Southern California Edison Company’s Rebuttal Testimony On the Mesa 500 kV Substation Project

Before the
Public Utilities Commission of the State of California

Rosemead, California
November 30, 2016
Southern California Edison Company’s Rebuttal Testimony On the Mesa 500 kV Substation Project

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I. INTRODUCTION

On March 13, 2015, Southern California Edison Company (SCE) filed with the California Public Utilities Commission (CPUC or Commission) an application (A.15-03-003) seeking a Permit to Construct (PTC) for the Mesa 500 kV Substation Project (Proposed Project). The Commission issued the Draft Environmental Impact Report (DEIR) on April 29, 2016 and the Final EIR (FEIR) on October 7, 2016. In accordance with the Scoping Memo and Ruling of Assigned Commissioner (Ruling), dated November 14, 2016, SCE served Opening Testimony on November 18, 2016, and hereby serves this rebuttal testimony to the Prepared Testimony of Office of Ratepayer Advocates by Charles Mee (ORA Testimony).

II. SCE’S REBUTTAL TESTIMONY

A. The One Transformer Alternative Is Not Reliable And Likely Triggers An Immediate Need For Additional Transformer Facilities.

Q: Is the One Transformer Alternative feasible from a reliability perspective?

A: No. This Alternative reduces the import capability into the Western L.A. Basin and cannot accommodate renewable resources as reflected in the 33% renewable portfolio established by the CPUC and CEC and modeled by the CAISO in its 2015-16 Transmission Plan.

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1 SCE submitted comments on the DEIR on June 27, 2016. SCE’s position, in part, was that the three Alternatives proposed in the DEIR, the One Transformer, Two Transformer, and GIS Alternatives were not environmentally superior to the Proposed Project and should be dismissed from further consideration. The FEIR retained these alternatives. SCE’s position remains that the three alternatives put forth in the FEIR are not environmentally superior, but as they were retained, SCE submitted testimony on November 18, 2016, addressing the infeasibility of those alternatives and the benefits of the Proposed Project which override the associated significant impacts. The following link is to SCE’s DEIR comments as captured in the FEIR: http://www.cpuc.ca.gov/environment/info/ene/mesa/Docs/46.1%20Comment%20Set%20D_Applicant.pdf

2 FEIR, Responses to Comments at 325: “Although it is true that the One-Transformer-Bank Substation Alternative would provide less import capacity than the proposed project, the One-Transformer-Bank Substation Alternative addresses all contingencies in Appendix B.”
(2016 Plan). The One Transformer Alternative was designed with a specific impedance to marginally address the reliability issues in SCE’s 2014 case and creates reliability violations when examined under the 2016 Plan. Additionally, there is virtually no impedance value that can be chosen for the One Transformer Alternative that will produce a reliable solution under the 2016 Plan. The One Transformer Alternative also includes a Remedial Action Scheme (RAS) in which the loss of two transmission lines will open two other transmission lines, resulting in the loss of four lines that serve the Western L.A. Basin, leaving the system more vulnerable to the next contingency. The Proposed Project with three transformer banks, without a RAS, can reliably serve load under both the 2014 case and 2016 plan.

Q: Is the power flow for the One Transformer Alternative similar to the Proposed Project as asserted by ORA?

A: No. Though the transmission lines connecting into Mesa Substation will be the same for the Proposed Project and the One Transformer Alternative, there are material differences in scope between the two that create significantly different power flows. The Proposed Project provides 3,360 MVA of capacity with three independent transformer banks; whereas, the One Transformer Alternative is a single 1,600 MVA transformer bank with a RAS. Three transformer banks versus one bank do not provide the same impedance pathway between the 500kV and 220kV systems and will not produce similar power flows on the 500kV and 220kV lines. This is evident in that the Proposed Project has the flexibility to reliably accommodate SCE’s 2014 case as well as CAISO’s 2016 Plan. In contrast, the One Transformer Alternative was designed to marginally address the reliability issues in SCE’s 2014 case and creates reliability violations when examined with CAISO’s 2016 Plan.
Q: Should the Commission rely solely on SCE’s 2014 case in deciding whether the Proposed Project or one of the FEIR Alternatives should be adopted?
A: No. SCE’s 2014 case should not be the only reference to ensure a reliable transmission system. This case is from SCE’s 2014 reliability assessment and therefore several years old and does not reflect 33% renewable portfolio assumptions, but focuses on high imports from any resource type outside of SCE’s service territory in order to stress SCE’s transmission system during peak load periods. The CAISO’s 2016 Plan applies more recent planning assumptions, including the 33% renewable portfolio as established by the CPUC and CEC. Relative to the 2014 case, the 2016 Plan has over 1,900 MW more power flowing out of the Tehachapi area north of Mesa Substation, resulting in an increase of over 1,100 MW on the lines directly feeding into Mesa Substation. Both the SCE 2014 case and CAISO’s 2016 Plan need to be recognized to ensure a reliable transmission system.²

Q: What are the consequences of the Commission not recognizing CAISO’s 2016 Plan?
A: This will result in an immediate reliability violation in CAISO’s Transmission Planning Process. This would likely trigger the immediate initiation of a new substation project, in a future CAISO Transmission Plan, to install additional 500/220kV transformer capacity at Mesa Substation.³

B. ORA’s Suggestions Regarding Construction of the MWD Water Relocation And The One Transformer Alternative Are Not Accurate Or Feasible.

