



June 18, 2025

Tharon Wright
Public Utilities Regulatory Analyst III
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102
VIA EMAIL

RE: CPUC Data Request #10 for PG&E's Moraga to Oakland X 115 Kilovolt Rebuild Project (A.24-11-005)

Dear Ms. Wright,

This letter is in reply to your June 5, 2025, letter in which you request certain additional information regarding Pacific Gas and Electric Company's (PG&E's) application (A.24-11-005) for a Permit to Construct (PTC) and Proponent's Environmental Assessment (PEA) for the Moraga-Oakland X 115 kilovolt (kV) Rebuild Project (project). The original text for each data request item from the California Public Utilities Commission (CPUC) is included, followed by PG&E's response.

PEA Chapter 3, Project Description

PD-16 The relationship of the proposed MOX Project to the PG&E's 2019 proposal to rebuild the four Moraga–Oakland X 115 kV lines with three lines remains unclear. The PEA is clear that the rebuild described in the CAISO 2019-2020 Transmission Plan was modified to arrive at the proposed MOX Project. Accordingly, the PEA (p.2-4) indicated that: "PG&E plans to submit the revised project scope..." to rebuild the Moraga–Oakland X 115 kV four-line path with four lines to the CAISO. This submittal did not occur as part of the CAISO 2024-2025 Transmission Planning Process. Because the proposed MOX Project represents a change from the design in the CAISO 2019-2020 Transmission Plan, please describe whether PG&E still plans to request CAISO consideration of the proposed MOX Project, and when will PG&E request that consideration.

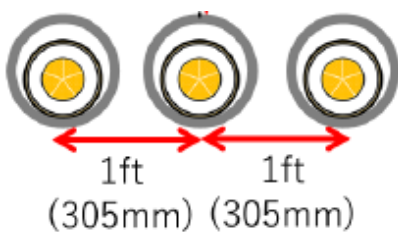
PG&E's Response

The Moraga-Oakland X 115 kV Rebuild Project is a maintenance project that is primarily driven by aging infrastructure that has reached its useful lifespan. As a maintenance project, CAISO would only need to concur with the revised project scope. For this project, PG&E plans to submit the project to CAISO after receiving a project approval as part of a Permit to Construct from the CPUC.

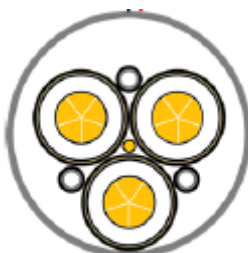
PD-17 In rationalizing the change from the design in the 2019-202 Transmission Plan, the PEA (p.2-4) says: "Since 2020, modern cable type technology allows rebuilding four lines instead of three lines within limited ROW and city franchise streets..." Please elaborate on how the proposed "modern" cable can be placed closer together, and how the proposed 115 kV cable of a copper cross-linked polyethylene (XLPE) triplex type can be placed closer together than the previously considered option.

PG&E's Response

The original cable type, a traditional XLPE (refer to Single Core image), arranges the three cables, one for each phase of the circuit, in separate conduits in a flat, vertical, or triangular configuration. None of these configurations align the three phases symmetrically. The proposed cable technology type, a triplex XLPE, installs the three cables symmetrically in a helical (spiral curve, or twisted triangular) configuration in a single conduit (refer to Triplex images).



Single Core



Triplex



Triplex Side View

Triplex cables are bundled together symmetrically in the conduit throughout the circuit. The difference in cable symmetry results in different induction. With the single core cable, the phases are not symmetrically aligned and the circuit produces an electromagnetic force greater than the symmetrical triplex cable. An electromagnetic force induces a voltage on nearby conductive objects (such as a nearby deenergized line). Although safety measure such as grounding are installed, a nearby deenergized line could become charged from the induced voltage of the energized line and would be a potential shock hazard to maintenance workers. To avoid an electrical shock hazard in addition to other safety measures, single core cables are installed at least 15 feet apart or both lines are deenergized before work begins. With the triplex phase/cable symmetry, each phase/cable cancels out or minimizes the electromagnetic force emitted by the other phases/cables. This phenomenon can be visualized by applying right-hand rule in electromagnetism. The minimized electromagnetic force allows two triplex cables to be placed closer together without the potential maintenance worker shock hazard of single core cables, or needing to deenergize both cables. Two triplex cables can be installed safely at less than 15 feet apart, which includes being installed in one double-circuit duct bank as the project proposes. The 15-foot circuit separation between adjacent double-circuit duct banks discussed in the PEA maintains ampacity by avoiding mutual heating the adjacent triplex cable double-circuit duct banks (PEA at page 4-15).

