Decision 20-08-032 August 27, 2020

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Application of SOUTHERN CALIFORNIA EDISON COMPANY (U 338-E) for a Certificate of Public Convenience and Necessity: Eldorado-Lugo-Mohave Series Capacitor Project.	Application 18-05-007

DECISION GRANTING CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE ELDORADO-LUGO-MOHAVE SERIES CAPACITOR PROJECT

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DECISION GRANTING CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY FOR THE ELDORADO-LUGO-MOHAVE SERIES CAPACITOR PROJECT

Summary

This decision grants Southern California Edison Company a certificate of public convenience and necessity for the proposed Eldorado-Lugo-Mohave Series Capacitor Project (ELM Project). The Commission is the lead agency for the ELM Project pursuant to the California Environmental Quality Act (CEQA). The Commission finds that the Mitigated Negative Declaration prepared for the ELM Project meets the CEQA requirements and adopts the mitigation measures identified therein, as conditions of our approval.

This proceeding is closed.

1. Proposed Project

Southern California Edison Company (SCE) seeks a certificate of public convenience and necessity (CPCN) for its proposed Eldorado-Lugo-Mohave Series Capacitor Project (ELM Project) in San Bernardino County. The purpose of the ELM Project is to increase the capacity of the existing transmission lines (the Eldorado-Lugo 500 kilovolt (kV) transmission line, the Lugo-Mohave 500 kV transmission line, and the Eldorado-Mohave 500kV transmission line (together, the ELM lines). In turn, this increased capacity would improve grid reliability while relieving deliverability constraints so as to help enable the integration of renewable energy generation in accordance with the state's Renewables Portfolio Standard (RPS) requirements.

The ELM Project would involve:

- Construction of two new 500 kV mid-line series capacitors (*i.e.*, the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor) and associated equipment;
- Relocation, replacement, or modification of existing transmission, subtransmission, and distribution facilities at approximately 12 locations along the Eldorado-Lugo, Eldorado-Mohave, and Lugo-Mohave 500 kV Transmission Lines to address 14 potential overhead clearance discrepancies;
- Minor grading at two overhead clearance discrepancy locations along the Lugo-Mohave 500 kV Transmission Line;
- Extension or rerouting approximately two miles of overhead and approximately 700 feet of underground 12 kV distribution circuits to provide station light and power to the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor (the distribution poles would support the overhead telecommunication facilities on the same route);
- Installation of distribution facilities to provide station light and power to three proposed fiber optic repeater sites;
- Installation of approximately 232 miles of optical ground-wire (OPGW) (173 miles on the Lugo-Mohave 500 kV Transmission Line, and approximately 59 miles on the Eldorado-Mohave 500 kV Transmission Line), and approximately three miles of underground telecommunications facilities in the vicinity of Mohave Substation;
- Modification of the ground wire peak of existing suspension towers used as splice locations for the OPGW work and minor modifications to the steel in the tower body of some of these towers;

- Installation of approximately two miles of overhead and approximately 500 feet of underground telecommunications facilities to connect the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor to SCE's existing system as one communication path (the telecommunications facilities would share the same poles with overhead distribution);
- Installation of approximately two miles of underground telecommunications facilities to connect the proposed Newberry Springs Series Capacitor and Ludlow Series Capacitor to SCE's existing system as a second communication path;
- Installation of underground telecommunications facilities from existing transmission structures to three fiber optic repeater sites —Barstow, Kelbaker, and Lanfair —within the Lugo-Mohave 500 kV Transmission Line right-of-way;
- Installation of approximately 1,000 feet of underground telecommunications facilities within the existing Lugo, Mohave, and Eldorado Substations;
- Performance of following work within the Lugo Substation: (a) modifications of the existing series capacitors; (b) upgrading of terminal equipment; and (c) removal of certain steel poles and, with new steel poles on the Eldorado-Lugo and Lugo-Mohave 500 kV Transmission Lines;
- Performance of following work within the Eldorado Substation: (a) modifications of the existing series capacitors; and (b) upgrading of the terminal equipment;
- Replacement of existing series capacitors on the Lugo-Mohave 500 kV Transmission Line and installation of new terminal equipment on the Eldorado-Mohave and Lugo-Mohave 500 kV Transmission Lines at the existing Mohave Substation; and

- Installation of mitigation such as cathodic protection and grounding, if needed, as a result of any induced alternating current effects the increased power flow might have on nearby gas transmission pipelines.[1]

2. Procedural Background

On May 2, 2018, SCE filed an Application for a Permit to Construct (PTC) its ELM Project (Application.) On June 1, 2018, the Application was timely protested by the California Public Advocates Office (Cal Advocates). On August 24, 2018, a first Prehearing Conference (PHC) was held, at which time there was discussion as to the appropriate form of application for the ELM Project pursuant to General Order (G.O.) 131-D.

On September 7, 2018, by Administrative Law Judge (ALJ) Ruling, the parties were directed to file briefs regarding whether, under G.O. 131-D, the ELM Project required an application for a PTC or a CPCN. Parties filed briefs in response to that ALJ Ruling. Based thereon, on January 9, 2019, the assigned Commissioner[2] issued a Ruling ordering SCE to file an Amended Application seeking a CPCN for the ELM Project.

On April 19, 2019, SCE filed its Amended Application seeking a CPCN for the ELM Project (Amended Application). Thereafter, Cal Advocates timely filed a new protest. Cal Advocates' protest essentially argued that the cost and need for the ELM Project were not justified.

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[1] SCE's Amended Application at 4-5 and Exhibit SCE-3, the Final Mitigated Negative Declaration (MND). The MND is also found online at https://www.cpuc.ca.gov/environment/info/aspen/elm/toc-fmnd.htm.

[2] Former Commission President Michael Picker was then the assigned Commissioner.

On July 11, 2019, a second PHC was held. At this PHC and soon thereafter, the California Independent System Operator (CAISO), Consolidated Edison Development, Inc. (CED), EDF Renewable Energy, Inc. (EDF), First Solar, Inc. (First Solar), Gridliance West, Inc. (Gridliance), Natural Resources Defense Council (NRDC), and NextEra Energy Resources, LLC (NEER) were granted party status. These parties support the Amended Application and the ELM Project. Several of these parties are developers of large-scale solar plants that they contend require the ELM Project to enable their solar plants to proceed.

Also at the PHC, Wild Tree Foundation (Wild Tree) was granted party status. Wild Tree opposes the ELM Project, echoing some of Cal Advocates' arguments, and adding that the ELM Project would cause environmental harm.

At the July 11, 2019, PHC, the Commission's Energy Division representative reported that the California Environmental Quality Act (CEQA) review process for the ELM Project was nearly completed and that the anticipated result of the CEQA review process would be a Mitigated Negative Declaration (MND). On August 12, 2019, the Draft MND was released, and in November 2019, the Final MND was released.

An evidentiary hearing was conducted on December 3, 2019. The proceeding was submitted on January 31, 2020, upon the filing of reply briefs.

3. Scope of Issues

Pursuant to Public Utility (Pub. Util.) Code § 1001 et seq., SCE may not proceed with its proposed project absent certification by the Commission that the present or future public convenience and necessity require it, and the Commission shall determine the maximum cost of the approved project. As a

basis for granting such certification, the Commission also must consider community values, recreational and park areas, historical and aesthetic values, and the influence on the environment. (Pub. Util. Code § 1002(a).)

CEQA requires the lead agency (the Commission in this case) to conduct a review to identify environmental impacts of the project, and ways to avoid or reduce environmental damage, for consideration in the determination as to whether to approve the project or a project alternative. Pursuant to G.O. 131-D, the Commission reviewed the ELM Project's effect on the environment through the Commission's Energy Division' CEQA review process.

The Commission's Energy Division, which conducted the required CEQA environmental review, issued a draft MND for the ELM Project on August 13, 2019; and on November 2019, the Final MND was released. An MND is a written statement prepared for a proposed project when the initial study has identified potentially significant effects on the environment, but revisions to the proposed plan and agreed to by the applicant would avoid or mitigate the project impacts so that they would have less than significant effects on the environment. The CEQA process also requires that, prior to approving the project or a project alternative, the MND must be reviewed, considered, and confirmed to have been completed in compliance with CEQA prior to approving the proposed project.

In addition, pursuant to G.O. 131-D and Decision (D.) 06-01-042, the Commission will consider whether the project design is in compliance with the Commission's policies governing the mitigation of electromagnetic field (EMF) effects using low-cost and no-cost measures.

Accordingly, the issues identified in the Scoping Memo are as follows:

1. Does the Amended Application comply with all applicable statutory and procedural requirements?
2. Does the ELM Project serve a present or future convenience and necessity?
3. Is there no substantial evidence that the ELM Project will have a significant effect on the environment?
4. Was the MND completed in compliance with CEQA, did the Commission review and consider the MND prior to approving the ELM Project, and does the MND reflect the Commission's independent analysis and judgment?
5. Is the ELM Project designed in compliance with the Commission's policies governing the mitigation of EMF effects using low-cost and no-cost measures?
6. Does the ELM Project enhance safety?
7. What is the maximum cost of the ELM Project?

4. Discussion

4.1. (Issue 1) The Amended Application Complies with All Applicable Procedural and Statutory Requirements

We find that SCE's Amended Application correctly identifies the controlling Public Utilities Code sections that SCE must comply with to obtain a CPCN for the ELM Project. No party contends that the Amended Application fails to seek a CPCN in the appropriate manner, nor does any party contend that the Amended Application fails to cite to the primary statutes required for review.

Therefore, it is determined that the Amended Application complies with all relevant procedural and statutory requirements and may be reviewed on its merits. CEQA compliance is addressed separately in Section 6 of this decision.

4.2. (Issue 2) The ELM Project Serves Present and Future Convenience and Necessity

4.2.1. Functional Increase in Line Capacity

The ELM Project would provide a significant functional increase in the ELM lines' capacities to provide power. That increase in capacity would enable CAISO to issue Full Capacity Deliverability Status (FCDS) to more renewable energy generators seeking to interconnect and supply California's retail customers through SCE's transmission system. It would also allow additional renewable generators to sign Interconnection Agreements and proceed with their projects, which support the state's ability to comply with RPS legislation.[3]

By reducing the impedance of the lines, the series capacitors would efficiently increase the amount of power that could be transferred through the ELM transmission lines.[4] The ELM Project would accomplish this without requiring significant changes in the existing footprint of the transmission lines.

Here, CAISO identified the need for series capacitors, which are the substantial components of the ELM Project, in its 2012-2013 Transportation Project Plan (TPP) and in its 2013-2014 TPP, to deliver power from generation identified in the Commission's RPS portfolios.

The following table[5] illustrates the existing set of line capacities, the ELM Project increase in line capacities, and the resultant increased total line capacities:

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[3] The Commission's most recent RPS portfolio continues to require the ELM Project. Exhibit CAISO-1 at 14.

[4] Exhibit SCE-1 at 10-11.

[5] This Table is found in SCE's Proponent' Environmental Assessment (PEA), submitted into the record as part of its Application, and the Table is essentially repeated in the MND Section 4.2.1.

Table 1. Proposed Operating Capacity (MVA) and Capacity Entitlement Increase (MW)

	Baseline	Proposed ELM Project	Increase in Capacity Entitlement (SCE's MW Ownership)
Eldorado-Lugo 500 kV	1,645 MVA	2,858 MVA	+1,213 MW
Lugo-Mohave 500 kV	2,078 MVA	2,858 MVA	+780 MW
Eldorado-Mohave 500 kV	1,580 MVA (1)	2,598 MVA	+1,018 MW (2)

1 – For Eldorado-Mohave: allocated between SCE, Los Angeles Department of Water and Power (LADWP) and Nevada Energy (NVE).
2 – For Eldorado-Mohave: the entire ELM Project-related increase in capacity entitlement (MW ownership) would be allocated to SCE.
Source: SCE April 2018 PEA, Section 3.4.1. Revised by SCE in comments to CPUC (12/13/2018), as shown in MND Section 4.2.1, ELM
Project Description.

As reflected in the above table, the ELM Project would improve the efficiency of the lines and optimize their capacities. The resulting projected increase in total line capacities is 57 percent.