Q: Is the description of the One Transformer Alternative accurate as described in ORA’s Testimony at page 3, lines 4-12?
A: ORA’s Testimony does accurately reflect the description of the One Transformer Alternative as found in the FEIR.⁹ However, SCE reiterates its concern that the perimeter boundary of the substation in this Alternative, as shown in FEIR Figure 3.4-1, driven by the

² SCE Opening Testimony at 3.
³ SCE Opening Testimony at 7.
⁹ FEIR at 3-4, Section 3.4.1.1.
presumed reductions in sizes for the 500 kV switchrack and transformer areas, was established without the benefit of developing a detailed design reflecting those substation elements and therefore is overly optimistic regarding the size reduction that ultimately may be possible by selection of this Alternative. In addition, the Alternative as shown in the figure does not appear to include any provision for the relocation of the existing operations theater building, planned for the northeast corner of the property under the Proposed Project, which further complicates the overall design of the future substation under the One Transformer Alternative.\(^9\)

Q: ORA asserts that “SCE argues that the One Transformer Alternative is infeasible because it requires the relocation of the Metropolitan Water District (MWD) water pipe.” \(^9\) Is this assertion accurate?

A: No. Infeasibility of the One Transformer Alternative has nothing to do with the required relocation of the MWD waterline. ORA’s Testimony appears to overlook and/or misunderstand the entirety of the scope of the Proposed Project, which includes the complete relocation of all existing 220 kV, 66 kV and 16 kV switchracks and associated lines to new locations on the western portion of the property. This substation relocation is driven by the need to build the new 500 kV switchrack and 500/220 kV transformer banks in the area currently occupied by the existing substation, which is a scope element that is common to the Proposed Project and all three FEIR Alternatives. Because the existing MWD waterline falls within the area where the future 220 kV switchrack and 220/66 kV transformer banks would be located, regardless of which alternative is ultimately selected, it is incorrect to imply that selecting the One Transformer Alternative over the Proposed Project would change the need to relocate the waterline accordingly.

Q: Explain the engineering background of the site grading plans, particularly as it relates to the MWD pipeline relocation.

\(^9\) SCE Opening Testimony at 20.
\(^9\) ORA Testimony at 4, lines 9-10.
A: The need to regrade the entire western portion of the property is driven by more than just the relocation of the MWD waterline. Even if SCE were to design the waterline lower, as suggested in ORA’s Testimony, a significant amount of site grading, including fill requirements, would still be needed to flatten out the site and create an appropriate substation pad for the relocated 220 kV, 66 kV, and 16 kV switchrack areas and associated transformer banks that properly matched with the portion of the pad needed in the future for the 500/220 kV transformer bank and 500 kV switchrack area. Typically, SCE, as do many other commercial developers, uses a standard 2% slope gradient to allow for surface water runoff during rainstorm events. When that gradient design is applied across the full length of the substation needed to accommodate all four new switchracks (500, 220, 66, & 16kV) and the associated transformer banks, keeping in mind also the various elevation constraints that were previously described in SCE’s testimony, the result is an overall pad elevation that requires the amount of fill soil calculated and provided in SCE’s Opening Testimony. In addition, ORA’s Testimony incorrectly states the depth at which the MWD waterline must be placed, indicating that the pipe “must be four feet underground” when, in fact, MWD requires that it must have at least 10 feet of soil covering the top of the pipe. During design, this requirement was incorporated with all other civil engineering constraints related to the existing topography of the area planned for the new substation facilities, such as proper surface water flow, on-site storm drainage provisions, installation of new underground duct banks for the 66 kV and 16 kV circuit getaways, and the fixed tie-in points to both the MWD connections and existing storm drain systems, to finalize the overall site grading needs. This is a much more complicated process than is implied by the statement in ORA’s Testimony. Therefore, simply lowering the elevation of just the MWD waterline, without understanding the consequential impacts to the storm drain system or other underground facilities planned for that area, does not necessarily mean the elevation would not

\[12\] SCE Opening Testimony at 22.
\[13\] SCE Opening Testimony at 9.
\[14\] Appendix A, Email from Kieran Callanan, Metropolitan Water District, 11/28/2016.
still need to be increased. Given the overall site grading needs, the ability to relocate the
available quantity of soil found in the hill is the most effective means to raise that western
portion of the property and accomplish the overall project grading requirements with minimal
overall environmental impacts, including the reduction of risks for fugitive dust creation,
transportation issues, and exhaust issues related to the use of additional haul trucks if the same
amount of soil were to be imported from a remote location, as described in SCE’s Opening
Testimony.15

