Southern California Edison
A.21-08-009 – TLRR CSP PTC

DATA REQUEST SET C P U C - S C E - C S P P - 0 0 1

To: CPUC
Prepared by: David Balandran
Job Title: Sr Advisor
Received Date: 1/25/2024

Response Date: 2/8/2024

Question 001:
For the alternatives involving decommissioning and removing either the 'A' or 'C' circuit and making other upgrades, please confirm/provide the following:

- For the remaining line to be rebuilt, would all existing poles need to be removed and replaced or could any existing poles remain (while correcting the G.O. 95 clearance discrepancies)?
- Would the new poles be installed generally proximate to the existing poles in the same alignment (similar to the Proposed Project approach)? Confirm the approximate distance the new poles would be installed from the existing poles?
- Since the remaining line under these alternatives would stay as a single-circuit, we assume that the new poles for the rebuilt line would be shorter than those proposed for Segment 3 in the Proposed Project. Please confirm that this assumption is correct and provide the height range for the new single-circuit poles. Please also confirm what types of structures these would be and the material (e.g., wood pole-equivalents made of ductile iron, etc.) and diameter. Additionally, provide the pole foundation depth and diameter for the single-circuit pole installation.
- Under both of these alternatives (i.e., decommission/removal of 'A' or 'C'), the tap-connections to Zack and Deep Springs substations would still need to be remediated, correct? If so, would the scope be the same for Segments 4 and 5 as under the Proposed Project, with the exception of the remote disconnect switches that would need to be installed on each side of the tap connection points, as indicated in the PEA?

Response to Question 001:
SCE considers the complete removal of one circuit - either the "A" or the "C" circuit (but not both) infeasible as each line serves as a back-up source to the other line, allowing service under outage conditions to be maintained by opening primary source disconnects and closing back-up source line disconnects. Therefore, removal of the 'A' circuit would result in each of the Deep Springs, White Mountain, and Zack substations and the Fish Lake Valley Metering Station being supplied by the 'C' circuit alone; this eliminates redundancy in the system. The reverse also holds true for the removal of the 'C' circuit. The removal of a single circuit would eliminate redundancy to several substations, drastically reducing system reliability and operational flexibility. In addition to these issues, after removal of either circuit, under normal operations, the remaining circuit would have to

carry all the load. Increasing the load on the remaining circuit would result in increased conductor sag, which could exacerbate existing clearance infractions as well as potentially create additional infractions. Furthermore, from a reliability standpoint, these circuits experience frequent outages, and therefore redundancy is imperative to maintain a reasonable quality of service to the communities served by these lines. Consequently, the decommissioning and removal of either one of these two circuits would not be feasible.

A. All existing poles would need to be removed and replaced. If SCE were to remove either the 'A' or 'C' circuit and leave the other circuit in place as a single 55kV circuit, that single circuit would have to carry the load of the existing double-circuit system. To carry the additional load the line would need to be designed to use larger conductor, taller poles, and shorter spans to ensure conductor height compliance with GO-95 Table 1. In addition, the existing poles do not have sufficient space at the top to accommodate the installation of Optical Ground Wire (OPGW).

B. If SCE were to construct a single-circuit pole line through Segment 3, it would generally follow the same approach and alignment as that of the Proposed Project. Specific distances between new and existing pole locations could not be determined until final engineering efforts are completed.

C. The pole heights, material, diameter, and foundation depth that would be used for a single-circuit pole line through Segment 3 would be similar in size as those identified in the Proposed Project.

D. Under both the decommission/remove 'A' or 'C' circuit alternatives, the scope of work in Segments 4 and 5 would be the same as described for the Proposed Project. As noted, three disconnect switches would be needed at the Zack and Deep Springs tap lines. Additionally, similar setups with three disconnect switches would be needed at White Mountain substation and Fish Lake Valley Metering station.

