SUBSTATION WORK DESCRIPTIONS

(Additional Text Descriptions shown in Red)

1. From PEA (April 2014):

Associated Substation Work

Minor alterations, mainly in the form of alterations to substation and bay arrangements, would be required at two existing substations, as further described in the following subsections. The Proposed Project does not include the construction of any new substation facilities.

Sycamore Canyon Substation

In order to connect the proposed new 230 kV transmission line to the Sycamore Canyon Substation, the following steps would be required:

- The new 230 kV transmission line would be supported by three existing tubular steel poles (Structure Nos. E1, E2 and E3) to connect to the substation;
- Five existing transmission lines (TL 23021, 23041, 23051, 23054, and 23055) would be transferred from existing bay positions to new bay positions to accommodate the new 230 kV transmission line. Each move will require rewiring the protective relays to the new bay positions. All this work can take place inside the control shelter.
- Approximately two new 230 kV tubular steel poles[1] (Structure Nos. P1 and P2) would be required within and immediately adjacent to the substation to accommodate the transferring of existing 230 kV transmission lines (TL 23041);
- Relocate existing 138 kV power line (TL 13820) in Bay 33 to an underground position approximately 850 feet in length from Structure No. P3 to substation connection in Bay 32. One 138kV breaker, two 138kV disconnects and an underground termination structure with foundations will be installed. Protective relays will be added to accommodate the new position for the tieline. Relays for Bay 33 will be modified to protect the remaining section of bus.
- One existing bay 26 would require the addition of one 230kV circuit breaker and two 230kV disconnects. All the steel structures and foundations already exist in this bay. Protective relays will be added in the control shelter and wired to the breakers in Bay 26; and
- One 230kV CVT would be installed to be used for synch potential.

Peñasquitos Substation

In order to connect the proposed new 230 kV transmission line to the Peñasquitos Substation, the following steps would be required:

- The new 230 kV transmission line would terminate into a vacant position in the substation via a vacant position on an existing tubular monopole steel pole north of the substation fence line;

[1] Design of the Sycamore Canyon Substation getaways is preliminary, and final design may require additional work at the substation site to accommodate connection of the new 230 kV transmission line.

- The proposed new 230 kV transmission line termination bay would require the addition of two 230kV circuit breakers and four 230kV disconnects In Bay 9. The deadend steel exists in this bay. All other structures and foundation will be installed. Protective relays will be added in the control shelter and wired to the breakers in Bay 9.
- Existing 69 kV power lines TL 675 and TL 6906 would connect to the substation from new steel cable poles and existing ductbanks[2]; and
- One 230kV CVT would be installed to be used for synch potential.

Minor Substation Alterations

Minor alterations may be required at the existing Sycamore Canyon, Peñasquitos, San Luis Rey, Encina, Palomar Energy and Mission Substations. Minor alterations may include some combination of the following:

- Adjust relays to project the stubs of any abandoned bus systems;
- Adjust relays in order to maintain protection systems; and
- Upgrade protection on remaining transmission lines to improve reliability.

2. From Deficiency Response 1 (Question 1 – June 2014)

For the additional substations listed including Chicarita, San Luis Rey and Mission, minor relay, protection and transmission line work will be required. Activities may include adjusting of the phasing configuration of transmission and power lines as-needed. This work would typically require minimal lineman crews and line/bucket trucks.

After further analysis, no work is currently anticipated at Encina or Palomar Energy stations.

Locations of Chicarita, San Luis Rey and Mission Substations are included within the GIS files.

3. From Data Response 1 (Question 1 – August 2014)

For the Chicarita, San Luis Rey and Mission substations, no additional work is expected beyond what was described in the response to Question 1 of the Deficiency Report.

[2] Design of the Peñasquitos Substation getaways is preliminary, and final design may require additional vaults or trenching if the existing ductbanks cannot be utilized in place.