Q: What is the background of the engineering requirements associated with the MWD
pipeline relocation?
A: SCE initiated conversations with MWD in the third quarter of 2014. After understanding
what the minimum requirements would be from MWD related to the relocated waterline, SCE
incorporated that information, in conjunction with the other site requirements discussed
previously (e.g., surface slope gradient for water runoff, incorporation of on-site storm drains
and other underground facilities, etc.), to develop a preliminary grading plan for the overall site.
This information was then provided to MWD for their development of a detailed pipeline design.
After several iterations and clarifications, the MWD final design was completed in April 2016.
While there are various ways that a pipeline such as this one could be designed, there would be a
significant impact to the Project’s overall construction schedule if changes to the site grading
plans and associated changes to the pipeline design were approved by the Commission in order
to accommodate the suggestion provided in ORA’s testimony to simply “…lay the water pipe
lower than its current elevation…,” considering that the new pipeline design could also require
additional features such as blowoff structures at new low points and air release/vacuum valves at
high points.16

15 SCE Opening Testimony at 22-25.
16 Appendix A, Email from Kieran Callanan, Project Engineer, Manager, Substructures Team,
Metropolitan Water District, to Scott Lacy, Project Engineer, SCE, 11/28/2016.
The general description of the amount of overall site grading, including the need to relocate the MWD waterline, was provided in SCE’s PEA, submitted in March 2015 and the DEIR, issued in April 2016. ORA failed to provide any comments to the DEIR about this issue.

Q: ORA seems to assume that if the hill is not disturbed, several transmission towers will not need to be relocated. Is that an accurate assumption?

A: No. The statement that “…disturbing the hill would lead to the relocation of several transmission towers…” is not accurate. ORA appears to overlook and/or misunderstand the entirety of the scope of the Proposed Project, which includes the complete relocation of all existing 220 kV and 66 kV switchracks and associated lines to new locations on the western portion of the property. The transmission towers ORA references must be relocated under all Alternatives (e.g., the Proposed Project and the three FEIR Alternatives), regardless of whether the hill is disturbed or not, because their relocations are driven by the need to build the new 500 kV switchrack and transformer banks in the location currently occupied by the existing substation.

Q: ORA asserts that the “hill also provides a useful barrier between the Mesa Substation and the traffic on the State Route 60 freeway, as well as a planned shopping center on the other side of Greenwood Avenue.” Is the hill as a “barrier” an environmental impact discussed the FEIR?

A: No. As it relates to the hill “providing a useful barrier” between the substation and either the future shopping center or the freeway, it is unclear in ORA’s statement as to what benefit that “barrier” would provide. SCE is unaware of any discussion in the FEIR about any value that the hill could provide to the aesthetic impacts to either the shopping center or traffic on the freeway. The only aesthetic benefit supposedly gained by the One Transformer Alternative is related to the supposed reduction in structures associated with the 500 kV switchrack. In other words, the hill as “barrier” is unsupported by analysis in the FEIR or any other evidence.

See FEIR page 5-4, lines 20-23.
Q: Is the One Transformer Alternative the most economical Alternative, as asserted by ORA?

A: The One Transformer Alternative is not necessarily the most economical choice. While it may be generally correct that the costs associated with the 500/220 kV transformer banks would be reduced, as well as some costs related to the 500 kV switchrack, a more complete and accurate cost comparison must also include associated increases in expenses for items such as engineering re-design efforts for both the site grading and electrical plans, acquisition and transportation of the requisite quantities of imported soil needed to offset the available on-site soil not used under this Alternative, additional construction management overhead costs associated with the extended schedule resulting from the need to import soil, and other similar items. Therefore, it is speculative to conclude that the One Transformer Alternative is, de facto, more economical than the Proposed Project. In fact, it is SCE’s opinion that those unidentified cost increases may sufficiently offset any presumed cost reductions for the One Transformer Alternative to a point where the overall cost would be fairly similar to the Proposed Project.

In addition, considering the reduction in power flow that results from the One Transformer Alternative, it is reasonable to assume that selection of this alternative would likely result in the need for SCE and/or CAISO to sponsor a subsequent project to increase the available transformer capacity at Mesa Substation to facilitate the increased Renewable Portfolio Standard (RPS) requirements and to eliminate the North American Electric Reliability Corporation / Western Electric Coordinating Council (NERC / WECC) criteria violations that are created when evaluating the One Transformer Alternative using the 2015-2016 CAISO Transmission Plan (2016 Plan).

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18 ORA Testimony at 5, line 19.
19 SCE Opening Testimony at 26, footnote 20.
20 See supra, Section II.A.
21 SCE Opening Testimony at 6-7.
scenario, the combined overall cost would most likely be greater than the current cost estimates for the Proposed Project.

Q: If, as a result of the CPUC not evaluating the impacts in context of the CAISO 2016 Plan, additional transformer capacity were immediately triggered, what would the potential construction issues be? Could SCE simply “add another transformer if needed in the future” as asserted in ORA’s Testimony?

