area;
 - limited open spaces to build new substations;
 - limited space in all of the 115 kV Oakland pocket substations and
 - reduced scalability in the existing underground cables, among others.
 - The ISO recommends that the previously approved OCEI project move forward as designed, which could help reduce reliance on the local thermal units while the additional transmission upgrades are being developed and implemented

Alternatives Currently Being Assessed

- **New 230 kV source to the pocket**
 - Multiple 230 kV sources are being considered to connect a proposed new 230/115 kV substation: Sobrante, Moraga, Crockett, Collinsville, Moraga – Parkway line, and Embarcadero; and
 - Reconfiguring the existing 115 kV grid to connect the new substation consist of looping existing 115 kV lines.
- **115 kV Alternatives**
 - Two new 115 kV transmission lines to the area from Sobrante and connecting to the existing D and L substations along with topology changes in the area to get higher load-serving capability and to avoid the need for converting to GIS the substations with no space for new 115 kV connections; or
 - Reconductor most of the existing 115 kV lines and upgrading the 115 kV grid to meet the load growth expectations.



Assessment remaining to be undertaken

- Feasibility and cost estimation for most of the alternatives, and the preliminary load flow evaluations nearing completion
- Assessment still to be undertaken:
 - Determining the achievable capacity potential for new 115 kV lines and underground cables;
 - Cost estimates and feasibility of a new double circuit 115 kV line from Sobrante to connect the Oakland area substations; and
 - Alternative comparison and a comprehensive power flow assessment of the alternative to be recommended
- With the analysis remaining to be undertaken to determine the recommended mitigation for the Oakland area, the ISO will continue the assessment of the Oakland area reinforcement in the 2024-2025 transmission planning process



Reliability Assessment Recommendations – SDG&E Area Addendum to 2023-2024 Transmission Plan

*Rene Romo de Santos
Regional Transmission - South*

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New Reliability Projects Recommended for Approval in 2023-2024 TPP – SDG&E Area

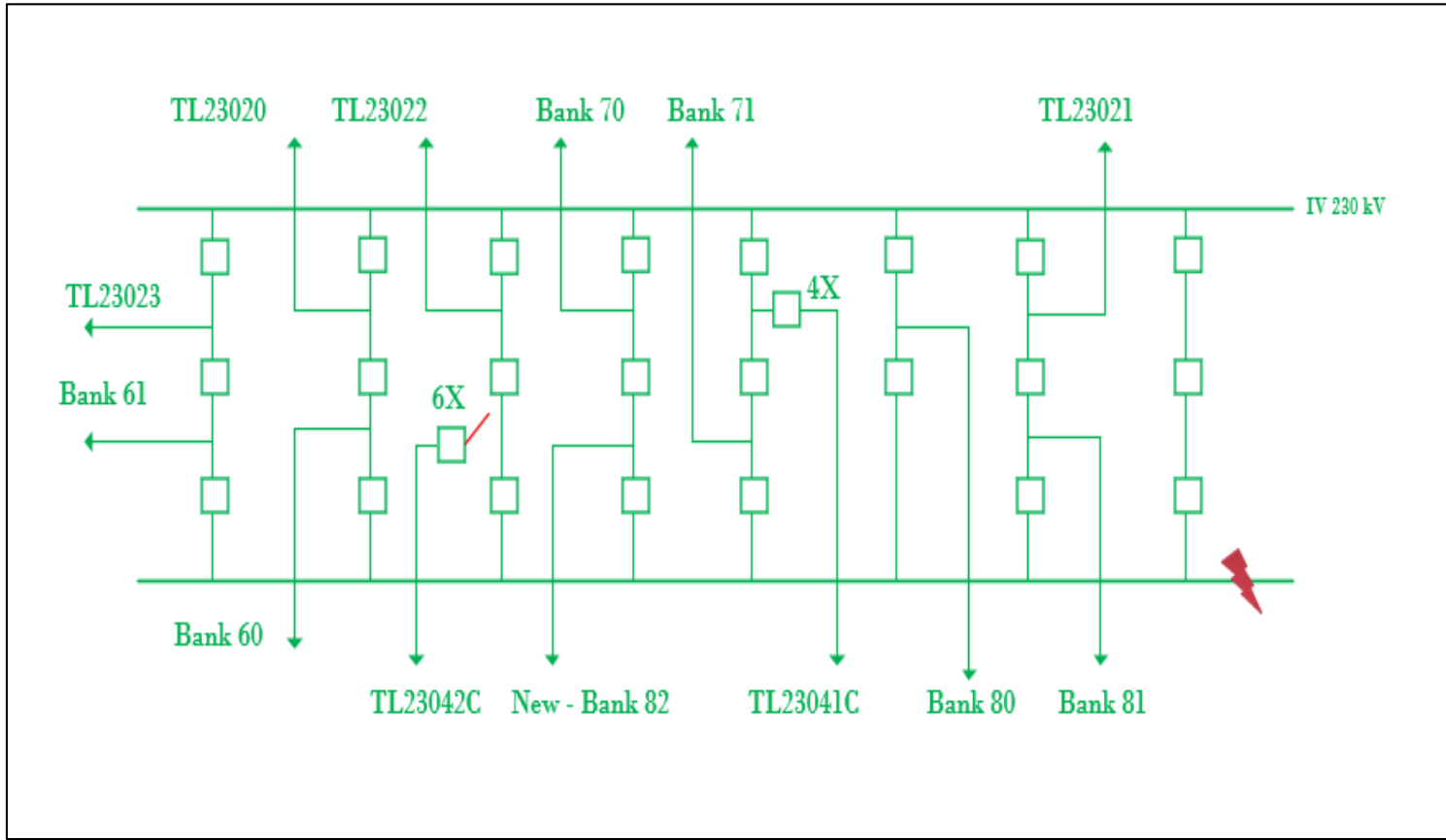
Projects	Planning Area	Status
Short Circuit Mitigation for Miguel 230 kV Circuit Breakers	SDG&E	Recommended for Approval
Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers	SDG&E	Recommended for Approval

