Comment Set E.8: Applicant – Geology, Soils, and Paleontology

ANTELOPE-PARDEE 500kV TRANSMISSION PROJECT
SCE COMMENTS & SUGGESTED REVISIONS ON DEIR/DEIS
C.5 GEOLOGY, SOILS AND PALEONTOLOGY

October 2006

Comment No.	Section	Page	Line	Comment	Remarks/How Suggested to Resolve	
1	C.5.1.2 Geologic Conditions and Hazards	C.5-2	Third Paragraph, fourth and fifth lines	Comments on fault segments in the **Lenore** Valley	Change wording from Lenore Valley to Leona Valley.	E.8-1
2	C.5.1.2 Geologic Conditions and Hazards	C.5-7	First Sentence in Slope Stability Paragraph	Misspelling, "...the steepness of the slop..."	Change slop to slope	E.8-2
3	C.5.1.2 Geologic Conditions and Hazards	C.5-7	Second Paragraph under Slope Stability	The first sentence states that, "Most of the proposed alignment and the alternatives do not cross any areas identified as existing landslide, except along Del Sur Ridge where the alignment passes across two mapped landslides in the Pelona Schist." The next sentence in the paragraph states, "However, although not crossed by the Project alignment: landslides have been mapped in the Project vicinity...".	Contradictory statements, revise	E.8-3
4	Table C.5-2 Major Soils along the Proposed Antelope-Pardee 500 KV Transmission Line	C.5-8	Description of soils in ANF	States only 3 soil family types exists in the NFS boundary traversed by the proposed project. According to the Soil Survey of Angeles National Forest Area, California, 1980; there are 5 different soil type areas of which the proposed project crosses in the ANF boundary. They are Lodo-Modesto, Mollic Haploxeralfs, Calcixerollic Xerochrepts-Calleguas, Stonyford-Millsholm, and the Trigo-Exchequer soil family types.	Revise: Update table to reflect all soil family types of which the proposed project transverses the ANF boundary.	E.8-4

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5	Table C.5-2 Major Soils along the Proposed Antelope-Pardee 500 KV Transmission Line	C.5-8	Hazard of Erosion on Roads and Trails	According to the Soil Survey of Angeles National Forest Area, California, 1980, the soils are ranked either as Low EHR (erosion hazard rating), Moderate EHR, High EHR, or Very High EHR. The rating of "Severe" is not listed as a rating for this area. Also, the range of EHR through ANF lands varies from Moderate to Very High.	Revise: Lodo-Modesto = Moderate to High, Mollic Haploxeralfs = Moderate to High, Calcixerollic Xerochrepts-Calleguas = High, Stonyford-Millsholm = High, and the Trigo-Exchequer = Very High. Note that the majority of the proposed line cross though Lodo-Modesto soil types which have a EHR of Moderate to High.	E.8-5
6	C.5.1.2 Geologic Conditions and Hazards	C.5-8	Third Sentence in last paragraph	States that, "These soil types generally coincide with soils such as young alluvium and other surficial deposits, which likely occur in areas throughout the Project area." This statement is not referenced.	State reference in the document	E.8-6
7	C.5.1.3 Seismic Hazards	C.5-10	Second Paragraph	States "effects of strong groundshaking and fault rupture are of primary concern to safe operation of the proposed transmission line and associated facilities." In general, an appropriate tower design which accounts for lateral wind loads and conductor loads will exceed any creditable seismic loading. Therefore, seismic events are not a primary concern in the design of a transmission line. However, SCE substation facilities are designed in accordance with the Institute of Electrical and Electronic Engineers' 693 "Recommended Practices for Seismic Design of Substation".	Revise sentence to eliminate the wording "primary concern" as relating to transmission line design and/or operations.	E.8-7
8	C.5.1.3 Seismic Hazards	C.5-11	Strong Groundshaking - General	In general, an appropriate tower design which accounts for lateral wind loads and conductor loads will exceed any creditable seismic loading (groundshaking).	Add this language into Strong Groundshaking section.	E.8-8

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9	C.5 Section Geology, Soils and Paleontology	Page C.5-13, Figure C.5-2, Regional Faults (Active and Potentially Active) and Historic Earthquakes			Three potentially active faults in the project vicinity are missing from the regional fault map: Mint Canyon, Soledad and Pelona Faults. Alternative 5 may cross or are in close proximity to the Mint Canyon Fault, Soledad Fault and a potentially active portion of the San Francisquito Fault. In addition, the mapped portion of the Pelona Fault extends toward Alternative 4, and unmapped portions may possibly cross Alternative 4.	E.8-9
10	C.5.2.2 State	C.5-19	Geologic and Seismic Hazards, last paragraph	States the proposed project is in Seismic Zone 3, this is incorrect. The proposed project is in Seismic Zone 4	Revise to "As the proposed Project lies within UBC Seismic Zone 4..."	E.8-10
11	C.5.3 Significance Criteria	C.5-20	Geology and Soils, Criterion GEO 5	States the high potential for earthquake-related ground rupture in the vicinity of major fault crossings along the transmission line route, resulting in probable damage to the transmission line structures.	In general, an appropriate tower design which accounts for lateral wind loads and conductor loads will exceed any creditable seismic loading (groundshaking).	E.8-11
12	C.5.5 Impact Analysis	C.5-25		Tower locations can be adjusted to avoid known fault traces. But aligning the T/L to cross perpendicular to a fault may have no advantage. Towers on either side of a fault can be designed to provide a significant amount to slack to mitigate possible fault movement.	Reduce mitigation to simply include its last sentence.	E.8-12