4.2.2. Reliance of Renewable Energy Generators on the ELM Project

CAISO categorizes the ELM Project's transmission upgrades as a public-policy driven solution necessary to integrate renewable resources so as to enable the State to satisfy its RPS goals.[6] This original CAISO need assessment dates back to its 2012-2013 TPP. CAISO has subsequently re-studied the need for the ELM Project and confirmed its need for this same reason.[7]

> CAISO's authority to make determinations regarding transmission solutions to meet the Commission-developed RPS portfolios comes from the Commission. The Commission has directed CAISO to develop transmission solutions to facilitate deliverability for renewable energy resources identified in the Commission's

[6] Exhibit CAISO-03 at 10-11.

[7] Exhibit CAISO-01 at 6-8.

> renewable portfolios, and the Commission entitles CAISO to rely upon the RPS portfolios to do so. This is done pursuant to the May 13, 2010 RPS Memorandum of Understanding between the Commission and CAISO.[8]

For purposes of the ELM Project, CAISO determined that there is a Desert Area deliverability constraint that limits deliverability from several Competitive Renewable Energy Zones (CREZ) in the Desert Area where renewable resource projects were already under development, additional renewable energy projects were expected, and such projects were identified to be FCDS under the Commission's RPS portfolios.[9] CAISO has assessed that the transmission lines at issue would suffer "thermal overloads" without the ELM Project.[10]

The 2012-2013 and 2013-2014 CAISO TPPs were premised on enabling the Commission's RPS portfolio for the Desert Area's renewable energy resources to be fully deliverable (i.e., obtain FCDS), and further, all subsequent CAISO TPP analysis was premised upon that prior TPP assumption of these transmission upgrades.[11]

In its 2019-2020 TPP, CAISO reconfirmed the need for the ELM Project. CAISO expressly determined that the existing transmission capacity is still

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[8] CAISO Opening Brief at 2.

[9] Exhibit CAISO-3 at 8 and 10-11; SCE-1 at 10 and 21 and A11 (specifically identifying CREZ deliverability constraints to include Mountain Pass and El Dorado, and Riverside and Palm Springs).

[10] Exhibit CAISO-01 at 7.

[11] Exhibit SCE-1 at 21 and 23; and Exhibit SCE-1 at A11.

inadequate to support the requested FCDS for the resources identified in the latest Commission-developed RPS portfolio.[12]

SCE has a Transmission Control Agreement with CAISO, and Section 24.633 of the CAISO Tariff requires SCE to make a good faith effort to seek approval for the construction of policy-driven transmission projects identified by the CAISO as necessary to support the state's RPS goals.[13] SCE contends that the ELM Project would fulfill its obligation to provide the additional ELM line capacity as deemed necessary by the Commission, the California Energy Commission (CEC), and CAISO.[14] Importantly, in net effect, SCE states it is obligated to pursue transmission solutions that CAISO has identified, and those solutions need not be intended solely for SCE's own RPS needs.[15]

The additional capacity offered by the ELM Project would be used by renewable resource projects that were already under development. CAISO noted that as of October 2019, there were 485 megawatt (MW) of renewable generation projects that were online and awaiting completion of the ELM Project in order to achieve their FCDS. In addition, CAISO also noted that there are another 3,715

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[12] Exhibit CAISO-1 at 6-8.

[13] Exhibit SCE-2 at 24.

[14] Exhibit SCE-2 at 22.

[15] While recent Commission determination (D.19-04-040) and CEC determination (2019 CEC RPS annual report) find that SCE may not require additional renewable energy procurement to meet its 2030 RPS goals, small and jurisdictional utilities, Community Choice Aggregators, and Energy Service Providers will need to procure additional renewable energy resources to meet their 2030 RPS goals. Exhibit WTF-4 at 7-8.

MW of active renewable generation projects in the CAISO interconnection queue with executed generation Interconnection Agreements that require the ELM Project in order to achieve deliverability.[16]

In total, CAISO identified approximately 10,900 MW of renewable resources in its interconnection queue that depend upon the ELM Project to achieve deliverability.[17] The interconnection queue does not necessarily prove that all this generation will be built by the developers who propose it.[18] However, this extensive interconnection queue demonstrates that there exists substantial developer interest even beyond that which is identified and indicated in the Commission's RPS portfolio.

CED, EDF, Gridliance, and NEER provided testimony in support of the Amended Application. CED, EDF, and NEER, each a solar project developer, filed briefs in support of the Amended Application. NEER states that the ELM Project is needed to achieve FCDS for four large solar projects being developed by its subsidiaries, and that achieving FCDS is necessary for those subsidiaries to meet their power purchase agreements and to ensure the viability of those projects.[19] EDF states that its solar project cannot achieve FCDS without the ELM Project and that the failure to achieve FCDS will cause it financial harm in Resource Adequacy (RA) (discussed below) deficiency payments for every

[16] Exhibit CAISO-1 at 11.

[17] Exhibit CAISO-1 at 11.

[18] CAISO Opening Brief at 4.

[19] Exhibit NEER-1 at 3.

month beyond December 2020 that it does not have FCDS.[20] CED's testimony states that it currently has five operating solar projects whose long-term viability status is dependent upon the ELM Project, because the projects all have long-term power purchase agreements; these projects have been allocated only interim or partial deliverability status by CAISO because they require the ELM Project to achieve FCDS.[21]

CAISO presented a table that identified CAISO's active interconnection requests that are dependent on the ELM Project for FCDS. That table contains a total of 33 renewable resource projects. CAISO also notes that the proposed points of interconnection for these projects span across facilities owned by SCE, San Diego Gas & Electric Company, Valley Electrical Association, Inc., Gridliance West, Inc., and DRC Transmission, LLC.[22]

4.2.3. ELM Project Impact on Resource Adequacy

Under the statutory framework set out in Pub. Util. Code § 380 et. seq., the Commission has established its RA program. The program has two goals. First, it provides sufficient information and resources to enable CAISO to ensure the safe and reliable operation of the grid in real time. Second, it is designed to provide appropriate incentives for the siting and construction of new resources needed for reliability in the future. The Commission sets forth the RA

[20] Exhibit EDF-1 at 2-3.

[21] Exhibit CED-1 at 8-10. We note that CED's power off-takers include not just SCE but also Pacific Gas & Electric Company and Western Area Power Administration.

[22] Exhibit CAISO-1 at 11-13.

obligations for all Load Serving Entities (LSEs) (including utilities, Energy Service Providers, and Community Choice Aggregators).

CAISO notes that its TPP is developed for three main purposes: reliability; public policy; and economics.[23] Regarding reliability, the TPP evaluates the grid by assessing whether enough fully-deliverable generating resources are located in the right areas to deliver electricity to the CAISO grid under peak load conditions.[24] CAISO is cognizant of and uses the Commission's RA as a critical measure of grid reliability for delivery of electricity.[25]

RA ensures that the grid operates without interruption and does not fail under peak load conditions due either to insufficient energy to meet demand and/or insufficient capacity to bring available energy from generator to load. Generators can be incorporated into an LSE's RA -- *i.e.*, the LSE is entitled to rely upon the deliverability of the generators' supply of electricity -- as long as the generator is able to deliver that resource under peak load conditions. That RA deliverability is confirmed by the generator's receipt from CAISO of its FCDS.[26]

As noted above, California's clean energy policies require retail sellers of electricity, such as SCE and other LSEs, to source more and more of their generation from renewable resources. It necessarily follows that these renewable

[23] Exhibit CAISO-3 at 3.

[24] *Ibid*.

[25] Exhibit CAISO-1 at 13.

[26] *Ibid*.

resources must be able to meet delivery under peak load conditions. Therefore, there is a critical link between RA and FCDS.

In D.19-11-016, the Commission determined an increase in RA is required over the coming years to assure grid reliability. That decision increased the amount of system-level RA that LSEs must procure by an additional 3,300 MW and set a deadline of August 1, 2023. In order to meet these RA requirements, this 3,300 MW in new procurement will need to receive CAISO's FCDS approval.[27]

The ELM Project would support LSEs' abilities to procure new RA because it would provide the additional transmission capacity necessary to provide FCDS for generation from within the Desert Area.[28] CAISO estimates that when constructed, the ELM Project will provide access to a minimum of approximately 2,700 MW of incremental qualifying capacity that can count toward system RA needs by August 1, 2023.[29] According to CAISO, "the Proposed Project enables [numerous renewable resource projects] to achieve FCDS and will increase the available options for system-level resource procurement required by [D.19-11-016] and will result in increased competition which will benefit the ratepayers."[30]

Cal Advocates argues that this proceeding should consider future changes in the methodology CAISO will use to determine resource deliverability.

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[27] Exhibit CAISO-4 at 5.

[28] Exhibit CAISO-2 at 26.

[29] CAISO Opening Brief at 5; Exhibit CAISO-4 at 5.

[30] Exhibit CAISO-1 at 14.

However, Cal Advocates does not identify what that future CAISO resource deliverability determination methodology is.[31] CAISO testified that the application of the new methodology to the ELM Project could only be hypothetical, that the new methodology has not been filed or approved by the Federal Energy Regulatory Commission (FERC), and that while the deliverability determination methodology may change, the RA capacity analysis (based upon recent Commission Rulemaking (R.) 17-09-020) would be the same as CAISO had already calculated as it relates to the ELM Project.[32]

4.2.4. ELM Project Impact on Renewables Portfolio Standard

Under the statutory framework set out in Pub. Util. Code § 399 et seq., the Commission has established its RPS program. Originally established in 2002, and accelerated in 2015 and again in 2018, the RPS target requires 60 percent of the state's electricity to come from carbon-free resources by 2030. The Commission implements and administers RPS compliance rules for California's retail sellers of electricity (*i.e.*, LSEs), who must adhere to the RPS requirements by procuring renewable energy from qualified renewable energy sources.[33]

Therefore, the RPS both encourages and ultimately requires investment in the development of new renewable energy resources, including utility-scale renewable projects, to meet the RPS targets. The RPS requires LSEs to procure at least the target amount of electricity from eligible renewable energy resources.

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[31] Cal Advocates Opening Brief at 7-8.

[32] Evidentiary Hearing Reporter's Transcript at 59:3-26, 66:17–67:8.

[33] The CEC is responsible for the certification of electrical generation facilities as eligible renewable energy resources.

The LSEs then track their procurement to ensure that the total amount of kilowatt-hours of electricity sold to retail customers meets the RPS target percentage of renewable energy for a given year.

As discussed, the ELM Project has long been and continues to be integrated in CAISO's TPP, based upon CAISO's obligation to ensure that the Commission's RPS portfolio is brought to fruition. The ELM Project would enable a series of utility-scale solar projects in the Desert Area to be built and to receive FCDS. It would also enable a large number of actual and prospective renewable energy projects to obtain Interconnection Agreements.

The Commission requires its RPS portfolios to be "fully deliverable," meaning that the generation identified in the portfolios need the ability to achieve FCDS.[34] At the time CAISO identified the need for the ELM Project, CAISO was conducting its 2012-2013 and 2013-2014 TPPs to determine whether the CAISO system had adequate transmission capacity to deliver, with FCDS, the renewable generation needed to meet the requirements of the 33 percent RPS portfolios (to meet the 2020 RPS target).[35] CAISO concluded that there was insufficient transmission capacity to support FCDS for the resources located in the Desert Area identified in the Commission's RPS portfolio. Therefore, CAISO identified the need for the ELM Project as a public policy-driven project

[34] Exhibits SCE-1 at 24-25 and SCE-2 at 7-8.

[35] Exhibit CAISO-1 at 3-4.

necessary to integrate the renewable resources located in the Desert Area to meet the 33 percent RPS requirement.[36]

More recently, CAISO re-analyzed the need for the ELM Project using the Commission's latest RPS portfolios and provided testimony that it "performed an updated analysis of the need for the Proposed Project using the Commission-developed Reliability and Policy-Driven Base Case transmitted for the purpose of the 2019-2020 TPP that is currently under way."[37] CAISO again concluded that the upcoming 2019-2020 TPP will find a continued need for the ELM Project to meet RPS.[38]

Both Cal Advocates and Wild Tree dispute whether the ELM Project is needed for RPS. Cal Advocates observes that other LSEs have not intervened in the proceeding.[39] Wild Tree argues that SCE does not require the ELM Project for its RPS.[40]

We are unpersuaded by these arguments. CAISO has determined the State's need for the ELM Project, and SCE has a Transmission Control Agreement with CAISO requiring SCE to make a good faith effort to seek approval for the construction of transmission projects identified by the CAISO as necessary to

[36] Exhibits CAISO-1 at 3-4 and CAISO-3 at 10.