A: No. It appears that ORA has misinterpreted the language found in FEIR Table 5.3-1 related to the phrase “…using one 1600-MVA 500/220-kV transformer bank instead of three 1120-MVA 500/220-kV transformer banks with space for a spare transformer bank” as it relates to available transformer capacity. On May 16, 2016, SCE submitted a Data Request to the Energy Division (ED) requesting clarification of language used in the DEIR related to the One Transformer Alternative. Specifically, SCE asked the following question “1b. Re the One 1600 MVA Transformer Alternative, does the proposed 1600 MVA transformer consist of three 533 MVA single phase transformers or is it a single 3-Phase 1600 MVA transformer?” In its May 23, 2016 response, the ED replied that “The 1600-MVA transformer bank consists of three single-phase 533 MVA transformers.” In this context, SCE presumes that the “space for a spare transformer bank” actually indicates that the One Transformer Alternative recognizes the standard practice for utilities to purchase and install four single-phase transformers in situations such as this, with that fourth unit being available to serve as an emergency replacement for any one of the other three phases when needed. This configuration does not provide any additional capacity to the transformer bank, but provides a means to more rapidly return the bank to operational service when, or if, one of the other three units experiences some form of mechanical or electrical failure.

ORA Testimony at 6, lines12-15.


If the One Transformer Alternative was indeed intended to provide additional space necessary to add another full and complete transformer bank consisting of three additional single-phase units (resulting in a total of seven single-phase transformer units as compared to four units, because the spare unit would be shared between the two banks), this would require much more physical space within the proposed boundary of the substation for those additional transformers, as well as additional space associated with the 500 kV switchrack. This increase of space would result in a noticeable reduction of the ‘habitat’ acreage purported to be saved by the application of the One Transformer Alternative.

Q: If the One Transformer Alternative were constructed and SCE then needed to install an additional transformer, would SCE need to grade at least a portion of the hill to accommodate the additional equipment? What other issues would there be with this approach?

A: Yes, SCE would need to grade at least a portion of the hill, which would create the same ultimate impact to the area as well as significantly increase the overall cost of the project, since SCE would also lose construction efficiencies. SCE would need to pay to export the soil from the property instead of efficiently moving the soil from one portion of the site to another, and SCE would also incur additional costs and schedule delay due to additional design requirements.25

C. The One Transformer Alternative Is Not Environmentally Superior To SCE’s Proposed Project.

Q: Is the One Transformer Alternative environmentally superior to SCE’s Proposed Project?

A: No. SCE’s DEIR comment letter, dated June 27, 2016, discusses why the One Transformer Alternative is environmentally inferior; not superior. The Energy Division commented to that letter stating:

The One-Transformer-Bank Substation Alternative would slightly increase total exhaust emissions but would still substantially decrease fugitive dust created when compared to the proposed project. On balance, there would be a moderate reduction in air quality impacts. Thus, the One-Transformer Bank Substation remains environmentally superior to the proposed project for Air Quality.

25 See, Appendix B, Mesa 500 kV Substation Proposed Project and EIR Alternatives, Figure used for 11/4/16 All-Party meeting.
SCE’s Opening Testimony clarifies why the risk of fugitive dust for the Proposed Project actually decreases; not increases, as compared to the One Transformer Alternative. The air quality impacts of the One Transformer Alternative are greater than the air quality impacts of the Proposed Project.

The One Transformer Alternative requires approximately 16,700 more truck trips of import than the Proposed Project. There would therefore be an increased impact to air quality, traffic, and water usage for the One Transformer Alternative as compared to the Proposed Project.

Further, the footprint of the One Transformer Alternative as shown in the FEIR does not allow for construction of the future operating theater. Environmentally, there would be additional impacts for SCE to construct a temporary facility in order to relocate the existing personnel and telecommunication lines. There would be substantial cost impacts to constructing a temporary facility as well. For these reasons, and the other reasons SCE stated in its Opening Testimony and in its comments on the DEIR, the One Transformer Alternative is environmentally inferior to the Proposed Project.

Q: ORA’s Testimony states that “[d]isturbing the hill could also lead to project delay due to the need for compliance with environmental requirements…” Is this an accurate statement?

A: No. There is likely more risk for delay as a result of nesting birds with the One Transformer Alternative than there is for the Proposed Project. There is a significant amount of work outside of the existing substation footprint, because all four alternatives (e.g., the Proposed Project and the three FEIR Alternatives) require construction on, and south, of the hill. This work will be completed throughout the four-plus years of construction of the project and will include, but not be limited to: 1) temporary relocation of the existing 66 kV transmission lines and the new storm drain installation in the first year, 2) installation of new 66 kV underground duct

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\textsuperscript{26} SCE Opening Testimony at 20.

\textsuperscript{27} ORA Testimony at 5, lines 9-11.
banks and the removal of the existing 66 kV overhead lines currently running across the hill in the second and third years, 3) replacement of the existing 220 kV overhead lines currently running south of the hill in the third and fourth years, and 4) construction for the loop-in of the 500kV lines which will take place in the fourth year. Birds nesting on the hill have less of a potential to delay construction under the Proposed Project compared to the One Transformer Alternative. The difference is that the Proposed Project would allow for the vegetation on the hill to be cleared within the first year, whereas the One Transformer Alternative would require the vegetation to remain on the hill for all four years of construction of the project. By keeping the vegetation on the hill all four years, although ruderal - low quality habitat, there is a risk that common species birds could nest in the area and potentially delay the construction activities discussed above. In addition, as discussed in the opening testimony provided by SCE, importing the required soil quantities under the One Transformer Alternative would result in an approximate four month schedule impact for grading in Phase 1 and an additional four month schedule impact for Phase 3 grading. Because the elevations of the future substation are determined by more than just the MWD water line, the import of approximately 165,000 cubic yards of soil would be required for the One Transformer Alternative. The cumulative grading impacts for constructing the One Transformer Alternative would delay the project completion date by approximately 8 months. This delay, combined with the risk of nesting birds for an additional three nesting seasons, means that the One Transformer Alternative has far more delays (both actual and potential) than the Proposed Project, not less as ORA suggests.

