

# ***Increase Ratings for Pardee-Sylmar No.1 and No.2 230 kV Lines***

2019-2020 CAISO TPP Stakeholder Meeting  
September 25-26, 2019  
Folsom, CA

# Executive Summary

## High Level Description of Proposal, Request, or Update - [Approval]

Obtain approval to increase the emergency rating on both Pardee-Sylmar No.1 and No.2 230 kV lines. The existing normal and emergency ratings are both rated at 3000 Amps and are limited by substation terminal equipment at Pardee (SCE) and Sylmar (LADWP) Substations. The proposal is to increase the rating of terminal equipment at Pardee and Sylmar to mitigate the highest thermal overload of ~ 4,410 Amps. The current project need date is 2025.

## Need Justification or Driver of Proposal/Request?

CAISO's 2019 TPP Studies showed thermal violations in 2029 (Summer Peak) for the following:

- Pardee-Sylmar No.1 or No.2 230 kV line for the P1 (N-1) loss of either Pardee-Sylmar 230 kV line (129% ~ 3,870 Amps).
- Both Pardee-Sylmar No.1 and No.2 230 kV lines for the N-1 (P1) loss of Lugo-Victorville 500 kV line (100% ~ 3000 Amps).
- Additional P3 contingencies (Loss of Pastoria generation and either Pardee-Sylmar 230 kV line) resulted in overloads up to 142% ~ 4,260 Amps

The thermal violation is driven by future peak shift conditions (7pm peak with no solar) and gas/nuclear generation retirement.

## Project/Program Impacts

| New Project |          |              |            | Project Change |          |        |
|-------------|----------|--------------|------------|----------------|----------|--------|
| Scope       | Design   | Construction | Operations | Scope          | Schedule | Budget |
| <b>x</b>    | <b>x</b> | <b>x</b>     | <b>x</b>   |                |          |        |

Scope: Replace existing terminal equipment (CBs, disconnects, etc.) at Pardee (SCE) and Sylmar (LADWP) Substations.

Design: Engineering and design for Protection, Substation, and Telecommunications facilities, etc.

Construction: Installation of facilities at SCE and LADWP Transmission Substations

Operations: Updating operating procedures and supporting documentation (System Operating Bulletin)

# Overview –

## Value of Proposed Project

To be able to withstand future peak shift conditions (1900 hours) without solar generation and nuclear/gas generation retirements. This project will meet NERC TPL Planning Standards, WECC Criteria, and support CPUC's Renewables Portfolio Standard (RPS) program.

## Milestone Timeline

| Milestone  | Target Date           |
|--|-----------------------|
| <b>Sub-TRC / TRC Approval (SCE internal process)</b> | <b>August 2019</b>    |
| Submit Project to CAISO Request Window               | September 15, 2019    |
| CAISO Stakeholders Meeting                           | September 25-26, 2019 |
| CAISO posts Final Board-approved Transmission Plan   | End of March 2020     |

## Cost Implications

Pardee Substation (SCE): \$2.76M  
Sylmar Substation (LADWP): \$12.6M

Total: \$15.36 M

*Note: Initial SCE estimate based on SCE 2019 Unit Cost Guide.  
LAWDP estimate based on actual costs from similar project.*

## Project Alternatives

A new Pardee-Sylmar 230 kV Line:

- Cost-ineffective: Requires Licensing and more expensive
- Additional scope: Includes equipping a position at Pardee and Sylmar Substations
- Coordination and Approval from LADWP

*Bold indicates completed milestones*

# Pardee-Sylmar 230 kV Lines