[37] Exhibit CAISO-1 at 6.

[38] Exhibit CAISO-1 at 6-8.

[39] Cal Advocates Opening Brief at 10-11.

[40] Wild Tree Opening Brief at 23.

support the State's RPS goals. The Commission requires its RPS portfolios to be fully deliverable.

4.2.5. Conclusion

Based on the foregoing, we find that the ELM Project is needed to meet various electric providers' and the State's RPS requirements, as determined by the Commission and the State's clean energy goals. It is prudent to plan for long lead times both in the development of new renewable energy resources and in the development of new transmission projects. As the state marches toward 60 percent zero-carbon energy resources by 2030 and toward 100 percent zero-carbon energy resources by 2045, it is appropriate to take action to alleviate the Desert Area deliverability constraint upon renewable energy development.

4.3. (Issue 3) Is there no substantial evidence that the proposed ELM Project will have a significant effect on the environment?

As discussed below, we have considered the Pub. Util. Code § 1002(a) considerations and have carefully reviewed the MND.

The MND finds that, with the incorporation of mitigation measures identified in the Mitigation Monitoring Plan included therein and attached to this decision, all project-related environmental impacts can be reduced to less than significant levels. The ELM Project, as mitigated, would avoid any significant environmental impacts, including those with respect to public safety and the safety of utility services, recreational and park areas, historical and aesthetic values, and influences on the environment. Therefore, there is no substantial evidence that the ELM Project would have a significant effect on the environment.

Pursuant to Pub. Util. Code § 1002(a)(1), we have considered the community values factor. There is no opposition from any party in this regard. The MND demonstrates that the ELM Project uses the existing transmission line corridor, and therefore only minimally increases SCE's equipment footprint. We find that this results in only minimal impact upon any nearby communities.

Pursuant to Pub. Util. Code § 1002(a)(2), we have also considered the issue of preservation of recreational and park areas. There is no opposition from any party in this regard. The MND provides a detailed analysis of potential impacts to these recreational and park areas. Except for an approximate one acre of disturbance at one of the series capacitor sites, all of the ELM Project elements are to be constructed during a short-term period within an already-disturbed utility access road right-of-way or within existing substations, and none of the construction work is to be performed within any of the recreational areas. The MND concludes that the ELM Project would not result in a significant impact to recreational and park areas.[41]

Pursuant to Pub. Util. Code § 1002(a)(3), we have also considered the historic and aesthetic values. There is no opposition from any party in this regard. Section 5.1 of the MND concerns aesthetics, and it finds that, in accordance with Public Resources (Pub. Res.) Code § 21099, the ELM Project would have a less than significant impact with the planned mitigation incorporated into the ELM Project. Section 5.5 of the MND concerns cultural

[41] MND at Section 5.16. It is noted that the ELM Project would neither include new recreational areas nor increase the use of recreational facilities (5-323 – 5-324).

resources, and it finds that, in accordance with Pub. Res. Code § 15064.5, the ELM Project would have less than significant impact with the planned mitigation incorporated into the ELM Project. Section 5.18 of the MND Report concerns tribal cultural resources, and it finds that, in accordance with Pub. Res. Code §§ 21074, 1520.1(k), and 1524.1, the ELM Project would have less than significant impact with the planned mitigation incorporated into the ELM Project.[42]

Pursuant to Pub. Util. Code § 1002(a)(4), we have considered the ELM Project's influence of its environment. The whole of MND Section 5 (approximately 430 pages) addresses the possible environmental impact and mitigation (including the statutory subparts referenced below) and all aspects of environmental topics, including locale landscape and scenic quality, special-status plants and animals, agricultural and forestry resources, air quality, biological resources, energy, geology and soils, greenhouse gas emissions, hydrology and water quality, mineral resources, noise, and wildfire. The MND addresses each of these topics (and others) with particularized analysis, provides measures to lessen or alleviate potential significant environmental effects to a less than significant level were articulated. The MND also reviews the construction siting and material locations and sets forth mitigation measures to be taken to minimize visual disruption and contrast, to minimize soil and lands

[42] Colorado River Indian Tribes, a Native-American Indian group based in Arizona and representing Colorado River tribes, primarily commented that the ELM Project may disrupt cultural artifacts and unknown archeological sites. The MND responded by noting that SCE would retain a cultural resources specialist, ensure cultural resource environmental awareness training, and prepare and implement a Cultural Resources Management Plan (MND at 5-371 – 5-377). These measures are appropriate and satisfy Pub. Util. Code § 1002(a)(3).

disruption, and to restore and revegetate disrupted sites. Dust would be minimized, natural grades maintained where possible, and grades would be stabilized. These steps all appear to be in accord with best practices. The MND also included written responses to the public comments received on the ELM Project during the CEQA review. The MND concluded that the ELM Project to have less than significant impacts with implementation of appropriate mitigation measures.[43]

The MND received public comment from Cal Advocates and Wild Tree, among others, concerning environmental impacts.[44] The MND addressed all comments and made certain limited modifications to its draft to accommodate comments when it was finalized, including those received from Cal Advocates and Wild Tree.[45] (*See* Section 5.4 below regarding Wild Tree's Pub. Util. Code § 1002.3 arguments, as well as Section 6 below regarding Cal Advocates and Wild Tree's CEQA process comments.)

The record includes the MND, and the MND was appropriately thorough, thoughtful, and mindful of all environmental issues (and, as we discuss below, was properly conducted under CEQA). We find that environmental issues were appropriately addressed through mitigation measures and that, with these

[43] MND, Section 5, *passim*.

[44] The Commission is mindful of those comments that reflect the interests of the community. Here, there are no public representative comments that are critical of the ELM Project.

[45] An endorsing comment was also received from party NRDC: MND at 7-34 – 7-36.

mitigation measures as set forth in the MND, there no substantial evidence that the proposed ELM Project will have a significant effect on the environment.

4.4. Public Utilities Code Section 1002.3 Analysis

The next required step in the Commission's analysis of the ELM Project is Pub. Util. Code § 1002.3, which provides:

> In considering an application for a certificate for an electric transmission facility pursuant to Section 1001, the commission shall consider cost-effective alternatives to transmission facilities that meet the need for an efficient, reliable, and affordable supply of electricity, including, but not limited to, demand-side alternatives such as targeted energy efficiency, ultraclean distributed generation, as defined in Section 353.2, and other demand reduction resources.

We find that the record provides sufficient Commission consideration of alternatives to be met in three ways: first, by reliance upon the Commission's RPS portfolio process and its review of alternatives; second, by reliance upon CAISO's TPP process and its review of alternatives; and third, by our additional analysis of the proceeding's testimonial and documentary record in this proceeding.

The Commission considered non-transmission demand-side alternatives and other demand reduction resources when developing this relevant RPS portfolio.[46] The 2012-2013 RPS portfolio expressly proposes a "high distributed generation" scenario that "uses the discounted core to force in 5,307 MW of Small Solar PV resources, beyond the 2,266 MW that is included in the discounted core

[46] The Commission's development of its RPS portfolios is transparent and open to the public for participation and comment, and the portfolios include stakeholder comments and resulting edits.

for the other [scenarios]." The portfolio goes on to identify and consider Distributed Solar and Small Solar PV resources.[47] Thus, at the time that the relevant RPS portfolio was created, there is evidence that the Commission considered, and put into play, alternatives. Nonetheless, the Commission provided for the inclusion of the Desert Area CREZs that underlie the ELM Project in the RPS portfolio, thereby demonstrating its need even in light of the existence of alternatives.

Regarding CAISO's consideration of alternatives inherent in its development of its TPPs into which the ELM Project falls, the record demonstrates that CAISO considered both transmission and non-transmission alternatives.[48] For both the 2012-2013 and 2013-2014 TPPs, CAISO expressly considered additional alternatives:

> The transmission plan identifies transmission facilities that are needed for three main purposes: reliability; public policy; and economics. In the planning process, the CAISO also considers and evaluates non-transmission alternatives, including… preferred resources such as energy efficiency, demand response, renewable resources, and energy storage.[49]

Based upon CAISO's testimony, we find that CAISO reviewed and considered the full range of alternatives, including non-transmission alternatives

[47] Exhibit SCE-2 at 18, citing to the 2012-2013 Commission Portfolio.

[48] CAISO's development of its TPPs is transparent and open to the public for participation and comment and to stakeholder review: Exhibit CAISO-3 at 3-4.

[49] Exhibit CAISO-3 at 2-3.

such as energy efficiency and demand response; thus, it is apparent that the demand-side analysis was effectively performed by CAISO.

Furthermore, we also reviewed and considered SCE's Proponent's Environmental Assessment (PEA). The PEA was prepared and submitted in accordance with the CEQA process, provides separate and additional support for the Commission's independent consideration of alternatives in this proceeding. The PEA provided evaluations of ELM Project alternatives comprised of different electric systems and different locations for the midline capacitors. Importantly, the PEA also includes a "no ELM Project" alternative. The PEA provides evidence of the following: the different electric systems alternative would create a larger environmental impact than the ELM Project; the different capacitor locations alternative would create larger environmental impacts; and the "no ELM Project" alternative would not meet the ELM Project objectives.[50]

We note Wild Tree argues that "there is no record evidence regarding non-transmission alternatives -- SCE has not put forth any evidence regarding non-transmission alternatives and Commission Staff failed to conduct any alternatives as part of environmental review."[51] It is true that, here, the CEQA process did not require a review of full range of project alternatives due to its conclusion in an MND (as opposed to an EIR). However, we disagree with Wild Tree that there is no record or insufficient record of non-transmission

[50] SCE's PEA (submitted as part of SCE's Application) at 2-9, 5-1, and 5-17 – 5-37; Exhibit SCE-2 at 15-16.

[51] Wild Tree Opening Brief at 5.

alternatives. For the reasons articulated above, we disagree with Wild Tree's blanket argument and dismiss it here.

Further, Wild Tree argues for a no-build alternative based upon energy storage.[52] However, it fails to provide sufficient practical analysis or useful particulars to understand how it would propose to apply storage as an alternative, and we note that CAISO had considered and dismissed storage as a sufficient alternative. We are not convinced that Wild Tree offers meaningful evidence of a satisfactory approach regarding the use of storage as an alternative to the ELM Project.

In conclusion, Pub. Util. Code § 1002.3 requires consideration of alternatives that meet the "supply" of electricity that this project provides. Here, the Commission's RPS portfolio, CAISO's TPP process, and the record in this proceeding, were each reviewed and found to provide support for the determination that the ELM Project is superior to alternatives in meeting the supply of electricity that the ELM Project provides. Therefore, the ELM Project meets this element set forth in Pub. Util. Code § 1002.3.

As also noted above, Pub. Util. Code § 1002.3 additionally requires consideration of alternatives that include review of demand side alternatives. Here, the Commission's own steps in creating the RPS portfolio necessarily included analysis of demand side alternatives; the Commission accepts the testimony of CAISO as sufficiently supportive of a review and analysis of a no-project demand side alternative; and, SCE's PEA provides support for our

[52] Wild Tree's Opening Brief contains 37 references to storage.

independent consideration of a no-project demand-side alternative. Therefore, the record in this proceeding supports the determination that the ELM Project is superior to an alternative available through the demand-side.

4.5. (Issus 4) California Environmental Quality Act Compliance

CEQA requires that, prior to approving the project, the lead agency certify that the MND was completed in compliance with CEQA, that the agency has reviewed and considered the MND prior to approving the project, and that the MND reflects the agency's independent judgment.[53]

Here, the MND was completed after notice and opportunity for public comment.[54] The Final MND documents all comments made on the draft MND and responds to those comments.[55] As noted above, the MND identifies and requires implementation of mitigation measures that would avoid any significant environmental impacts.