D. **The Environmental Sensitivity of the Hill to be Preserved in the One Transformer Alternative is Overstated in the FEIR.**

Q: Will the One Transformer Alternative substantially reduce impacts to biological resources?

A: No. The Proposed Project results in less than significant impacts to biological resources, and although biological impacts would be reduced under the One Transformer Alternative, the biological impacts would not be *substantially* reduced. The area referred to as the “hill” is not
classified as coastal sage scrub (CSS) habitat, which is the typical habit for California
gnatcatcher. Instead, the hill consists primarily of annual non-native plants with scattered non-
native/ornamental shrubs. Jim Rocks, a California gnatcatcher expert, states the following:

The 9.5 acres of ruderal vegetation adjacent to the CSS on the substation site provides
some value to the coastal California gnatcatcher (CAGN; Polioptila californica
californica) for foraging and potential nesting. However, because of its ephemeral and
unpredictable presence on the site, ruderal vegetation does not provide biologically
equivalent habitat value for CAGN as CSS. The ruderal vegetation onsite could not
support CAGN without the presence of the adjacent CSS. The persistence of CAGN
onsite is attributable to the presence of CSS that provides the primary constituent
elements for nesting and foraging... Beyers and Wirtz (1997) proposed that
ruderal, non-native vegetation does not support a sufficient insect fauna and that there
are probably differences in insect availability among shrub species as well, which
may explain CAGN’s shrub preference. Due to its ephemeral nature, ruderal
vegetation does not provide consistent foraging opportunities throughout the year.

Q: Have gnatcatchers successfully nested on the hill in the past several years?
A: Gnatcatchers have attempted to nest on the hill once in five years of study and were not
successful. Indeed, the majority of nesting, both successful and unsuccessful, has been
concentrated in closer proximity to the coastal sage scrub area to the south which is unaffected
by the Proposed Project. Jim Rocks, a California gnatcatcher expert, states “[d]uring the 2015
protocol surveys for CAGN, the Chinese caps and other ruderal plant species on site were very
dry and would have been unable to support or conceal a CAGN nest.” He goes on to say:

28 Appendix C, Coastal California Gnatcatcher Nest Locations, Mesa 500 kV Substation Project.

29 Rocks, J. and L. Ripma. 2016. Proposed Southern California Edison Mesa 500 kilovolt Substation
Project, Los Angeles County, California. Memo to Ms. Lori Rangel, Environmental Project Manager,
Southern California Edison, dated November 22, 2016. Page 1. See Appendix D.

30 Beyers, J.L. and W.O. Wirtz II. 1995. Vegetative characteristics of Coastal Sage Scrub sites used by
California Gnatcatchers: Implication for management in a fire-prone ecosystem. Proceedings-Fire
Effects on Rare and Endangered Species and Habitats Conference. Coeur d’Alene Idaho.

31 Rocks, J. and L. Ripma. 2016. Proposed Southern California Edison Mesa 500 kilovolt Substation
Project, Los Angeles County, California. Memo to Ms. Lori Rangel, Environmental Project Manager,
Southern California Edison, dated November 22, 2016. Pages 2-3. See Appendix D.

32 Rocks, J. and L. Ripma. 2016. Proposed Southern California Edison Mesa 500 kilovolt Substation
Project, Los Angeles County, California. Memo to Ms. Lori Rangel, Environmental Project Manager,
Southern California Edison, dated November 22, 2016. Page 2. See Appendix D.
Ruderal, weedy vegetation provides inconsistent nesting structure for CAGN and ruderal vegetation without CSS nearby cannot support CAGN nesting. Furthermore, due to the ephemeral nature and rapid die-back of these short-lived plants, the presence of ruderal vegetation is unreliable for providing concealment of nests to reduce predation. For these reasons, the ruderal vegetation is much less suitable for nesting and foraging than the CSS onsite.

Therefore, while biological resources are present on the hill, the environmental sensitivity is overstated in the FEIR.

Q: What is the quality of the gnatcatcher foraging habitat found on the hill to be preserved by the One Transformer Alternative?
A: California Gnatcatchers use the hill primarily for foraging and have tried to nest there, unsuccessfully, only once in five years. Jim Rocks, a California gnatcatcher expert, states the following:

The ruderal vegetation in the 9.5 acres likely provides some foraging habitat, but it is inconsistent and lower-quality than adjacent CSS. The CAGN preys upon arthropods, including insects such as leafhoppers and planthoppers (Homoptera) and spiders commonly found in CSS plant communities (Burger et al. 1999). Beyers and Wirtz (1997) proposed that ruderal, non-native vegetation does not support a sufficient insect fauna and that there are probably differences in insect availability among shrub species as well, which may explain CAGN’s shrub preference. Due to its ephemeral nature, ruderal vegetation does not provide consistent foraging opportunities throughout the year.