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13	C.5.	C.5-33		Portions of the mitigation measure proposed are incorrect and infeasible. Implementation of this mitigation measure is infeasible, because the underground duct is rigid and encased in compacted fill. Because of this the Impact G-13 should be a Class I impact	This mitigation measure should be deleted because it cannot be mitigated. Impact G-13 should be reclassified as a Class I impact.	E.8-13
14	Table C.5-11 Major Soils along the Alternative 2 Route	C.5-36	Hazard of Erosion on Roads and Trails	According to the Soil Survey of Angeles National Forest Area, California, 1980, the soils are ranked either as Low EHR (erosion hazard rating), Moderate EHR, High EHR, or Very High EHR. The rating of "Severe" is not listed as a rating for this area. Also, the range of EHR through ANF lands varies from Moderate to Very High.	Revise: Trigo-Exchequer = Very High, Lodo-Tujunga = Moderate to High, and Lodo-Modesto = Moderate to High.	E.8-14
15	C.5.7.1 Affected Environment	C.5-37	Mineral Resources	This paragraph states that no active production/quarrying operations are located near the alignment of Alternative 2. This statement is incorrect.	Alternative 2 is located in close proximity to the Bouquet Canyon Stone Quarry. Revise paragraph	E.8-15
16	Table C.5-14 Major Soils Along the Alternative 4 Route	C.5-42	Hazard of Erosion on Roads and Trails	According to the Soil Survey of Angeles National Forest Area, California, 1980, the soils are ranked either as Low EHR (erosion hazard rating), Moderate EHR, High EHR, or Very High EHR. The rating of "Severe" is not listed as a rating for this area. Also, the range of EHR through ANF lands varies from Moderate to Very High.	Revise: Calcixerollic Xerochrepts-Calleguas = High	E.8-16

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17	C.5.10.2 Impacts and Mitigation Measures	C.5-51	Substantial Alterations of Topography (Criterion GEO4), second sentence	States that the amount of land disturbance for Alternative 5 would be higher than the estimated 122 acres of land disturbance for the proposed project. (See comments for Table B.2-7 because the estimated 122 acres for the proposed project is incorrect) .	See comments for Table B.2-7. The estimated land disturbance for Alternative 5 is approximately 134 acres, while the proposed project has an estimate of approximately 110 acres of land disturbance.

E.8-17

Response to Comment Set E.8: Applicant – Geology, Soils, and Paleontology

E.8-1 The mistake in spelling of Leona Valley corrected in the text.

E.8-2 The misspelling has been corrected.

E.8-3 Text revised to make statement clear and not appear contradictory.

E.8-4 Table C.5-2 revised to include Stonyford-Millsholm soil complex in the Angeles National Forest Area. Mollic Haploxeralfs were not added to the table as the alignment does not cross any soils of this complex based on the GIS mapping for the Angeles National Forest Area Soil Survey.

E.8-5 No change made. Soil erosion ratings for the tables in this document, "Hazard of Erosion on Roads and Trails", were based on data from the Hazard of Erosion and Suitability for Roads on Forestland Table from the USDA NRCS online tabular data sets for the Antelope Valley (data version 1, 3/2004) and Angeles National Forest Area (data version 1, 12/2004) soil surveys. This data gives relevant information on how the soils in the project area will respond to use and disturbance as roads and trails.

E.8-6 Missing reference for statement added to the text.

E.8-7 Sentence revised to read "…effects of strong groundshaking and fault rupture are of concern to safe operation…" The wording changed from "of primary concern" to "of concern".

E.8-8 Language relating to appropriate tower design accounting for lateral wind and conductor loads exceeding creditable seismic loading was added to Impact G-6 which discusses groundshaking issues.

E.8-9 Although the Soledad, Mint Canyon, Pelona, and San Francisquito Faults are not considered significant seismic sources and would likely only have sympathetic rupture during a large earthquake on a nearby active fault, they are Quaternary faults and are thus potentially active. They have been added to Figure C.5-2.

E.8-10 Typo corrected and text revised to Zone 4.

E.8-11 This comment seems to be aimed at groundshaking issues; however, Criterion GEO 5 relates to surface ground rupture and displacement along the trace of a fault.

E.8-12 Mitigation measure rewording to include some of the language in the comment and some language removed from the measure, as below.

> **G-4 Minimize Project Structures Within Active Fault Zone.** Perform a geologic/geotechnical study to confirm location of mapped traces of active and potentially faults (the San Gabriel and San Andreas Faults) crossed by the alignment. ~~Any crossing of an active fault crossing (overhead or underground) shall be made as close to perpendicular to the fault as possible to make the segment cross the shortest distance within an active fault zone.~~ Tower locations shall be adjusted as necessary to avoid placing tower footings on or across mapped fault traces. Towers on either side of a fault shall be designed to provide a significant amount of slack to allow for potential fault movement and ground surface displacement.

E.8-13 If appropriate engineering measures cannot be formulated to protect equipment and limit the extent of potential repairs, then Impact G-13 would be considered unavoidable and undergrounding the transmission line across the San Gabriel Fault Zone may be deemed infeasible. If this turns out to be the case, the underground component of Alternative 1 would most likely only occur from approximately Mile 11.0 to Mile 15.0 in the ANF and the transmission line would need to remain overhead in the existing ROW within the City of Santa Clarita.

E.8-14 See the response to Comment E.8-5.

E.8-15 Text revised to clarify that the Bouquet Canyon Stone Quarry is in the vicinity of the Alignment 2, but would not be affected by this alignment due to its presence west and upslope of the alignment.

E.8-16 See the response to Comment E.8-5.

E.8-17 See the responses to Comments E.4-15 and E.4-16. Text changed to match disturbance areas in revised Table B.2-7.