Short Circuit Mitigation for Miguel 230 kV Circuit Breakers

- Reliability Assessment Need
 - This project was proposed by SDG&E as a reliability transmission solution to address the Short Circuit Duty (SCD) concerns since all of the 63 kA circuit breakers (CBs) at Miguel 230 kV substation will overstress considering the previously approved projects and the CPUC's base portfolio.
- Project Submitter
 - SDG&E
- Project Scope
 - Open Miguel 230 kV CB 6X
 - Operate TL23042C Miguel – Miguel 6X Tap normally open
 - Modify TL 23041 / TL 23042 RAS to consider Miguel CB 6X status and upgrade RAS panel
 - Install a 3-Ohm series reactor on TL23026 Silvergate – Bay Boulevard 230 kV line which will be located at Bay Boulevard substation
- Estimated Project Cost
 - \$51M
- Estimated In-service Date
 - June 2035
- Alternatives Considered
 - Open Miguel 230 kV CB 4X, operate TL23041C Miguel – Miguel 4X Tap normally open, modify TL 23041 / TL 23042 RAS to consider Miguel CB 4X status and upgrade RAS panel, and reconductor TL6916 Sycamore Canyon – Scripps to achieve a 200 MVA normal/emergency rating. Cost ~\$84M.
 - Install two sets of 10-Ohm current limiting reactors (CLRs) in series with Miguel 230 kV buses. Cost ~\$192M.
- Recommendation
 - Approval

Short Circuit Mitigation for Miguel 230 kV Circuit Breakers

Proposed Configuration



Short Circuit Duty	Current Configuration	With Project
Miguel 230 kV	102.1 %	88.6 %

Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers

- Reliability Assessment Need
 - This project was proposed by SDG&E as a reliability transmission solution to address the SCD concerns since all of the 63 kA CBs at Imperial Valley 230 kV substation will overstress considering the previously approved projects and the CPUC's base portfolio.
- Project Submitter
 - SDG&E
- Project Scope
 - Install two sets of 10-Ohm CLR in series with the 230 kV buses, one on each bus
 - One CLR will be operated normally open
 - Rearrange 230 kV transmission lines and move TL23043 Imperial Valley – Westside Canal, TL23066 Imperial Valley – Drew, and IID owned S-Line Imperial Valley – Wixom SS to the west buses
 - Preserve the 63 kA Circuit Breakers
- Estimated Project Cost
 - \$97M
- Estimated In-service Date
 - June 2035

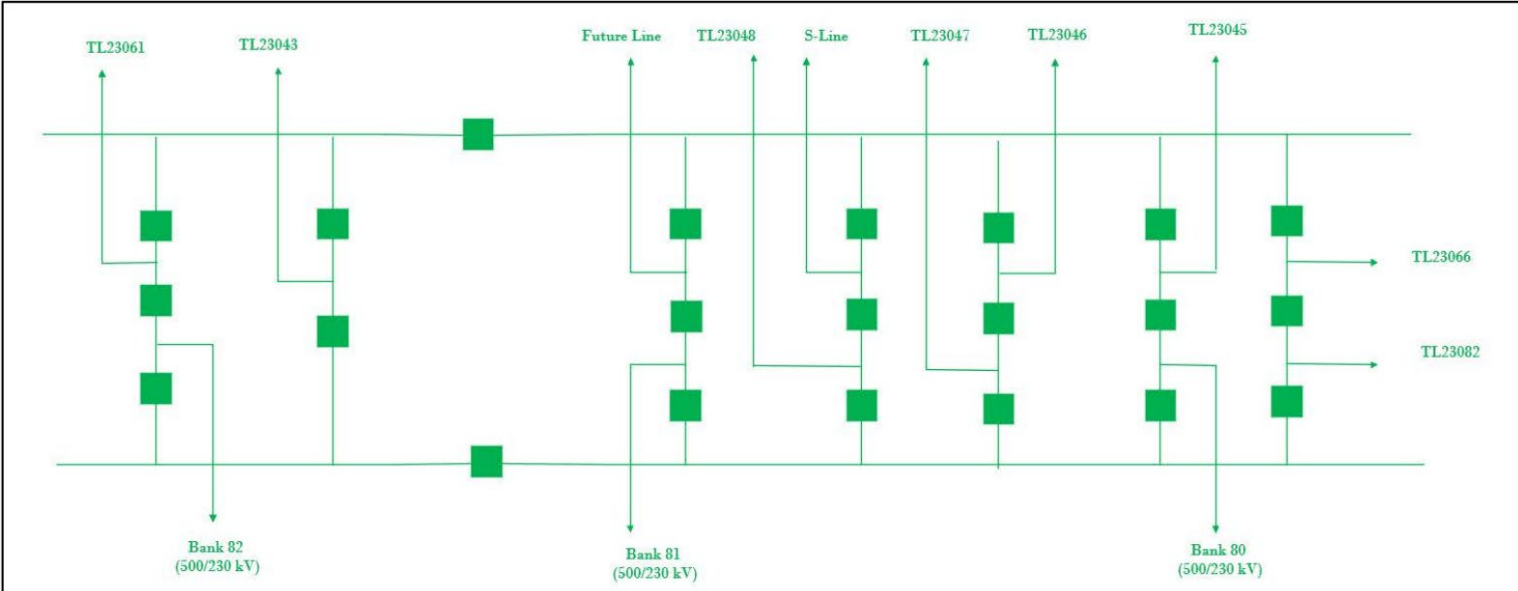
Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers

- Alternatives Considered
 - Replace 63kA with 80 kA circuit breakers: This alternative is not feasible from constructability perspective
 - Split IV 230 kV buses, add a fourth 500/230 kV transformer and relocate 230 kV transmission lines: This alternative is feasible but not recommended due to concerns on generation curtailment and the need of complex operational procedures to mitigate P6 reliability concerns
 - Different rearrangement of 230 kV transmission lines: This alternative includes the two CLRs proposed in the selected project but instead of relocating TL23066 Imperial Valley – Drew; TL23045 and TL23046 Imperial Valley – Central La Rosita II lines 1 and 2 are rearranged to the west buses. Cost ~\$112M.
- Recommendation
 - Approval