Therefore, the hill is low quality habitat and provides lower value than the coastal sage scrub area to the south, which is unaffected by SCE’s Proposed Project.

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33 Ibid.
Appendix A

EMAIL FROM MWD to SCE, 11/28/2016
Hi Scott,

Prior to Metropolitan designing the proposed relocation of the Middle Feeder through the SCE Substation Property, Metropolitan had to wait until the conceptual grading plan was developed by SCE for the site. Once the conceptual grading plan was completed, Metropolitan commenced the design for this pipeline relocation based on the future ground elevations. It is a Metropolitan requirement that water pipelines have at least 10 feet of cover for purposes of infrastructure protection and to facilitate utility crossings. Metropolitan has worked for more than eighteen months with Southern California Edison on the design of the relocated sections of pipe. Any changes to the proposed site elevations at this stage would require a redo of the plans and specifications for the Middle Feeder Relocation.

At a minimum, a change in elevation would require a redesign of the pipeline profile to meet the 10 feet of cover requirement. Additional structures might also be required. Any low point may need a blowoff structure to dewater the line during regular pipe maintenance and replacement shutdowns. Any high point may require an air release/vacuum valve structure.

Regards Kieran

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Appendix B

MESA 500 KV SUBSTATION PROPOSED PROJECT AND EIR ALTERNATIVES
Appendix C

COASTAL CALIFORNIA GNATCATCHER NEST LOCATIONS
Figure 8: Coastal California Gnatcatcher Nest Locations
Mesa 500 kV Substation Project

- Coastal Sage Scrub (CSS) – Impacted
- Coastal Sage Scrub (CSS) – Restricted Use Area (No Impact)
- Disturbed/Developed (DEV)
- Ephemeral Drainage (ED)
- Mulefat Scrub (MFS)
- Non-Native Woodland (NNW)
- Ruderal (RUD)

Survey Area/Proposed Project Area
Action Area
Restricted Use Area (No Impacts)
Existing Substation
Coastal California Gnatcatcher Occupied Breeding Habitat
Coastal California Gnatcatcher Nests

Survey Years:
- 2011
- 2012
- 2013
- 2014
- 2015

Breeding Success:
- Successful
- Unsuccessful

Vegetation Communities:
- Coastal Sage Scrub (CSS) – Impacted
- Coastal Sage Scrub (CSS) – Restricted Use Area (No Impact)
- Disturbed/Developed (DEV)
- Ephemeral Drainage (ED)
- Mulefat Scrub (MFS)
- Non-Native Woodland (NNW)
- Ruderal (RUD)

Survey Area/Proposed Project Area
Action Area
Restricted Use Area (No Impacts)
Existing Substation
Coastal California Gnatcatcher Occupied Breeding Habitat
Coastal California Gnatcatcher Nests

Survey Years:
- 2011
- 2012
- 2013
- 2014
- 2015

Breeding Success:
- Successful
- Unsuccessful

Vegetation Communities:
- Coastal Sage Scrub (CSS) – Impacted
- Coastal Sage Scrub (CSS) – Restricted Use Area (No Impact)
- Disturbed/Developed (DEV)
- Ephemeral Drainage (ED)
- Mulefat Scrub (MFS)
- Non-Native Woodland (NNW)
- Ruderal (RUD)
MEMORANDUM

To: Ms. Lori Rangel, Environmental Project Manager, Southern California Edison
From: Jim Rocks and Lee Ripma, Rocks Biological Consulting
Date: November 22, 2016
Subject: Proposed Southern California Edison Mesa 500 kilovolt Substation Project, Los Angeles County, California

The purpose of this memo is to discuss the ruderal and coastal sage scrub (CSS) vegetation within the proposed alternatives within the substation site for the proposed Southern California Edison Mesa 500 kilovolt Substation Project, Los Angeles County, California.

The 9.5 acres of ruderal vegetation adjacent to the CSS on the substation site provides some value to the coastal California gnatcatcher (CAGN; Polioptila californica californica) for foraging and potential nesting. However, because of its ephemeral and unpredictable presence on the site, ruderal vegetation does not provide biologically equivalent habitat value for CAGN as CSS. The ruderal vegetation onsite could not support CAGN without the presence of the adjacent CSS. The persistence of CAGN onsite is attributable to the presence of CSS that provides the primary constituent elements for nesting and foraging.