Regarding the CEQA lead agency's review of the project in accordance with this portion of CEQA guidance, in its summary regarding the environmental impact of the project, the MND stated as follows:

> Based on the analysis in the IS (Initial Study), and on SCE's agreement to the mitigation measures incorporated therein, it has been determined that all project-related environmental impacts would be less than significant or reduced to a less than significant level with the incorporation of feasible mitigation measures. Therefore, adoption of a Mitigated Negative Declaration (MND) will satisfy the requirements of CEQA. The mitigation measures

[53] Pub. Res. Code § 21082.1(c)(3).

[54] MND Section 7.

[55] *Ibid*.

> included in this MND are designed to reduce or eliminate the potentially significant environmental impacts described in the Initial Study. Where a measure described in this document has been previously incorporated into the project, either as a specific project design feature or as an Applicant-Proposed Measure, this is noted in the discussion. Mitigation measures are structured in accordance with the criteria in Section 15370 of the CEQA Guidelines.[56]

We have reviewed and considered the information contained in the MND prior to approving the ELM Project. We find that substantial evidence supports the MND's findings, and we certify that the MND was completed in compliance with CEQA, that we have reviewed and considered the information contained in it, and that it reflects our independent judgment.

Wild Tree has, often verbatim, raised in this proceeding the same arguments as it raised in the CEQA process. For instance, Wild Tree argues that for this project, an EIR rather than an MND is required.[57] As discussed more fully below, we are satisfied with the MND's responses to party comments. The Commission has determined that in evaluating the performance of the CEQA review, the process of that review does not amount to an opportunity to relitigate the outcome of the CEQA review.[58] Here, in raising the same set of arguments, Wild Tree is merely disagreeing with the CEQA outcome.

Under CEQA, a lead agency must prepare an EIR rather than an MND only when there is substantial evidence in light of the whole record that the

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[56] MND at Section 1.2.

[57] Wild Tree Opening Brief at 10-14.

[58] D.00-05-048 at 28.

project may have a significant effect on the environment. (Pub. Res. Code § 21000 et seq.; CEQA Guidelines §15064(a)(1).) Based upon our review of the whole of the detailed, considered, and responsive CEQA document, which spans many hundreds of pages, we conclude that the CEQA process resulting in the MND was adequately completed, and an EIR was not required as there is no substantial evidence in light of the whole record that the project may have a significant effect on the environment.

Cal Advocates and Wild Tree submitted comments to the Draft MND. Their comments were addressed in the Final MND. We find that the Final MND sufficiently addressed all of their comments.

Cal Advocates' Draft MND comments argued that the MND should not contain a specific project in-service date and that the planned energy generation projects that this project would enable should be identified. The Final MND responded to these comments by noting the importance of identifying a date for purposes of conducting its environmental impact review, and that the term "planned" has no special meaning but that regardless the several sources identifying projects were listed in the MND (MND 7-31 – 7-32). We conclude that Cal Advocates' comments were sufficiently addressed in the responses.

For its part, Wild Tree posed 17 pages of comments regarding the Draft MND (MND 7-38 – 7-55), arguing what can generally be described as a series of contentions regarding demonstration of need, requirements for an EIR, and possible impacts upon a set of biological resources. The Final MND provided ten single-spaced pages of thoughtful and detailed point-by-point responses to Wild Tree's comments (MND 7-56 – 7-66). It would be redundant and cumulative to

summarize these here. We will cite one example in the below footnote.[59] We conclude that Wild Tree's comments were sufficiently addressed in the responses contained in the MND.

We conclude the MND thoroughly considered, addressed, and was inclusive of a series of findings regarding the ELM Project, and properly ensured appropriate mitigation of its potential environmental impacts.

4.6. (Issue 5) Electric and Magnetic Field

The Commission has examined the impact of EMF effects in previous proceedings.[60] The Commission found the scientific evidence presented in those proceedings was uncertain as to the possible health effects of electromagnetic fields, and the Commission did not find it appropriate to adopt any related

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[59] As an example, Wild Tree argued regarding potential significant impacts upon the Desert Tortoise and other special status species (and without specific detail as to the ELM Project). However, the MND analyzed potential biological resource impacts by expressly considering SCE's PEA, biological resource technical reports, rare plan surveys, and environmental documents of other project in the ELM Project area, and the MND also demonstrates that the CEQA process including undertaking searches of relevant databases including the California Natural Diversity Database, the California Native Plant Society inventory, and U.S. Fish and Wildlife habitat data (MND at 5-64). The MND also addressed California Department of Fish and Wildlife Species of Special Concern and the Bureau of Land Management-designated Sensitive Species in the ELM Project area and identified pre-construction surveys to identify, monitor, and implement avoidance measures (MND at 5-92). Lastly, the MND expressly cited each of the mitigation measures that SCE agreed to implement, and weighed how these measures would avoid, minimize, and mitigate the risk of harm, and concluded that these mitigation measures would result in less than significant impact to biological resources, along with requiring BLM and the Commission to provide oversight by reviewing the qualifications of biologists and the determination of the presence or absence or sensitive biological resources at the work sites (MND at 5-95). The MND provides a very detailed explanation of these measures and more in response to Wild Tree's comments primarily found at MND 7-59 – 7-61, and also in the adjacent comment responses.

[60] D.06-01-042; D.93-11-013.

numerical standards. Because there is no agreement among scientists that exposure to EMF creates any potential health risk, and because CEQA does not define or adopt any standards to address the potential health risk impacts of possible exposure to EMF, the Commission does not consider EMF effects in the context of CEQA and determination of environmental impacts.

However, recognizing that public concern remains, the Commission requires, pursuant to G.O. 131-D, Section X.A, that all requests for a CPCN include a description of the measures taken or proposed by the utility to reduce the potential for exposure to EMF generated by the proposed project. The Commission developed an interim policy that requires utilities to, among other things, identify the no-cost measures that can be undertaken, and the low-cost measures implemented, to reduce the potential EMF impacts.

Here, SCE included a Field Management Plan in its Application, asserting that the ELM Project design complies with the Commission's EMF policies by incorporating "no-cost and low-cost" field reduction measures.[61] The Field Management Plan's proposed measures to reduce EMF associated with the ELM Project include the following: install mid-line series capacitors in undeveloped areas; place substation series capacitors away from the substation property lines; utilize taller structure heights in areas with potential overhead discrepancies; relocate underbuilt distribution circuits on 115 kV structures; and increase conductor ground clearance.

[61] Application Appendix F.

The record contains no evidence or argument regarding EMF concerns. We adopt SCE's proposed EMF reduction measures as stated in its Field Management Plan and require SCE to comply with it.

4.7. (Issue 6) Safety

SCE provided testimony regarding project contractor safety oversight and project management practices, safety practices including those required by the Occupational Safety and Health Administration, and safety enhancements related to the ELM Project.[62] No party provided testimony or arguments regarding safety concerns, and no CEQA process comments were received regarding safety concerns. We adopt SCE's proposed safety measures as stated in its testimony and require SCE to comply with them.

4.8. (Issue 7) ELM Project Maximum Reasonable Cost

Pub. Util. Code § 1005.5(a) reads as follows:

> Whenever the commission issues to an electrical or gas corporation a certificate authorizing the new construction of any addition to or extension of the corporation's plant estimated to cost greater than fifty million dollars ($50,000,000), the commission shall specify in the certificate a maximum cost determined to be reasonable and prudent for the facility. The commission shall determine the maximum cost using an estimate of the anticipated construction cost, taking into consideration the design of the project, the expected duration of construction, an estimate of the effects of economic inflation, and any known engineering difficulties associated with the project.

SCE must demonstrate that the ELM Project's proposed project maximum cost is reasonable and prudent. SCE states that the scope of the work for the

[62] Exhibit SCE-1 at 43, 46, and 55.

ELM Project is that work which was described and approved in the MND.[63] SCE states that the cost estimate for the ELM Project is $239 million in 2019 dollars, including estimated direct expenditures of $220 million and a contingency of $19 million.[64, 65]

SCE contends that the bases for its cost estimate are project engineering cost methodologies that are consistent with industry practice. SCE asserts that the direct total cost is a combination of estimates developed by SCE and its contractor after the contractor was awarded the contract work through a competitive solicitation. It notes that the contractor prices cover environmental monitoring and management, four new and modified series capacitor banks in existing substations, two new midline series capacitor banks, and transmission line OPGW installation, while SCE would directly perform the remaining project scope of work. SCE also asserts that it developed its cost estimates based on its experience in estimating and constructing similar projects.[66]

SCE asserts it can recover its costs through its rate base in two ways: Allowance for Funds Used During Construction (AFUDC) and Construction

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[63] Exhibit SCE-1 at 34.

[64] Exhibit SCE-1 at 14.

[65] We note that the project cost indicated in the Amended Application's Opening Testimony was reduced from the cost indicated in the Amended Application (which contained an indicated total cost of $250 million) due to some equipment cost having been subsequently allocated to a different project, and we further note that the initial Application contained an indicated total cost of $225 million. Amended Application at 12 and Appendix J.

[66] Exhibit SCE-1 at 34.

Work in Progress (CWIP). Also, SCE points out that FERC has already authorized SCE to begin recovering its CWIP costs in its transmission rates.[67, 68]

SCE asserts its $19 million proposed contingency estimate (10 percent for its contractor's portion of the work, and 15 percent for SCE's portion of the work) is based upon industry-standard cost estimating and SCE's judgment and experience.[69] According to SCE, its project estimates were in various stages of maturity, with approximately 70 percent of its engineering design completed and its contractor bid in the highest level of estimation maturity. Therefore, SCE was confident in its Maximum Reasonable and Prudent Cost (MRPC) estimates for the project cost and contingency cost estimates.[70]

Cal Advocates argues that SCE has admitted that it has not provided a sufficiently finalized project design. Cal Advocates also argues that the estimate is not sufficiently mature, and that based upon SCE's own testimony, SCE "is really asserting that the cost estimate is actually about $287 million (20 percent higher than $239 [million])." Lastly, Cal Advocates contends that SCE "excludes the cost of corporate overhead and AFDUC without explanation or justification."[71]

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[67] Amended Application at 16, citing to FERC Docket No. EL 17-63-000.

[68] We emphasize that the Commission ultimately decides a project's maximum reasonable cost: "While FERC ultimately will decide how much of the costs for this project SCE may recoup in transmission rates, we have jurisdiction pursuant to § 1005.5(a) and the responsibility to specify in the CPCN a maximum cost determined to be reasonable and prudent." D.07-01-040 at 45.

[69] Exhibit SCE-1 at 37-38.

[70] Exhibit SCE-1 at 37-40.

[71] Cal Advocates' Opening Brief at 14-15.

In response, SCE contends that its contingency is approximately 13 percent of remaining costs, indicating a more conservative contingency request than that put forth by Cal Advocates. Also, SCE states that "the contingency does not cover any adjustments due to: (1) unanticipated delays, (2) final design changes, (3) adopted mitigation measures, and (4) any change in labor or materials."[72] Concerning Cal Advocates' argument regarding AFDUC, SCE responds that FERC's allowance of cost recovery through CWIP while in construction (including finance charges and cost of capital) enables these cost recoveries to be used in lieu of line items such as AFDUC in SCE's project estimate. Concerning Cal Advocates' argument regarding overhead, SCE responds that overhead is already accounted for in SCE's rates.[73]

We are persuaded by SCE's explanation of the details of its bidding process. SCE has provided a sufficiently accurate accounting of construction bid process and project cost assessment to support its cost estimates.[74] Also influencing our determination is that the sole basis for SCE to potentially access the contingency funds can only be for such construction estimations as have not yet been completed, and those remaining estimates should be carefully reviewed to ensure those MRPC estimate overruns are within the bounds of its seven

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[72] Exhibit SCE-1 at 39-41, and SCE's Reply Brief 37-38.

[73] SCE Reply Brief at 38-40.

[74] We are satisfied with the review of SCE's testimony regarding the bid process and the state of the contract bids, demonstrating that it has been utilizing the expected accuracy ranges indicated in the Association for the Advancement of Cost Engineering Cost Estimate Classification Matrix for Power Transmission, which leads to a blended confidence interval close to seven percent of the estimated direct cost (Exhibit SCE-1 at 38).

percent confidence limit projection. As SCE itself notes, contingency funds cannot be accessed for items such as unanticipated delays, final design changes, adopted mitigation measures, or any change in labor or materials.