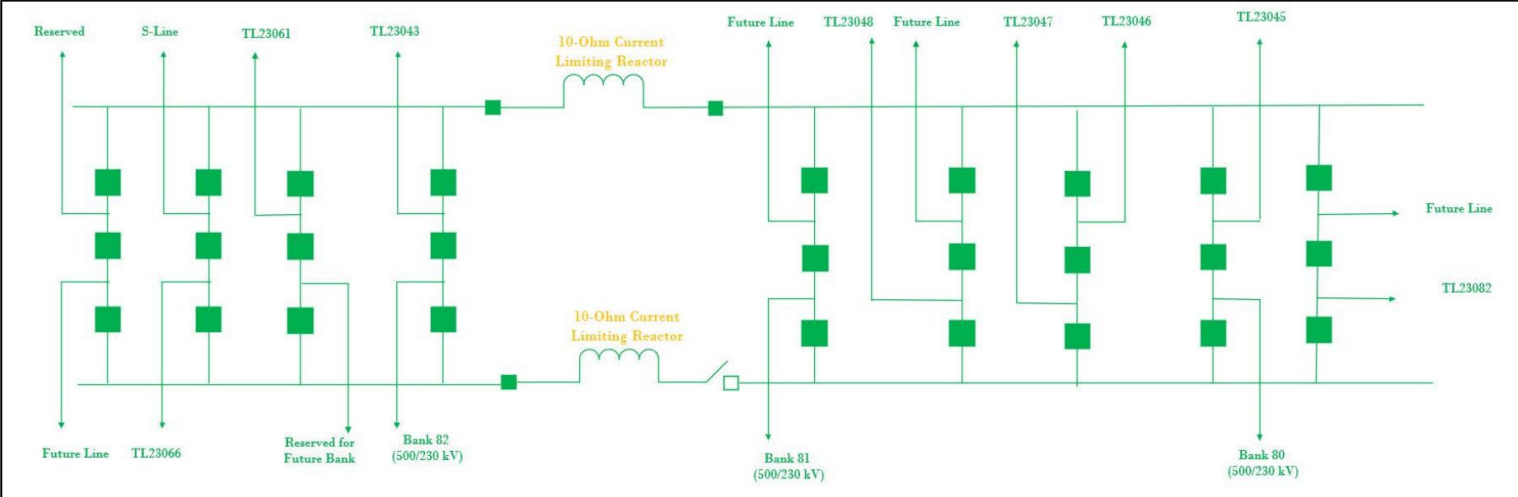
Short Circuit Duty	Current Configuration	Short Circuit Duty	With Project
Imperial Valley 230 kV	103.5 %	Imperial Valley East 230 kV	74.0 %
		Imperial Valley West 230 kV	80.0 %

Short Circuit Mitigation for Imperial Valley 230 kV Circuit Breakers

Current Configuration



Proposed Configuration



Next Steps

- The ISO will recommend the two projects for approval at the ISO Board of Governor's meeting in July in an addendum to the 2023-2024 Transmission Plan
- Comments
 - Due by end of day July 1, 2024
 - Submit comments through the ISO's commenting tool, using the template provided on the process webpage:

<https://stakeholdercenter.caiso.com/RecurringStakeholderProcesses/2023-2024-Transmission-planning-process>



SAVE THE DATE |

2024 STAKEHOLDER SYMPOSIUM

OCT. 30, 2024
SACRAMENTO, CA

The California ISO Stakeholder Symposium will be held on Oct. 30, 2024 at the Safe Credit Union Convention Center in Sacramento, California.

A welcome reception for all attendees will be held the evening of Oct. 29.

Additional information, including event registration and sponsorship opportunities, will be provided in a future notice and on the ISO's website.

Please contact Symposium Registration at symposiumreg@caiso.com with any questions.