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Question 002:
For the Highway 6 Route Alternative, as described in the PEA and subsequently modified, provide the following information:

- For Segments 6 and 7, which will need to be double-circuit pole lines based on SCE's response to BLM's data request regarding a Highway 6 alternative, will theselines utilize the same types of structures and components as the double-circuit polelines proposed for Segment 3 in the Proposed Project? If not, please indicate the differences and/or provide the structure information as provided in Table 3.3-2 for these segments, including the estimated number of poles/structures required for thesegments.
- For Segment 4, which will need to be rebuilt into a double-circuit pole line under a Highway 6 Route Alternative per SCE's response to BLM, indicate the types of polesand height range of the existing structures along this segment. Table 3.3-1 in the PEA indicates the existing poles are wood poles ranging from 35 to 47 feet tall, but this is only pertaining to the two poles proposed for removal or modification as part ofthe Proposed Project. Are the other existing poles within Segment 4 similar?
- The PEA indicates that the Highway 6 Route Alternative would require installation ofa new metering station at either the California/Nevada border, the Zack Substation, or near the Fish Lake Valley North Substation. Please indicate the types of facilities that would comprise the metering station, and provide an estimate of the station footprint (acres).
- Could you provide the same economic cost estimates for the SCE version of the Highway 6 Alternative as are provided for the BLM-modified version in SCE's response to the BLM data request? The SCE version of the alternative (as described in the PEA) would require less new double-circuit line construction than the BLM modified version (e.g., nearly all of Segment 3 would be removed and not rebuilt);however, it would require the DER systems at White Mountain and Deep Springssubstations, which SCE estimates will cost $10M and $12M, respectively. We're wondering how the alternative compares overall in terms of cost.

Response to Question 002:
All alternatives that require re-routing of the lines via CA Highway 6 and/or Nevada Highway 264 more than double the linear circuit mileage of the Proposed Project. While SCE's PEA concluded that the Highway 6 alternative was feasible, subsequent more detailed analyses conducted by SCE showed that the additional infrastructure required to construct the alternative would likely result in greater environmental impacts and significantly more cost. Furthermore, the circuitry would not be operable at 55kV due to the extensive additional length of this alternative as compared to the Proposed Project. To effectively operate the extended circuitry, the operating voltage would have to

be increased significantly. As such, increasing the operating voltage would require extensive upgrades, which would significantly increase the environmental impact and cost to all the substations in the area, including Control Substation, Zack Substation, White Mountain Substation, Deep Springs Substation, and the Fish Lake Valley Metering Station. Due to these additional environmental impacts and higher costs, the Highway 6 alternatives (PEA and BLM) were dismissed.

A. This Highway 6 Route Alternative would utilize similar double-circuit pole types as described under Segment 3 of the Proposed Project. However, due to an increase in span length and height of the poles to be used in this alternative, it is assumed that the poles would be taller and therefore have larger diameter in comparison to the proposed project infrastructure.

B. Poles and height ranges for Segment 4 of the PEA and BLM Modified Highway 6 Route Alternative would use the same methodology as Segment 6 and 7 as described above.

C. The new metering facility would be similar to SCE's existing Fish Lake Valley metering station. However, it is assumed that the footprint of the proposed metering station for this alternative would be larger than the existing Fish Lake Valley metering station to accommodate upgraded metering infrastructure.

D. As described in response to Question 2, SCE has determined that the Highway 6 Alternative as described in the PEA is no longer feasible and the updated modified Highway 6 Alternative provided in response to the BLM request is the only viable option of this alternative.

A preliminary analysis of the cost estimate for the Highway 6 alternatives (PEA and BLM) showed that the cost to construct these alternatives was likely to be significantly higher than the Proposed Project. This is due to the significant increase in line length as well as extensive upgrades to all the substations included in these alternatives. For the PEA Hwy 6 alternative, there may be some savings due to not needing to rebuild the portion of segment 3 from the Zack tap to the White Mountain Substation. However, a cursory cost estimate showed that these savings would be insignificant as compared to the additional cost associated with removal of segment 3 as well as the additional significant circuitry and the required substation upgrades at all the substations included in these alternatives.