Pub. Util. Code § 1005.5(b) would enable SCE to return to the Commission to apply for "an increase in the maximum cost specified in the certificate." Therefore, SCE can seek approval for additional expenditures for construction of the ELM Project if the Commission "determines that the costs have in fact increased." We observe that any such alleged increase in costs should be hinged upon factors outside of SCE's control, and should not be accepted if the alleged increases are the result of a failure of SCE to provide the Commission with reasonably accurate estimates in this proceeding.

Furthermore, if SCE seeks approval for additional expenditures for the ELM Project, SCE must file a Petition for Modification of the maximum reasonable and prudent cost determination *before* incurring any costs in excess of this decision's determination.[75] For these reasons, we find that SCE's estimated MRPC, consisting of estimates of direct expenditures of $220 million, and a contingency estimate of $19 million, is reasonable and prudent. We adopt these costs as the maximum reasonable and prudent costs for purposes of Pub. Util. Code § 1005.5(a).

[75] The Commission may challenge SCE in a FERC rate case if SCE fails to timely file and receive approval of a Petition for Modification prior to incurring costs or attempting ratepayer recovery of costs in excess of the maximum cost approved in this decision.

5. Comments on Proposed Decision and Motions by Cal Advocates

The proposed decision of ALJ Jason Jungreis in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. On August 11, 2020, comments were filed by CAISO, Cal Advocates, EDF, SCE, and Wild Tree. On August 17, 2020, reply comments were filed by CAISO, Cal Advocates, EDF, NEER, and SCE.

Also filed on August 11, 2020, are two motions by Cal Advocates: the first is a Motion to Set Aside Submission and Reopen the Record, and the second is a Motion Requesting Official Notice of FERC's May 19, 2020 Order. On August 17, 2020, responses to Cal Advocates' Motions were filed by CAISO, NEER, and SCE (and to at least some degree, the Motions are also addressed in every party's reply comments).

Cal Advocates' Motion to Set Aside Submission and Reopen the Record is necessary to address first as it would, if granted, change the nature of this decision, and it would, if denied, make moot the Motion Requesting Official Notice of FERC's May 19, 2020 Order. Therefore, the Motion to Set Aside Submission and Reopen the Record (hereafter, the Motion) is immediately addressed.

The Motion, in reliance upon Rule 13.14(b), seeks to delay this decision by setting aside the January 31, 2020, submission date of this proceeding and submitting into the record a May 19, 2020, Order by FERC that accepted, in part, a revision to CAISO's deliverability determination methodology. Cal Advocates' Motion states in substantive part as follows:

> [FERC's May 19, 2020, Order] means more resources can obtain [FCDS] and therefore be eligible to provide system adequacy resources and obtain renewables portfolio standard credits, without system upgrades. Whether resources are able to obtain FCDS directly impacts the analysis of whether the Project is necessary.

CAISO, NEER, and SCE filed responses to the Motion requesting that the Motion be denied. EDF's reply comment was effectively also a response challenging the Motion and its implications.

Rule 13.14(b) reads in substantive part as follows:

> A motion to set aside submission for the taking of additional evidence or argument, or for consideration of a settlement under Article 12 shall specify the facts claimed to constitute grounds in justification thereof, including material changes of fact or of law alleged to have occurred since the conclusion of the hearing. It shall contain a brief statement of proposed additional evidence, and explain why such evidence was not previously adduced.

The Motion is denied for the following reasons:

1. The new methodology was already known and is part of the record, has been available for argument, and was the subject of argument. A considerable portion of Cal Advocates' briefing, testimony, and time spent in its cross-examination of CAISO's witness at the evidentiary hearing was specifically focused on discussion of the new methodology. However, despite that Cal Advocates had every opportunity to argue every aspect of the new methodology, Cal Advocates failed to identify the new methodology (as noted in the decision at page 15), and thus in its pre-submittal arguments it had failed to explore the new methodology and explain its implications for the ELM Project.

2. Rule 13.14(b)'s requirement that the movant "explain why such evidence was not previously adduced" has not been met. There is no explanation by Cal Advocates as to why it failed to bring its motion for the submission of the May 19, 2020, FERC Order sooner than the August 11, 2020, Motion filing date, which was not coincidentally the deadline for PD comments. Cal Advocates, in its Opening Brief, made clear it was fully aware of CAISO's proposed new methodology, and its evidentiary hearing cross-examination of CAISO's witness on the subject made clear that it was aware of FERC's consideration of CAISO's new methodology.[76] For Cal Advocates to delay from the May 19, 2020, date of FERC's issuance of its Order such as to only bring it to the attention of the Commission in this proceeding on August 11, 2020, is a failure of the movant's burden to timely adduce such proposed additional evidence. Given the timely requirements of the ELM Project,[77] it is prejudicial for Cal Advocates to have failed to earlier adduce such proposed additional evidence.

3. Rule 13.14(b)'s requirement that the proposed additional evidence must be "material changes of fact or of law" has not been met. Cal Advocates has not provided any basis for asserting that the proposed additional evidence is material. Cal Advocates' Motion states only that "Whether resources are able to obtain FCDS directly impacts the analysis of whether the Project is necessary." Cal Advocates does not argue, and provides no analysis, that the new

[76] Evidentiary Hearing Reporter's Transcript at 59:15-26.

[77] Exhibit NEER-1 at 10:16-17.

methodology does in fact impact this decision's analysis, and if so, how that analysis demonstrates that the new methodology changes the outcome of this decision. In failing to provide such necessary analysis, Cal Advocates fails to carry its burden that the proposed additional evidence is material to the proceeding.

4. Cal Advocates seems to misrepresent the nature and impact of the proposed additional evidence. Cal Advocate's Motion notes that FERC's May 19, 2020, Order "accepted, in part" CAISO's new methodology. However, in its concomitantly filed comments, Cal Advocates focused solely on whether the new methodology's modification would affect deliverability requirements during peak system needs periods.[78] Yet, the new methodology apparently also impacts off-peak system needs periods. Importantly, CAISO has already explained that the off-peak deliverability assessment (the period when solar generation is most productive) -- which Cal Advocates failed to mention or address -- would actually increase the likely need for transmission upgrades.[79]

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[78] Cal Advocates' comments at 4.

[79] In full, CAISO testified and wrote as follows: "There is no basis to conclude that the prospective deliverability assessment methodology will obviate the need for the Proposed Project or enable the RPS portfolio resources to achieve deliverability [citing to CAISO's evidentiary hearing witness testimony]. The new methodology would consider lower solar output levels during later-day peak loads, which, at face value, might suggest lower transmission requirements to achieve deliverability for solar resources: however, including the off-peak deliverability assessment will potentially counteract reductions in transmission requirements because the off-peak deliverability assessment will identify new transmission upgrades that are necessary to mitigate excessive transmission-related curtailment." CAISO Opening Brief at 6-7.

5. Cal Advocates fails to argue, and fails to prove, that the new methodology would fundamentally change the status quo. In D.16-08-017, Cal Advocates' predecessor similarly argued that an application should be denied so as to wait to see whether a change in process (there, a change to the RPS portfolio process) would change support for a project. We decided then, and reaffirm here, that there must be a determination that a change in methodology fundamentally changes the status quo in order to require that a project application be denied. Here, Cal Advocates has presented no facts demonstrating that the new methodology would result in a change in the already-determined need for the ELM Project.

6. We find that the Motion is without merit, as there is ample evidence in the record that regardless of the new methodology, the ELM Project is needed. This decision has already conducted an examination of the record and determined that regardless of a change in deliverability determination methodology, the RA capacity analysis (based upon (R.) 17-09-020) would be the same as CAISO had already calculated. This means that the ELM Project will provide LSEs with access to approximately 2,700MW of incremental qualifying capacity that can count toward system RA needs. That RA capacity would not decrease based upon the new methodology, and it is sound basis for approval of the ELM Project.

All motions not expressly granted in this proceeding are hereby denied.

Turning to substantive party comments, SCE commented upon the jurisdictional exclusivity of FERC concerning certain project construction cost issues and argued that the maximum cost assessment does not require the

Commission to determine that incurred costs exceeding the maximum are necessarily imprudent. SCE proposed changes to the decision to reflect FERC's exclusive jurisdiction regarding the determination as to whether transmission facility costs are prudent. No other comments or reply comments were received on this subject. Changes have been made to this decision to clarify the role of the Commission to set the maximum reasonable and prudent cost pursuant to California law, and the need for SCE to apply for a Petition for Modification before exceeding that maximum reasonable and prudent cost.

EDF commented that its Desert Harvest Solar project cannot achieve FCDS without the ELM Project and faces significant financial harm if FCDS cannot be achieved by December 1, 2020. EDF observes that the Commission has previously stated that "The failure to provide transmission capacity to accommodate generation projects under contract for FCDS status could conceivably lead to their failure to develop and set back our progress toward achieving the RPS."[80] EDF contends that weather and reliability driven restrictions in the ability to construct the project means that any delay in approval of the proposed decision could result in in-service date slippage of up to nine months.

Cal Advocates' comments hinge entirely on its Motions. It argues that the proposed decision failed to address the impact of CAISO's new methodology. Consequently, Cal Advocates requests that, upon granting its Motions, SCE's Amended Application should be denied. Identically as noted above, Cal

[80] D.16-08-017 at 16.

Advocates does not provide reasoned or applied analysis as to the specific impact of the new methodology on the decision's reasoning.

Wild Tree's comments also argue that SCE's Application (sic) should be denied. Its comments are also familiar, as they are essentially a rehashing of the briefs and arguments Wild Tree has previously made. In sum, Wild Tree argues that demand-side alternatives have not been considered; that an EIR is required; that the proposed project is not needed to meet RPS and that CAISO's TPPs "actually demonstrate that the proposed project is not needed."[81] Wild Tree also argued that CAISO's analysis is incorrect because its delivery methodology has been updated, but this argument has been addressed above regarding Cal Advocates' Motions.

Wild Tree's argument regarding the failure to consider demand-side alternatives is belied by the citations in this decision. Wild Tree inaccurately asserts that the Proposed Decision "claims that consideration of non-transmission alternatives is not required in this proceeding" (Wild Tree Comments at 6). In fact, the decision expressly noted that this proposed project was part of the Commission's RPS Portfolio and that demand-side alternatives were evaluated regarding that Portfolio. Similarly, Wild Tree asserts that CAISO did not evaluate demand-side alternatives, when in fact, as quoted in the decision on page 24, CAISO's TPP expressly did include review of several non-

[81] We note that Wild Tree neither presented its lone witness nor appeared by counsel at the evidentiary hearing, and so it waived its cross-examination opportunity of SCE and CAISO witnesses on these subjects.

transmission alternatives. Wild Tree's arguments here are merely repetition of prior arguments, and it points to nothing new in the record (in contravention to Rule 14.3(c)).[82]

Wild Tree once more argues that an EIR was required for this project, and that an MND does not suffice. Now, Wild Tree takes the position that if there is any argument made by any entity that significant environmental impact may occur, an EIR is necessarily required. Wild Tree does not cite to statute for support of this very broad position, and it is rejected. Wild Tree goes on to reiterate some of its prior arguments to the effect that this project must apparently consider a speculative host of later-induced impacts, and again fails to provide citation to that broad proposition. Once again, we observe that Wild Tree is seeking to relitigate the CEQA process, and we reiterate that doing so is not an available avenue in this proceeding.

Lastly, regarding Wild Tree's arguments that the proposed project is not needed to meet RPS and that CAISO's TPPs demonstrate that the proposed project is not needed, we note its factual errors. First, Wild Tree apparently refers solely to SCE's Application and not to SCE's Amended Application. The distinction is relevant here, as Wild Tree appears to refer only to the limited past RPS references made by SCE in its original Application, while in fact the Amended Application directly addressed future RPS needs (2030 and beyond),

[82] Rule 14.3(c) reads as follows: Comments shall focus on factual, legal or technical errors in the proposed or alternate decision and in citing such errors shall make specific references to the record or applicable law. Comments which fail to do so will be accorded no weight.

to which the decision also speaks. Second, similarly but more aggressively, Wild Tree appears to intentionally misconstrue the meaning of TPPs: as has been made clear throughout this proceeding, they are not iterative but cumulative, building one upon the next: therefore when Wild Tree argues that "old transmission plans are no longer relevant" (Wild Tree comment at 15), it fails to address the reality that each annual TPP assumes that all transmission upgrades previously approved are to be developed as approved.