PD-18 Please clarify the expected capacities of system changes related to the proposed MOX Project. The PEA Section 3.2.2.1 stated: “the proposed project’s four-path rebuild does not include line rerating and there are no reasonably foreseeable plans to increase existing capacity.” However, the claim of no plan to increase capacity is contradicted by PG&E’s January 31, 2025, response to our Data Request #1. In response to Item PD-2, PG&E indicated that “... the project will increase transmission capacity in the North Oakland area, where significant load growth is expected.” More recently, the CAISO Board approved the North Oakland Reinforcement Project on May 30, 2025. Given the upgrades proposed with the MOX Project and those receiving CAISO Board approval in 2025, please update PG&E’s statement on reasonably foreseeable plans to increase existing capacity.

PG&E’s Response

The proposed conductor type is a larger size than the existing conductor to accommodate reasonably foreseeable regional load growth. The term “line rerating” is not applicable to the proposed project. Line rerating refers to studying a line to determine if its existing capacity can be expanded to handle more load. The capacity of the existing lines and proposed lines is known and does not require such a study. There are no “reasonably foreseeable plans to increase existing capacity” beyond the capacity provided for in the proposed project, which, as described in the PEA, includes an increase in capacity because of the larger conductor size.

Currently, PG&E’s transmission system studies in the North Oakland area indicate a need to use the capacity provided for in the proposed project within the next 15 years.

The project will accommodate the reasonably foreseeable future energy demands of the region by installing a larger size conductor that can carry more power. This objective will be achieved by replacing current conductors, which have a summer emergency rating of 406 amps, with conductors that have a summer emergency rating of 1,212 amps. The north Oakland area, as depicted on Exhibit 2-2, is experiencing a rapid load increase from industrial and commercial growth and the rise in electrical vehicle charging and electrification loads. Based on the latest

2024-2025 TPP load forecast, the north Oakland area load is expected to increase significantly in the next 15 years (PEA at page 2-4).

This additional capacity that would be brought to Oakland X Substation as part of the proposed project may be used by North Oakland Reinforcement Project; however, the project does not necessitate the use of this capacity by North Oakland Reinforcement Project. The additional capacity could be used in other ways to accommodate the identified growth in the North Oakland area.

PG&E communicates capacity changes to CAISO to update its register of all transmission lines, associated facilities, and entitlements subject to CAISO operational control.

PD-19 Please describe whether implementation of the proposed MOX Project is necessary for the viability of the North Oakland Reinforcement Project as approved by the CAISO Board on May 30, 2025. This response should discuss the actions that PG&E could be expected to take to ensure the viability of the North Oakland Reinforcement Project if the proposed MOX Project is not approved.

PG&E's Response

Under CPUC's jurisdiction, PG&E performs maintenance projects throughout its facilities. These maintenance projects have independent utility from capacity projects approved by CAISO as part of its Transmission Planning Process. As such, maintenance projects and CAISO-approved capacity projects are implemented independent of other project types that may be happening in the system near term or in the future. When maintenance projects are reasonably feasible, their additional capacities to the grid are studied as part of the transmission system during CAISO planning.

The North Oakland Reinforcement Project assumed the proposed MOX project would be approved as proposed in the PEA. If MOX is not approved as proposed, the North Oakland Reinforcement Project will still proceed, and PG&E will study the forecasted load growth served by the system with a "no project" MOX alternative, as appropriate. The new study results would inform any subsequent PG&E update to CAISO concerning the North Oakland Reinforcement Project.

We trust the information provided herein is fully responsive to your requests. However, should you have any further requests, please contact me at **415-990-6001** or **BXLG@pge.com**.

Sincerely,



Brandon Liddell
Principal Land Planner

cc:
Michelle Wilson, CPUC CEQA Unit
Erica Schlemer, PG&E Law Department
Colleen Taylor, Jacobs
Hedy Koczwara, Aspen Environmental Group