Furthermore, a preliminary cost analysis did not include additional infrastructure such as Microgrids, battery and solar technology, and other power delivery alternatives for White Mountain and Deep Springs substations. Initial studies and preliminary analysis reveal that the facilities to serve White Mountain and Deep Springs would be prohibitively expensive and not economically feasible. As such, both alternatives were dismissed due to extremely high costs and additional environmental impacts.

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Question 003:
Please provide answers to the following questions:

A. On page 4 of SCE's response, it states: "BLM's Hwy 6 Alternative, when more accurately described, requires the construction of approximately 97 miles of double-circuit 55 kV lines, which is 64 miles longer than the approximately 33 miles of line construction identified in the Proposed Project." This seems to be based on the lengths of Segment 4 (16 miles), Segment 6 (21 miles), and Segment 7 (60 miles), which add up to 97 miles. However, wouldn't there also be double-circuit line construction for the portions of Segment 3 that would still be constructed (i.e., from the terminus of Segment 2 to the White Mountain Substation, and from the Deep Springs Tap to Fish Lake Valley Metering Station) under the BLM Highway 6 Alternative?
B. If the answer to the question above is yes, and the BLM-modified Highway 6 Alternative would involve more than 64 additional miles of double-circuit construction, relative to the Proposed Project, would this affect the cost estimates provided on pages 5 to 6 in the response document? In other words, would the cost estimates need to be adjusted upwards?
C. For the BLM-modified version of the Highway 6 Alternative, please describe the scope of work at the White Mountain and Deep Springs substations. Would the work at these substations be the same as the Proposed Project, or would anything be different?

Response to Question 003:
All alternatives that require re-routing of the lines via CA Highway 6 and/or Nevada Highway 264 more than double the linear circuit mileage of the Project. SCE's analysis concluded that it would be infeasible to electrically operate 55 kV circuitry effectively over that distance without causing severe voltage and power quality issues. Therefore, SCE has concluded that due to the additional length of the Highway 6 alternatives (PEA and BLM), these alternatives are infeasible.

A. Under the BLM's-modified Highway 6 Route Alternative, part of Segment 3 (from Terminus of Segment 2 to the Zack Tap) would be rebuilt as a double-circuit line. The remaining portions of Segment 3 (from Zack tap to White Mountain Substation and Deep Springs Tap to Fish Lake Valley Metering Station) would be rebuilt as a single-circuit 55kV pole line. Therefore the single circuit 55kV pole lines were not included as part of the 97 miles of double circuit construction.

B. There would not be more than 64 miles of double circuit construction since these portions would be rebuilt as a single circuit, as described in part A above. Therefore, the cost estimate does not need to be adjusted.

C. The scope of work for White Mountain and Deep Springs substations under the BLM-modified Highway 6 Route alternative provided in response to the BLM request would not be exactly the same, but is expected to be similar to the Proposed Project. Detailed engineering would have to be completed to identify the similarities and differences between the BLM and PEA alternatives.

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Question 004:
Regarding the Rebuild Existing Single-Circuit Pole Lines Alternative, described in the PEA, please provide the following:

- Please provide the height range, pole type, and material for the single-circuit subtransmission structures along Segment 3 under this alternative. The PEA indicates that the existing poles within this segment range from 24 to 63 tall, but whatwould be the height range of the new poles, since the single-circuit lines would still need to be rebuilt to address the G.O. 95 discrepancies?
- Additionally, please estimate the number of new poles/structures that would be required for Segment 3 under this alternative. Would the new poles be spaced further apart than the existing poles, or would the poles/structures be replaced onessentially a one-to-one basis?
- Would the single-circuit poles proposed for Segment 3 be the same as those for Segments 4 and 5 under the Proposed Project? If not, please provide the pole diameter, foundation depth, and foundation diameter.
- Please provide a rough cost comparison between this alternative and the ProposedProject. Since more poles would need to be installed under the alternative (i.e., twosingle-circuit pole lines), it seems that it could be more expensive; however, please confirm.
- Additionally, indicate/confirm whether this alternative would involve a greater overall amount of construction activity relative to the Proposed Project, due to the need to install more new poles.