6. Assignment of Proceeding

Genevieve Shiroma is the assigned Commissioner and Jason Jungreis is the assigned ALJ in this proceeding.

Findings of Fact

1. The ELM Project is necessary to promote the safety, health, comfort, and convenience of the public by improving grid reliability and increasing transmission capacity on the Eldorado-Lugo transmission line, Lugo-Mohave transmission line, and Eldorado-Mohave transmission line.

2. The ELM Project's transmission upgrades are needed to help meet the state's RPS goals.

3. Regarding the ELM Project's geographic Desert Area designation, the Commission's RPS portfolio required all generation to be "fully deliverable," i.e., to be able to achieve FCDS.

4. Based upon the Commission's RPS portfolio, CAISO's TPPs for this Desert Area required all renewable energy resources to be fully deliverable, and this requirement was premised upon transmission upgrades.

5. SCE has a Transmission Control Agreement with CAISO, and Section 24.633 of the CAISO Tariff requires SCE to make a good faith effort to seek approval for the construction of policy-driven transmission projects identified by the CAISO as necessary to support the state's RPS goals.

6. SCE's proposal to construct the ELM Project is pursuant to its obligation to provide the additional ELM line capacity as deemed necessary by the Commission, the CEC, and CAISO.

7. The ELM Project supports LSEs' abilities to procure new RA because it would provide the additional transmission capacity necessary to provide FCDS for generation from within the Desert Area.

8. SCE agreed to comply with the mitigation measures described in the MND, and those mitigation measures are included in the Mitigation Monitoring Plan adopted herewith. (The MND Mitigation Measures and the Applicant's Proposed Measures to be implemented as part of the ELM Project are Appendix A to this decision.)

9. The Commission has reviewed and considered the information in the MND before approving the ELM Project.

10. In determining whether to grant a CPCN for the proposed ELM Project, we have given express consideration to community values, recreational and park areas, historic and aesthetic values, and influence on the environment.

11. The MND concluded, and the record in this proceeding supports the conclusion, that the ELM Project would not generate significant environmental impacts with implementation of the mitigation and avoidance measures

identified in the MND that can be taken to ensure that the ELM Project's environmental effects would be less than significant.

12. The Commission is the lead agency for compliance with the provisions of CEQA. As the lead agency under CEQA, the Commission is required to monitor the implementation of mitigation measures adopted for the ELM Project to ensure full compliance with the provisions of the monitoring program.

13. Portions of the ELM Project are located within the State of Nevada and/or within areas owned, controlled, and governed by federal agencies, and the Commission lacks jurisdiction directly to impose or monitor mitigation measures within such areas.

14. The Commission can require the direct implementation of all mitigation measures within the Mitigation Monitoring Plan on in-state, non-federal land, and the Commission can require that the Applicant implement the same or equally or more effective mitigation measures to those in the Mitigation Monitoring Plan on out-of-state and federal lands and that the Applicant supply data through the mitigation monitoring process to verify implementation of such measures.

15. The MND reflects the Commission's independent judgment and analysis.

16. SCE agrees to undertake EMF measures in its construction of the ELM Project.

17. SCE agrees to undertake safety measures in its construction of the ELM Project.

18. SCE has presented its estimate for the cost of the ELM Project (in 2019 dollars) as $220,000,000 plus a $19 million contingency.

Conclusions of Law

1. After considering and weighing the values of the community, the impacts to parks and recreational areas, the impacts on historical and aesthetic values, and the environmental impacts caused by the project, we conclude that the CPCN for the ELM Project as described in this decision should be granted, with mitigation set forth in the Mitigation Monitoring Plan.

2. Pursuant to Pub. Res. Code §§ 21000 et seq., the MND for the ELM Project was processed and completed in compliance with the requirements of CEQA, and the MND and the record in this proceeding demonstrates there is no substantial evidence that the ELM Project (with implementation of mitigation measures imposed as conditions of approval via the Mitigation Monitoring Plan) would result in any significant impact on the environment.

3. The MND, which includes the Mitigation Monitoring Plan, should be adopted in its entirety, with direction that the Applicant provide evidence satisfactory to Commission staff that the mitigation measures in the Mitigation Monitoring Plan (or equally or more effective mitigation measures) are implemented on lands outside California or within the ownership or control of a federal agency.

4. SCE should obtain all necessary permits, easement rights or other legal authority for the ELM Project site prior to commencing construction.

5. Pursuant to D.93-11-013, and D.06-01-042, possible exposure to EMF has been reduced by the no-cost and low-cost measures SCE included in the ELM Project that are specified in the Amended Application's Field Management Plan.

6. The EMF reduction measures that SCE agrees to undertake in the construction of the ELM Project are reasonable.

7. SCE's EMF management plan for the ELM Project should be adopted, and the Commission should retain authority to review SCE's EMF mitigation plan to ensure that it does not create other adverse environmental impacts.

8. Other cost-effective alternatives to the ELM Project are infeasible and/or would not accomplish the goals of the ELM Project.

9. Notwithstanding the likelihood of cost recovery through FERC wholesale rates, SCE should track its project costs through a memorandum account to be established with the Commission.

10. The safety measures that SCE agrees to undertake in the construction of the ELM Project are reasonable.

11. The cost of the ELM Project as identified in this decision is justified based upon the high degree of the certainty that the ELM Project is needed to ensure development of RPS-eligible resources in the Desert Area.

12. The Commission should approve a maximum reasonable and prudent cost cap under Pub. Util. Code § 1005.5 of $220 million plus a $19 million contingency for this project, subject to the direction set forth in this decision.

13. Pursuant to Pub. Util. Code Section 1005.5(b), at any point during the project, but prior to any expenditures in excess of the cost cap, SCE must file a formal Petition for Modification with the Commission for consideration of a revised determination of the reasonable and prudent maximum cost of the revised ELM Project.

14. Commission approval of SCE's ELM Project application, subject to the direction set forth in this decision, is in the public interest.

15. This order should be effective immediately so that construction of the ELM Project can begin.

16. Application 18-05-007 should be closed.

O R D E R

IT IS ORDERED that:

1. A Certificate of Public Convenience and Necessity is granted to Southern California Edison Company to construct the Eldorado-Lugo-Mohave Series Capacitor Project, conditioned upon compliance with the Mitigation Monitoring Plan found in the Final Mitigated Negative Declaration (with equally or more effective mitigation measures being implemented on lands outside California or under the ownership or control of a federal agency) and the Electric and Magnetic Fields Field Management Plan referenced therein. The Mitigated Negative Declaration's Mitigation Measures and the Applicant's Proposed Measures to be implemented as conditions of this approval are attached as Appendix A to this decision.

2. The Commission's Energy Division may approve requests by Southern California Edison Company (SCE) for minor project refinements that may be necessary due to final engineering of the Eldorado-Lugo-Mohave Series Capacitor Project, so long as such minor project refinements are located within the geographic boundary of the study area of the Mitigated Negative Declaration and do not, without mitigation, result in a new significant impact or increase in severity of an impact; conflict with any mitigation measure or applicable law or

policy; or trigger an additional permit requirement. SCE shall seek any other project refinements by filing a petition for modification of today's decision.

3. Southern California Edison Company shall work with the Commission's Energy Division to create detailed maps for use in construction and mitigation monitoring.

4. Pursuant to Public Utilities Code Section 1005.5(a), the maximum cost cap (in 2019 dollars) determined to be reasonable and prudent for Southern California Edison Company's construction of the Eldorado-Lugo-Mohave Series Capacitor Project is $220,000,000, and up to $19,000,000 in contingency costs as may be applied in accordance with the terms of this decision.

5. Pursuant to Public Utilities Code Section 1005.5(b), at any point during the Eldorado-Lugo-Mohave Series Capacitor Project (Project), but prior to any expenditures in excess of the maximum reasonable and prudent cost determined in this decision, Southern California Edison Company must file a formal Petition for Modification with the Commission for consideration of a revised determination of the reasonable and prudent maximum cost of the Project.

6. Southern California Edison Company (SCE) shall make quarterly information-only submittals to the Commission's Energy Division's CEQA and Federal Energy Regulatory Commission Electric Costs teams providing status updates on the Eldorado-Lugo-Mohave Series Capacitor Project. These status updates shall include, at minimum:

   a. Comprehensive project development schedule (with data organized by month), including estimated project in-service date;
   b. Any changes in project scope and schedule, including the reasons for such changes;

c. Any engineering difficulties encountered in constructing the project;

d. Total estimated project costs;

e. Actual spending to date;

f. Any and all filings submitted to FERC for ultimate cost recovery through transmission rates; and

g. Any additional information SCE believes relevant and necessary to accurately convey the status of the project.

7. Southern California Edison Company's right to construct the Eldorado-Lugo-Mohave Series Capacitor Project as set forth in this decision shall be subject to all other necessary state and local permitting processes and approvals.

8. The Final Mitigated Negative Declaration for the Eldorado-Lugo-Mohave Series Capacitor Project is adopted pursuant to the requirements of the California Environmental Quality Act, Public Resources Code §§ 21000 *et seq*.

9. Upon satisfactory completion of the Eldorado-Lugo-Mohave Series Capacitor Project, Southern California Edison Company shall file a notice of completion with the Executive Director by the Energy Division.

10. Application 18-05-007 is closed.

This order is effective today.

Dated August 27, 2020, at San Francisco, California.

MARYBEL BATJER
President
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
GENEVIEVE SHIROMA

Commissioners

APPENDIX A

The following mitigation measures (MMs) and applicant proposed measures (APMs) shall be implemented as part of the ELM Project.

Aesthetics

MM AES-1 **Minimize visual contrast in project design.** In the final design of approved project structures, SCE shall use design fundamentals that reduce the visual contrast of new facilities with the characteristic landscape. These include surface treatments; siting and location; reduction of visibility; repetition of form, line, color, and texture of the landscape; and reduction of unnecessary disturbance. New and modified transmission structures shall be of a dulled galvanized steel consistent with that of existing structures. SCE shall treat the surfaces of other structures and new buildings visible to the public such that: (a) their colors minimize visual contrast by blending with the characteristic landscape colors; and (b) their colors and finishes do not create excessive glare. The steel used to repair or strengthen structures, new steel structures, and conductors, and OPGW shall have surfaces that are non-specular and non-reflective. Project elements with colored surfaces shall be in hues and tones that do not contrast with the surrounding landscape and are consistent with the palette of natural colors that occur in the area.

- SCE shall provide for review by the CPUC, BLM, and NPS, a draft Project Design and Surface Treatment Plan describing the siting, placement, and other design considerations to be employed to minimize Proposed Project contrast. The draft plan must explain how the design will minimize visual intrusion and contrast by effectively blending earthwork, vegetation manipulation, and facilities with the landscape. The Project Design and Surface Treatment Plan shall describe the colors and textures to be applied to all new facility structures, buildings, walls, fences, and components to be constructed.

- The draft Project Design and Surface Treatment Plan shall be submitted at least 60 days prior to the start of construction. If a reviewing agency notifies SCE that revisions to the plan are needed before the plan can be approved, within 30 days of receiving that notification, SCE shall prepare and submit for review and approval a revised plan.

MM AES-2 **Screen construction activities from view.** To reduce significant impacts associated with construction yards, staging areas, and material and equipment storage areas shall be visually screened using temporary screening fencing, with the exception of construction yards, staging areas, and material and equipment storage areas on existing substation properties. Fencing will be of an appropriate structure, material, and color for each specific location. This requirement shall not apply if SCE can demonstrate that construction yards are located away from areas of high public visibility including public roads, residential areas, and public recreational facilities or the yards are in areas where high winds pose a risk of the screening detaching and creating a hazard. For any site that SCE proposes to exempt from the screening requirement, SCE shall define the site on a detailed map demonstrating its visibility from nearby roads, residences, or recreational facilities to the agency having jurisdiction over the land (CPUC, BLM, or NPS) for review and approval at least 60 days prior to the start of construction at that site.