There are two primary reasons the 9.5 acres of ruderal habitat onsite provide limited value to CAGN: 1) the unreliable presence of the ruderal vegetation for nesting and foraging from year to year; and 2) CAGN’s documented preference for CSS shrub species for both nesting and foraging.
Ruderal vegetation is typically found in disturbed and degraded areas and consists of weedy, short-lived, non-native plant species. The ruderal vegetation onsite is present due to a long history of disturbance from ongoing power line maintenance, dirt roads, and nursery operations. The ruderal vegetation in the 9.5 acres is comprised primarily of dense patches of short-pod mustard (*Hirschfeldia incana*), Chinese caps (*Euphorbia crenulata*), and Russian thistle (*Salsola tragus*). Short-lived plant species such as these are dependent upon yearly precipitation for growth; a year with low precipitation can result in no or low annual cover and a year of heavy precipitation may result in dense annual cover. In addition, timing of precipitation and local climatic conditions can result in a different suite of ruderal plant species from year to year. For example, non-native mustards and annual grasses could dominate in one year with thistles and other weeds the next.

Ruderal, weedy vegetation provides inconsistent nesting structure for CAGN and ruderal vegetation without CSS nearby cannot support CAGN nesting. Furthermore, due to the ephemeral nature and rapid die-back of these short-lived plants, the presence of ruderal vegetation is unreliable for providing concealment of nests to reduce predation. For these reasons, the ruderal vegetation is much less suitable for nesting and foraging than the CSS onsite. During the 2015 protocol surveys for CAGN, the Chinese caps and other ruderal plant species on site were very dry and would have been unable to support or conceal a CAGN nest. In 2015 both pairs of CAGN nested in the CSS shrubs on site, one in California sagebrush (*Artemisia californica*) and one in California buckwheat (*Eriogonum fasciculatum*).

The ruderal vegetation in the 9.5 acres likely provides some foraging habitat, but it is inconsistent and lower-quality than adjacent CSS. The CAGN preys upon arthropods, including insects such as leafhoppers and planthoppers (Homoptera) and spiders commonly found in CSS plant communities (Burger et al. 1999)\(^1\). Beyers and Wirtz (1997) proposed that ruderal, non-native vegetation does not support a sufficient insect fauna and that there are probably differences in insect availability among shrub

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species as well, which may explain CAGN’s shrub preference\(^2\). Due to its ephemeral nature, ruderal vegetation does not provide consistent foraging opportunities throughout the year.

Q. Please state your name and business address for the record.
A. My name is Garry Chinn, and my business address is 3 Innovation Way, Pomona, CA, 91768.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.
A. I am an Engineering Manager of the Transmission & Interconnection Planning Group within Transmission and Distribution (T&D). In this position, I am responsible for leading a group of power system engineers in assessing the electric system and developing transmission facilities to ensure the performance of SCE’s bulk power system is in compliance with NERC Reliability Standards.

Q. Briefly describe your educational and professional background.
A. In 1991, I received a Bachelor of Science degree in electrical & electronic engineering from California State University, Sacramento. I also earned a Master of Science degree in electrical engineering from the University of Southern California in 1994. I became a registered professional electrical engineer with the State of California in 1995. Since 1991, I have held positions related to the planning of the transmission system with the Los Angeles Department of Water & Power, Metropolitan Water District of Southern California and SCE. I have over ten years of service with SCE, all with the Transmission & Interconnection Planning Group.

Q. What is the purpose of your testimony in this proceeding?
A. The purpose of my testimony in this proceeding is to sponsor Section II.A in SCE’s Rebuttal Testimony for the Mesa 500 kV Substation Project, as identified in the Table of Contents.
Q. Was this material prepared by you or under your supervision?
A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?
A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?
A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?
A. Yes, it does.
Q. Please state your name and business address for the record.
A. My name is Scott R. Lacy, and my business address is 2 Innovation Way, Pomona, CA, 91768.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.
A. Presently, I am a Project Engineer for transmission and substation projects within SCE’s Major Projects Organization. As Project Engineer, I have the overall responsibility and accountability for the execution of engineering and design activities for the Project, ensuring that all activities comply with corporate policies and procedures, as well as with any permitting and licensing requirements.

Q. Briefly describe your educational and professional background.
A. I received a Bachelor of Science degree in General Engineering from the University of Redlands in 1990. I received a Certificate in Project Management from the University of California, Irvine, in 2007. I hold a Professional Engineering (Electrical) License in the State of California. I joined SCE in 1990 as a regional engineer in the Distribution Engineering Department. From that time until 2006, I held various jobs within that department, including supervising regional and staff engineers, providing engineering support to various organizations involved with the design and construction of the distribution system and identifying distribution system upgrades necessary to maintain capacity and reliability. Prior to my current position, I was the Senior Distribution Field Engineer for SCE’s Eastern Zone. I also briefly served as the Supervisor of the Radio/Television Interference (RTVI) and Power Quality (PQ) groups within the Distribution
Engineering organization. In that capacity, I oversaw the response to
customer complaints with electric service and proposed changes to SCE’s
distribution system facilities and construction standards in order to mitigate
future power quality issues. I also represented SCE at various committees
and working groups sponsored by the California Energy Commission related
to Distributed Generation interconnection issues.

I began my current position as a Project Engineer in June 2006, and have
served in that role for various recently completed capital improvement
projects including the El Casco System Project, Rancho Vista Substation
Project, and the Devers-Colorado River (DCR, formerly known as Devers-Palo
Verde No. 2 (DPV2)) Project, as well as currently working on the West of
Devers (WOD) Upgrade Project.

