Background:

By 2021, in compliance with State Water Resource Control Board requirements, Once Through Cooling (OTC) generation in the Western LA Basin and SDG&E is expected to be retired. [1] Without this generation capacity, under periods of peak load, both the Western LA Basin and SDG&E service area will need to rely on the transmission system to import the lost power from outside the local area to serve load. As part of the CAISO's 2014-15 Transmission Planning Process (TPP), and even with the Proposed Project, CAISO has identified a reliability deficit in the Western LA Basin. SCE is already implementing several short-term mitigations to address this deficit including the following:

- Over 2100 MVAR of reactive support is projected to be installed by SCE and SDG&E prior to 2020.
- All available generation in the Western LA Basin has been dispatched to address the critical contingency.
- Projected levels of preferred resources have been modeled and dispatched
- Demand response has been utilized as forecasted

No Project Alternative:

If the Proposed Project is not implemented, additional actions would be required. SCE would need to implement a short-term load shed scheme(s). Due to OTC units that have already retired (e.g. San Onofre Nuclear Generating Station), SDG&E is currently load shedding for the critical N-1-1 contingency which causes regional thermal overloads and voltage issues. Without the Proposed Project, load shed of high density urban load within the Western LA Basin would be required to address thermal overloads on the Serrano Corridor. The amount and location of the load shed would be highly dependent on the success of the other components within the overall mitigation package which include availability of sufficient preferred resources, CAISO's approved transmission projects, and SCE's & SDG&E's generation procurement. In order to implement the load shed, additional telecommunications equipment and relays would need to be installed at various SCE facilities. The precise scope will be dictated by the conditions in 2021once the remaining OTC units retire. SCE would take this scheme to the Western Electricity Coordinating Council's (WECC) Remedial Action Scheme Reliability Subcommittee for approval as soon as the need is determined. The load shed scheme would be modified and approved again as load continues to grow in the LA Basin. SCE is not aware of any other feasible short-term mitigation options within SCE's control.

Per CAISO's Transmission Planning Standards, load shed in high density urban areas is not an acceptable long-term mitigation. SCE has an obligation to provide reliable service to its load in the Western LA Basin. This load can either be served by generation outside of the Western LA Basin which is transported into the area via the transmission system or generation sited inside of the Western LA Basin. Therefore, if the Proposed Project was not implemented SCE would have to pursue one, or some combination, of two long-term options:

1. **Procure additional generation within the Western LA Basin.**

   Without the Proposed Project, the flexibility of siting generation outside of the Western LA Basin would be reduced and additional local generation would become necessary to serve load. SCE would attempt to procure 617 MW of generation in alignment with the remaining authorization

[1] The State Water Board is required by law to comply with federal Clean Water Act Section 316(b), On May 4, 2010, the State Water Resources Control Board (State Water Board) adopted a policy regulating the use of seawater for cooling purposes at power plants in California.

received in the CPUC 2012 Long Term Procurement Plan (LTPP). In its recent Local Capacity Resources Request For Offers (LCR RFO), SCE procured all available cost-effective preferred resources in the area and there is limited authority remaining to procure additional traditional resources. Even with the Proposed Project, CAISO identified a resource deficit in 2024. Procurement of the remaining generation authorized under the 2012 LTPP without the Proposed Project would not satisfy this deficit and would leave the need for new generation to be authorized by the CPUC. Even if SCE was granted authorization for additional new generation within the Western LA Basin, the Proposed Project would still be necessary in the future.

2. Seek approval of an alternate transmission project to provide increased regional voltage support and relief to the Serrano Corridor

In its PEA, SCE presented a wide range of transmission alternatives which were studied and subsequently rejected by the CAISO in the 2014-15 Transmission Planning Process (TPP). This is discussed in pages 5-12 through 5-15 of the PEA. The "two best back-up [transmission projects]" which were presented by the CAISO in the 2014-15 TPP contain several risks and complications (CAISO TPP p. 109) are as follows:

(1) A Comisión Federal de Electricidad (CFE) - CAISO 500 kV tie line. This 100 mile line would cross federal jurisdiction into Mexico and require extensive new / additional rights of way.
(2) A transmission line from Midway Substation within Imperial Irrigation District service territory to a new "Inland" 500 kV Substation. This would require the construction of the Inland Substation, a 90 mile 500 kV transmission line from Midway to Devers, and a 35 mile 500 kV transmission line from SCE's Valley Substation to Inland Substation.

As noted by the CAISO and Aspen[2], these transmission alternatives involve challenging rights of way, represent lengthier development timelines, and have higher risks associated with permitting which could ultimately lead to project failure. SCE is attaching the ASPEN environmental assessment of both of these options which further details these complications.

If no project was implemented, a delay of OTC compliance or reliance on near-term load shed would be necessary to maintain compliance with North American Energy Reliability Corporation transmission system reliability standards. As stated by the State Water Resources Control Board, continued operation of OTC units would have harmful environmental effects on life in the ocean and estuaries. Upon OTC retirement, the no project alternative would not maintain compliance with CAISO planning standards. Under the critical N-1-1 contingency in San Diego, low voltages would occur. Furthermore, contingencies in the Serrano Corridor would create overloads within SCE's system in excess of transmission line ratings which would require a long term mitigation beyond continued load shed. To ensure long term reliability, SCE would either need to procure additional new generation inside of the Western LA Basin or move forward with an alternative transmission project.

[2] Aspen Environmental Group (Aspen) prepared the feasibility analysis under contract with the California Energy Commission (CEC) to inform CEC staff and the CAISO about the environmental feasibility of potential electric transmission options under consideration by the CAISO in response to the closure of the San Onofre Nuclear Generating Station (SONGS).