MM AES-3 **Minimize vegetation removal and ground disturbance.** Only the minimum amount of vegetation necessary for the construction of structures and facilities shall be removed during construction. In particular, vegetation within the ROW and ground clearing at the foot of each tower and between towers shall be limited to the clearing necessary to com-

ply with requirements of CPUC General Order 95 and other regulatory requirements. Scars from temporary work areas and access road may be highly visible when located on hill slopes and along ridges, or when visible from elevated vantage points. In order to reduce visual impacts, the boundaries of all areas to be disturbed shall be delineated consistent with the requirements of Biological Resources Mitigation Measure BR-3. Staking, flagging, or other appropriate means shall define construction work areas, such as capacitor site grading areas, staging yards, and pulling sites. Stakes and flagging shall be installed before construction and in consultation with the Project Biologist and the agency's Environmental Monitor or Visual Specialist. Areas staked or flagged shall be as small as possible in order to minimize the visibility of ground disturbance from sensitive viewing locations such as roads, trails, residences, and recreation facilities and areas. Parking areas and staging and disposal site locations shall be similarly located in areas approved by the Project Biologist and the agency's Environmental Monitor or Visual Specialist prior to the start of construction. All disturbances by Proposed Project vehicles and equipment shall be confined to the staked and flagged areas.

MM AES-4 **Minimize night lighting at new project facilities.** At the project's new in-line series capacitors and fiber optic repeater facilities, SCE shall avoid night lighting where possible and minimize its use under all circumstances. To ensure this, SCE shall implement the following general principles and specifications:

When used, portable truck-mounted lighting shall point away from roads and from residences within 1,000 feet.

White lighting (metal halide & LED) (a) shall be used only when necessitated by specific work tasks; and (b) shall be less than 5000 Kelvin color temperature.

All lamp locations, orientations, and intensities shall be the minimum needed for safety and security.

Light fixtures that could be visible from beyond project facility boundaries shall have cutoff angles sufficient to prevent lamps and reflectors from being visible beyond the project facility boundary, including security lighting.

If security lighting is installed, motion sensors are to be used to activate the security lighting; lights shall operate continuously only when the area is occupied.

All temporary construction lighting, including at yards, and all permanent exterior lighting shall include: (a) lamps and reflectors that are not visible from beyond the construction site or facility including any off-site security buffer areas; (b) lighting that does not cause excessive reflected glare; and (c) directed lighting that does not illuminate the nighttime sky, except for required FAA aircraft safety lighting, if required.

Lighted nighttime maintenance is to be minimized or avoided as a routine practice and should occur only during emergencies.

Air Quality

MM AQ-1 **Prepare and implement a Dust Control Plan.** SCE shall minimize visible fugitive dust emissions by implementing the following dust control measures derived from MDAQMD Rule 403.2. Prior to commencing earth-moving activity, SCE shall prepare and submit to the MDAQMD, Clark County DAQ, CPUC, BLM and NPS a Dust Control Plan that describes all

dust control measures that will be implemented for the project, including, but not limited to:

Use periodic watering for short-term stabilization of disturbed surface area to minimize visible fugitive dust emissions. If used, non-water-based or chemical soil stabilizers and dust suppressants shall be non-toxic and must not cause loss of vegetation, adverse odors, or additional emissions of ozone precursor reactive organic gases (ROG) or volatile organic compounds (VOC).

Provide stabilized access route(s) to the project site as soon as is feasible and enforce a maximum 15 mile per hour vehicle speed limit on any unpaved surface.

Stabilize graded site surfaces upon completion of grading when subsequent development is delayed or expected to be delayed more than thirty days, except when such a delay is due to precipitation that dampens the disturbed surface sufficiently to eliminate visible fugitive dust emissions.

Maintain natural topography to the extent possible.

Construct parking lots and paved areas first, where feasible.

Take actions sufficient to prevent project-related trackout or spills onto paved surfaces and cleanup within 24 hours.

Cover loaded haul vehicles while operating on publicly maintained paved surfaces.

Reduce non-essential earth-moving activity under high wind conditions, gusts exceeding 25 miles per hour.

APM AIR-01 **Fugitive Dust.** During construction, fugitive dust would be controlled by implementing the following measures:

- Surfaces disturbed by construction activities would be covered or treated with a dust suppressant or water until the completion of activities at each site of disturbance.
- Inactive disturbed (e.g., excavated or graded areas) soil and soil piles would be sufficiently watered or sprayed with a soil stabilizer to create a surface crust or would be covered.
- Drop heights from excavators and loaders would be minimized to a distance of no more than 5 feet. Vehicles hauling soil and other loose material would be covered with tarps or maintain at least 6 inches of freeboard.
- Within Nevada, vehicle speeds on unpaved traffic and parking areas would be restricted to 15 miles per hour. In California, vehicle speeds on unpaved roadways would adhere to all posted speed limits.
- Within Nevada, unpaved non-public traffic and parking areas designated for utilization during Proposed Project construction would be effectively stabilized to control dust emissions (e.g., using water or chemical stabilizer/suppressant). In California, unpaved non-public traffic and parking areas designated for utilization during Proposed Project construction would be effectively stabilized to control dust emissions with a chemical stabilizer/suppressant.

APM AIR-02 **Tier 4 Engines.** Off-road diesel construction equipment with a rating between 100 and 750 horsepower would be required to use engines compliant with the U.S. Environmental Protection Agency's final Tier 4 non-road engine standards. In the event that a Tier 4 engine

is not available, the equipment would be equipped with a Tier 3 engine and documentation would be provided from a local rental company stating that the rental company does not currently have the required diesel-fueled, off-road construction equipment, or that the vehicle is specialized and is not available to rent. Similarly, if a Tier 3 engine is not available, that equipment would be equipped with a Tier 2 or 1 engine, and documentation of unavailability would be provided.

APM AIR-03 **Idling.** Equipment would not be left idling in excess of five minutes, except when idling is required for the equipment to perform its task or has a California clean-idle sticker.

APM AIR-04 **Equipment Maintenance.** Diesel engines would be maintained in good working order and according to manufacturer's specifications to reduce emissions.

APM AIR-05 **Ridesharing.** Workers would be encouraged to carpool to work sites, and/or utilize public transportation for employee commutes.

Biological Resources

MM BR-1 **Conduct biological monitoring and reporting.** The following provisions shall apply to the approved project during the construction and post-construction restoration phases.

- **Lead biologist:** SCE shall propose one or more lead biologists and submit their resume(s) to the CPUC and BLM for concurrence, no less than 60 days prior to the start of any ground-disturbing activities, including those occurring prior to site mobilization (including, but not limited to geotechnical borings or hazardous waste evaluations). At minimum the lead biologist will hold a bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field; have at least three years of experience in field biology and at least one year of direct field experience with biological resources found in or near the project area, *OR* relevant education and experience that demonstrates the ability to carry out the tasks required of a lead biologist. The resume shall demonstrate to the satisfaction of the CPUC and BLM the appropriate education and experience to accomplish the assigned biological resources tasks.

- The lead biologist will be SCE's primary point of contact to CPUC, BLM, NPS, CDFW, and USFWS regarding any biological resources issues and implementation of related mitigation measures and permit conditions throughout project construction and post-construction restoration work. In addition, the lead biologist will oversee supervision and training of biological monitors (below) and preparation and submission of all monitoring reports and notifications (below).

- If the lead biologist is replaced, the specified information of the proposed replacement must be submitted to the CPUC and BLM at least ten working days prior to the termination or release of the preceding lead biologist. In an emergency, SCE shall immediately notify the CPUC and BLM to discuss the qualifications and approval of a short-term replacement while a permanent lead biologist is proposed for consideration.

- **Biological monitors:** SCE shall assign qualified biological monitors to the project to monitor all work activities with the potential to impact special status species or their habitat during the construction phase. Work sites or activities considered to have not potential to impact special-status species or habitats will be subject to review and approval by CPUC in coordination with CDFW, USFWS, and BLM.

- Monitors are responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, and sensitive or unique biological resources are avoided or minimized to the fullest extent safely possible. Monitors are also responsible to ensure that work activities are conducted in compliance with the retained APMs, mitigation measures, permit conditions, and other project requirements.

- Resumes of all biological monitors, including specialty monitors (including but not limited to bat, nesting bird, and special-status species monitors), shall be provided for concurrence by the CPUC and BLM, at least 10 working days prior to the monitor commencing field duties. The resumes shall demonstrate, to the satisfaction of the CPUC and BLM, the appropriate education and experience to accomplish the assigned biological resources tasks.

- SCE shall provide training to biological monitors, in addition to WEAP (see Mitigation Measure BR-2) and prior to the monitor commencing field duties, on biological resources present or potentially present on the Proposed Project, as well as mitigation measures, permit requirements, project protocols, and the duties and responsibilities of a biological monitor.

- Biological monitors shall inform construction crews daily of any environmentally sensitive areas (ESAs), nest buffers, or other resource issues or restrictions that affect the work sites for that day. Biological monitors shall communicate with construction supervisors and crews as needed (e.g., at daily tailgate safety meetings ("tailboards"), by telephone, text message, or email) to provide guidance to maintain compliance with mitigation measures and permit conditions. SCE shall ensure that adequate numbers of monitors are assigned to effectively monitor work activities and that communications from biological monitors are promptly directed to crews at each work site for incorporation into daily work activities. If biological monitors are unavailable for a tailboard meeting, the construction supervisors shall communicate all ESA, nest buffers, or other resource restrictions to crews during the meeting. SCE shall ensure that biological monitors are provided with an accurate daily construction work schedule as well as updated information on any alterations to the daily construction work schedule. This information shall also be provided to CPUC/BLM monitors. SCE shall ensure that biological monitors are provided with up-to-date biological resource maps and construction maps in hardcopy or digital format. These maps shall also be provided to CPUC/BLM monitors.

- Monitors shall be familiar with the biological resources present or potentially present, ESAs, nest buffers, and any other resource issues at the site(s) they are monitoring, as well as the applicable mitigation measures and permit requirements. Monitors shall exhibit diligence in their monitoring duties and refrain from any conduct or potential conflict of interest that may compromise their ability to effectively carry out their monitoring duties.

- **Biological monitor duties and responsibilities:** Throughout the duration of construction, SCE shall conduct biological monitoring and have biological monitors on site at all times when project activities are occurring in any area where there is a potential to impact sensitive biological resources or jurisdictional waters, including but not limited to vegetation removal/trimming/disturbance, all ground-disturbing work activities, and initial "drive and crush" in the project area, including work sites, yards, staging areas, access roads, and any area subject to project disturbance. Pre-construction activities (e.g.,

for geotechnical borings, hazardous waste evaluations, etc.) and post-construction restoration shall also be monitored by a biological monitor during all such activities.

- Each day, prior to work activities at each site, a biological monitor shall conduct clearance surveys ("sweeps") for sensitive plant or wildlife resources that may be located within or adjacent to the construction areas. If sensitive resources are found, the biological monitor shall take appropriate action as defined in all adopted mitigation measures, retained APMs, and permit conditions. Work activities shall not commence at any work site until the clearance survey has been completed and the biological monitor communicates to the contractor that work may begin.

- Biological monitors shall clearly mark sensitive biological resource areas with staking, flagging, or other appropriate materials that are readily visible and durable. The monitors will inform work crews of these areas and the requirements for avoidance and will inspect these areas at appropriate intervals for compliance with regulatory terms and conditions. The biological monitors shall ensure that work activities are contained within approved disturbance area boundaries at all times.

- Biological monitors shall have the authority and responsibility to halt any project activities that are not in compliance with applicable mitigation measures, retained APMs, permit conditions, or other project requirements, or will have an unauthorized adverse effect on biological resources.

- Handling, relocation, release from entrapment, or other interaction with wildlife shall be performed consistent with mitigation measures, safety protocols, permits (including CDFW and USFWS permits), and other project requirements.