Q. What is the purpose of your testimony in this proceeding?
A. The purpose of my testimony in this proceeding is to sponsor Section II.B in
SCE’s Rebuttal Testimony for the Mesa 500 kV Substation Project, as
identified in the Table of Contents.

Q. Was this material prepared by you or under your supervision?
A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?
A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it
represent your best judgment?
A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?
A. Yes, it does.
QUALIFICATIONS AND PREPARED TESTIMONY
OF JASON PENDLETON

Q. Please state your name and business address for the record.
A. My name is Jason Pendleton, and my business address is 3 Innovation Way, Pomona, CA, 91768.

Q. Briefly describe your present responsibilities at the Southern California Edison Company.
A. Currently, I am a Construction Project Manager within SCE’s Substation Construction and Maintenance Organization. As Construction Project Manager, I have the overall responsibility for the execution of construction activities within the substation. My responsibilities include managing the schedule(s) and budget(s) for the construction phase of various projects, ensuring work is completed according to plans and specifications, and in compliance with licensing requirements. Given the complex nature of the Mesa 500 kV Substation Project, I have been responsible for developing the construction sequencing for the project and providing constructability review(s) and feedback for the preliminary engineering completed thus far.

Q. Briefly describe your educational and professional background.
A. I attended school at Cal State San Bernardino from 1998 to 1999 and the University of Phoenix from 2008 to 2009. I have received a certificate (not current) from ICC (previously ICBO) for Deputy Inspection of Reinforced Concrete and Structural Masonry. I received a certificate of testing concrete (not current) from the American Concrete Institute (ACI). I received over 30 certifications for material testing from the California Department of Transportation (Cal-Trans).

I worked for Converse Consultants and Hilltop Geotechnical from 1998 to 2004 as a lab and field technician where I was responsible for testing,
monitoring and quality assurance of construction projects ranging from residential communities and high-rise buildings in the private sector to public works projects like hospitals and schools.

I was employed by Pulte Homes in 2004 as a Project Superintendent and Area Manager to oversee the Land Development of several master-planned communities including Sun City Shadow Hills; a 3,400 home community with two 18-hole golf courses, Recreation Center, and Clubhouse.

In 2007 I was hired as the Vice President for The Masonry Group to oversee project management, Estimating, and Sales of its corporate location in Riverside, Ca. Annual revenue was in excess of $250 million.

In 2011 I worked as a contingent employee for SCE to construct Red Bluff Substation; a new 500-220kV substation as part of the DCR capital improvement project. I joined SCE in 2013 in my current role where I have been involved in several hundred projects including several licensing projects; Triton Substation Project, Fogarty Substation Project, and Lakeview Substation Project.

Q. What is the purpose of your testimony in this proceeding?
A. The purpose of my testimony in this proceeding is to sponsor section II. C in SCE’s Rebuttal Testimony for the Mesa 500 kV Substation Project, as identified in the Table of Contents.

Q. Was this material prepared by you or under your supervision?
A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?
A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?
A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?
A. Yes, it does.
SOUTHERN CALIFORNIA EDISON COMPANY
QUALIFICATIONS AND PREPARED TESTIMONY
OF ROGER OVERSTREET

Q. Please state your name and business address for the record.
A. My name is Roger Overstreet, and my business address 6040 Irwindale Avenue, Suite A, Irwindale California 91702

Q. Briefly describe your present responsibilities at the Southern California Edison Company.
A. I am the biology program manager for Southern California Edison responsible for supporting compliance with biological resources regulations such as the state and federal Endangered Species Acts, California Fish and Game Code, the Migratory Bird Treaty Act, and the Bald and Golden Eagle Protection Act. I help to coordinate the work of the other SCE biology subject matter experts in ornithology, herpetology, and botany and provide support to the environmental teams working on SCE project and O&M activities. I have worked for SCE for 9 years and have supported the licensing, permitting, and construction of licensed and exempt capital projects as the assigned project biologist or biology group manager.

Q. Briefly describe your educational and professional background.
A. I have a B.S. in Biological Science and post-graduate studies from Cal Poly San Luis Obispo. I have worked in the environmental compliance area for approximately 12 years supporting electric utility projects and operations and maintenance activities. I have worked as a biologist conducting surveys, reviewing projects for potential resource impacts, coordinating environmental contractors, leading biological permitting efforts, developing environmental document sections, reviewing and commenting on regulatory changes, engaging wildlife and land management agencies, and providing strategic guidance to SCE biologists and project teams.
Q. What is the purpose of your testimony in this proceeding?
A. The purpose of my testimony in this proceeding is to sponsor section II.D in SCE’s Rebuttal Testimony for the Mesa 500 kV Substation Project, as identified in the Table of Contents thereto.

Q. Was this material prepared by you or under your supervision?
A. Yes, it was.

Q. Insofar as this material is factual in nature, do you believe it to be correct?
A. Yes, I do.

Q. Insofar as this material is in the nature of opinion or judgment, does it represent your best judgment?
A. Yes, it does.

Q. Does this conclude your qualifications and prepared testimony?
A. Yes, it does.