Response to Question 004:
Rebuilding the existing single-circuit pole lines would be more environmentally impactful than the Proposed Project. The Rebuild Existing Single-Circuit Pole Lines Alternative would rebuild two separate pole lines – with one circuit on each pole line. This would require twice the amount of poles as a the single pole line included in the Proposed Project. The Rebuild Existing Single-Circuit Pole Lines Alternative would require roughly double the amount of construction activity due to the additional number of poles, work locations to install those additional poles and additional work activity and lands disturbance associated with the additional poles.

A. The Rebuild Existing Single-Circuit Pole Lines Alternative would utilize similar pole types and heights as those proposed to be used in Segment 3 of the Proposed Project.

B. The number of new poles/structures needed for the Rebuild Existing Single-Circuit Pole Lines Alternative would be approximately equal to the number of poles that currently exist. SCE anticipates that spacing would be generally similar due to varying terrain (both vertically and horizontally) through the canyons, but would not know for certain until final engineering is completed.

C. The single-circuit poles that would be used for Segments 4 & 5 would be the same as those used in Segment 3 of the Proposed Project.

D. Further cost analysis would be necessary to provide an accurate cost estimate; however SCE believes that this alternative would be more expensive than the Proposed Project due to the cost of the additional infrastructure (twice the number of poles) and the additional labor required to build a separate pole line.

E. The Rebuild Existing Single-Circuit Pole Lines Alternative would likely require a greater overall amount of construction activity relative to the Proposed Project. Detailed engineering would be required to obtain the pole counts for both the Proposed Project as well as the Rebuild Existing Single Circuit Pole Lines Alternative. However, SCE expects that the same number of poles would need to be replaced; which is twice the number of poles needed to construct to the Proposed Project. In addition to pole replacements, this alternative would require installation of new conductor and associated infrastructure. These activities would result in greater overall construction activity as compared to the Proposed Project.

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Question 005:
1. Confirm that there is no removal of gas insulated switches containing SF6. If there is removal, we need to know for existing setting the amount of SF6 in these and plan for recovery/disposal of these. It was only stated that there will be no new switches.
2. For the concrete batch plant, what is the volume of material that will be processed so that emissions can be estimated. Will the concrete batch plant include any PM controls such as filters or baghouses?
3. Will there be any generators used, if so size and hours of use?

Response to Question 005:
1. No SF6 gas-insulated switches are to be removed as a result of the Proposed Project.

2. The current design of the CSP Project includes 137 tubular steel pole structures, and 8 tubular steel pole H-frames (where each H-frame includes 2 tubular steel poles). As stated in the CSP PEA document, each TSP would require approximately 3 to 20 cubic yards of concrete for its foundation. Therefore, a maximum of approximately 3,060 cubic yards of concrete (153 x 20) would be processed. Any concrete batch plant(s) utilized during the CSP Project would include required emissions controls.

3. As stated in the CSP PEA document, "If it is determined that temporary power is not needed or available at the material yards full time, a portable generator may be used intermittently for electrical power at one or more of the yards." If a generator is used, it would have an engine rated at 45 horsepower or less, and could be used up to 10 hours per day.

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Question 006:
There were several discrepancies between the equipment parameters in Appendix B (Emissions Calculations) and Appendix L (Vehicle Miles Traveled Calculations) in the PEA, as follows. Please clarify which are correct. For Off-Road Equipment – all number of hours, horsepower, and load factors were consistent except:

- Guard Structure Install/Removal Phase:
  - Backhoe/Front Loader listed 350 HP in Appendix L and 125 HP in AppendixB
- Fish Lake Civil 21a Phase
  - Cranes listed 250 HP in Appendix L and 300 HP in Appendix B

Response to Question 006:
The correct values are in Appendix B (these values are used in the emission calculations). A corrected Appendix L is provided.