- Biological monitors shall, to the extent safe, practicable, and consistent with mitigation measures and permit conditions, actively or passively relocate wildlife out of harm's way. On a daily basis, biological monitors shall inspect construction areas where animals may have become trapped, including equipment covered with bird exclusion netting, and release any trapped animals. Daily inspections shall also include areas with high vehicle activity (e.g., yards, staging areas), to locate animals in harm's way and relocate them if necessary. If safety or other considerations prevent biological monitors from aiding trapped wildlife or wildlife in harm's way, SCE shall consult with the construction contractor, CDFW, wildlife rehabilitator, or other appropriate party to obtain aid for the animal, consistent with Mitigation Measure BR-7 (Ensure wildlife impact avoidance and minimization).

- At the end of each work day, biological monitors shall verify that excavations, open tanks, and trenches have been covered or have ramps installed to prevent wildlife entrapment and communicate with work crews to ensure these structures are installed and functioning properly.

- Biological monitors shall regularly inspect any wildlife exclusion fencing daily to ensure that it remains intact and functional. Any need for repairs to exclusion fencing shall be immediately communicated to the responsible party, and repairs shall be carried out in a timely manner, generally within one work day.

- **Reporting:** SCE shall prepare and implement a procedure for communication among biological monitors and construction crews, to ensure timely notification (i.e., daily or sooner, as needed) to crews of any resource issues or restrictions. SCE will notify the CPUC and BLM of the procedure and will maintain records of daily communication.

SCE will provide CPUC and BLM on-line access to project resource management maps and GIS data.

- Monitoring activities shall be thoroughly and accurately documented on a daily basis. SCE shall prepare and submit daily, weekly, annual, and final monitoring reports to the CPUC and BLM. Prior to the start of monitoring activities, SCE shall provide proposed monitoring report formats, describing content and organization, for CPUC and BLM review and approval in consultation with CDFW and USFWS.

MM BR-2 **Prepare and implement a Worker Environmental Awareness Program (WEAP).** SCE shall prepare and implement a project-specific Worker Environmental Awareness Program (WEAP) to educate on-site workers about the Proposed Project's sensitive environmental issues. The WEAP shall be presented by the lead biologist or a biological monitor to all personnel on-site during the construction phase, including but not limited to surveyors, engineers, inspectors, contractors, subcontractors, supervisors, employees, monitors, visitors, and delivery drivers. If the WEAP presentation is recorded on video, it may be presented by any competent project personnel. Throughout the duration of construction, SCE shall be responsible for ensuring that all on-site project personnel receive this training prior to beginning work. A construction worker may work in the field along with a WEAP-trained crew for up to 5 days prior to attending the WEAP training. SCE shall maintain a list of all personnel who have completed the WEAP training. This list shall be provided to the CPUC and BLM upon request.

- The WEAP shall consist of a training presentation, with supporting written materials provided to all participants. At least 60 days prior to the start of ground-disturbing activities, SCE shall submit the WEAP presentation and associated materials to the CPUC and BLM for review and approval in consultation with the USFWS and CDFW.

- The WEAP training shall include, at minimum:

Overview of the project, the jurisdictions the project route passes through (e.g., San Bernardino County, CA; Clark County, Nevada; CSLC; BLM; NPS; BOR; DOD) and any special requirements of those jurisdictions.

Overview of the federal and state Endangered Species Acts, Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and the consequences of non-compliance with these acts.

Overview of the project mitigation and biological permit requirements, and the consequences of non-compliance with these requirements.

Sensitive biological resources on the project site and adjacent areas, including nesting birds, special-status plants and wildlife and sensitive habitats known or likely to occur on the project site, project requirements for protecting these resources, and the consequences of non-compliance.

Construction restrictions such as limited operating periods, Environmentally Sensitive Areas (ESAs), and buffers and associated restrictions, and other restrictions such as no-grading areas, flagging, or signage designations, and consequences of non-compliance.

Avoidance of invasive weed introductions onto the project site and surrounding areas, and description of the project's weed control plan and associated compliance requirements for workers on the site.

Function, responsibilities, and authority of biological and environmental monitors and how they interact with construction crews.

Requirement to remain within authorized work areas and on approved roads, with examples of the flagging and signage used to designate these areas and roads, and the consequences of non-compliance.

Procedure for obtaining clearance from a biological monitor to enter a work site and begin work (including moving equipment), and the requirement to wait for that clearance.

One-hour hold (or other method SCE will use to halt work when necessary to maintain compliance) and the requirement for compliance.

Nest buffers and associated restrictions and the consequences of non-compliance. Procedure and time frame for halting work and removing equipment when a new buffer is established. Discussion of nest deterrents.

Explanation that wildlife must not be harmed or harassed. Procedures for covering pipes, securing excavations, and installing ramps to prevent wildlife entrapment. What to do and who to contact if dead, injured, or entrapped animals are encountered.

General safety protocols such as hazardous substance spill prevention, containment, and cleanup measures; fire prevention and protection measures; designated smoking areas (if any) and cigarette disposal; safety hazards that may be caused by plants and animals; and procedure for dealing with rattlesnakes in or near work areas or access roads.

Project requirements that have resulted in repeated compliance issues on other recent transmission line projects, such as dust control, speed limits, track out (dirt or mud tracked from access roads or work sites onto paved public roads or other areas), personal protective equipment (PPE), work hours, working prior to clearance, and waste containment and disposal.

Printed training materials, including photographs and brief descriptions of all special-status plants and animals that may be encountered on the project, including behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures.

Contact information for SCE, construction management, and contractor environmental personnel, and who to contact with questions.

Training acknowledgment form to be signed by each worker indicating that they understand and will abide by the guidelines, and a hardhat sticker so WEAP attendance may be easily verified in the field.

- **WEAP Lite.** An abbreviated version of WEAP training (“WEAP lite”) may be used for individuals who are exclusively delivery drivers, concrete truck drivers, or visitors to the project site, and will be provided by a qualified project biologist, biological monitor, or environmental field staff prior to those individuals entering or working on the project. Short-term visitors (total of 5 days or less per year) to the project site who will be riding with and in the company of WEAP-trained project personnel for the entire duration of their visit(s) are not required to attend WEAP or WEAP lite training. WEAP lite presentations shall be tailored to delivery/concrete truck drivers and visitors as well as the situation and emphasize project requirements that are relevant to those individuals and that situation.

- **WEAP Refreshers.** Biological monitors or environmental field staff will periodically present brief WEAP refresher presentations at tailboards to help construction crews and other personnel maintain awareness of environmental sensitivities and requirements. A 5- to 10-minute informal talk will be presented at each of the project's main contractor/subcontractor tailboards at least once a week.

- When a contractor or subcontractor resumes work after a long break, a biological monitor or environmental field staff will provide an extended WEAP refresher presentation (10-20 minutes) at each of the contractor/subcontractor tailboards on the first day back to work.

MM BR-3 **Minimize native vegetation and habitat loss.** Final engineering of the project shall minimize the extent of disturbance and removal of native vegetation and habitat, to the extent safely possible. Work activities and roadways will avoid or minimize direct or indirect effects to sensitive habitat types or jurisdictional waters and provide buffer areas to minimize disturbance. Project access will utilize existing routes or bridges over jurisdictional waters wherever possible.

- Consistent with project safety and security protocols, landowner preferences, and any other applicable regulations or requirements, existing gates on project access roads will be closed and secured when project personnel enter or leave an area.

- Prior to beginning any ground-disturbing activities, SCE shall provide CPUC and BLM with final engineering GIS shapefiles depicting all temporary and permanent disturbance areas, as well as summary data on temporary and permanent disturbance for each vegetation or habitat type.

- On completion of project construction, SCE shall provide CPUC and BLM with GIS shapefiles of all actual temporary and permanent disturbance areas, accurate aerial imagery of the project area, and summary data of all discrepancies between final engineering and "as-built" conditions for each vegetation or habitat type.

- To the extent feasible and safe, vegetation removal within work areas will be minimized and construction activities will implement drive and crush access and site preparation rather than grading. Stockpiling of spoils and salvaged topsoil will be located in previously disturbed areas and/or will avoid native habitat areas.

- Prior to any construction, equipment or crew mobilization at each work site, work areas will be marked with staking or flagging to identify the limits of work and will be verified by project environmental staff and CPUC Environmental Monitor. Staking and flagging will clearly indicate the work area boundaries. Where staking cannot be used, traffic cones, traffic delineators, or other markers shall be used. Staking and flagging or other markers shall be in place during construction activities at each work site and refreshed as needed. Coded flagging colors or color combinations will be consistent and uniform across the project. All work activities, vehicles, and equipment will be confined to approved roads and staked and flagged or marked work areas.

MM BR-4 **Restore or revegetate temporary disturbance areas.** [Replaces APM BIO-01 to provide further specificity.] SCE will implement a restoration or revegetation plan for all temporarily disturbed sites. Given that temporary impacts to desert tortoise habitat is considered a permanent impact in this MND and under BLM's Programmatic Biological Opinion (BO) provides federal take authorization for the Project, SCE will mitigate for all desert tortoise habitat impacts as permanent impacts through compensatory mitigation. These tempo-

rarily disturbed sites will be subject to revegetation (i.e., re-establishment of vegetation to minimize long-term erosion, dust, and weed infestation) but habitat restoration will not be required. SCE will be required to implement habitat restoration at temporarily disturbed sites not mitigated through off-site compensation. SCE will provide a Habitat Restoration and Revegetation Plan (HRRP) to cover all temporarily disturbed sites, identifying sites to be subject to revegetation alone and those to be restored. The HRRP will describe, at a minimum, which revegetation or restoration method (e.g., natural revegetation, planting, or reseeding with native seed stock in compliance with the Proposed Project's SWPPPs) will be implemented at each temporarily disturbed site. It will include the plant species or habitats to be restored or revegetated, the restoration or revegetation methods and techniques, and the monitoring periods and success criteria.

- All temporarily disturbed areas will be subject to revegetation and site management activities and success criteria of the Proposed Project's SWPPP/Erosion Control Plan (HWQ-1) and the Integrated Weed Management Plan (BR-5) to ensure soil stabilization, vegetation cover, and weed prevention. In addition to those requirements, for any temporarily disturbed area not subject to compensatory mitigation (BR-8), the HRRP shall include:

Restoration goals and objectives for each portion of the project area, based on vegetation type and jurisdictional status of each site.

Quantitative success criteria for each restoration site, area, or category.

Implementation details, including but not limited to topsoil stockpiling and handling; post-construction site preparation; soil decompaction and recontouring; planting and seeding palettes to include only native, locally sourced materials with confirmed availability from suppliers; fall or other suitable season planting or seeding dates (seeding outside the fall season may increase the risk of revegetation failure and need for subsequent remedial reseeding, irrigation, or other measures).

Maintenance details, including but not limited to irrigation or hand-watering schedule and equipment, erosion control, and weed control measures.

Monitoring and Reporting, specifying monitoring schedule and data collection methods throughout establishment of vegetation with key indicators of successful or unsuccessful progress, and quantitative criteria to objectively determine success or failure at the conclusion of the monitoring period.

Contingency measures such as reseeding, replanting, drainage repairs, adjustments to irrigation or weeding schedule, and extension of maintenance beyond the original schedule, to repair or remediate sites not on track to meet success criteria, or not meeting the criteria at the close of the originally scheduled monitoring period.

A Gantt chart or similar exhibit identifying all components of the HRRP, including acquisition of plant materials, specifying site preparation and seeding or planting dates, identifying entity to perform each task (e.g., EPC contractor or restoration contractor) and indicating critical path activities.

- The Draft HRRP shall be submitted to CPUC and BLM review and approval prior to the beginning of ground-disturbing activities. SCE shall incorporate all requested revisions in coordination with the CPUC and BLM and finalize the HRRP within 12 months from the start of construction.

- For all restoration areas, if a fire, flood, or other disturbance beyond the control of SCE, CPUC, and BLM damages the area within the monitoring period, SCE shall be responsible for a one-time replacement. If a second event occurs, no replacement is required.

- For all revegetation (per SWPPP requirements) or restoration sites (per the HRRP), only seed or potted nursery stock of locally occurring native species will be used. Seeding and planting will be informed by Chapter 5 of *Rehabilitation of Disturbed Lands in California* (Newton and Claassen, 2003). The list of plants observed during botanical surveys of the project area will be used as a guide to site-specific plant selection.

- Monitoring of the restoration sites will continue annually for up to 5 years or until the defined success criteria in the HRRP are achieved. SCE will be responsible for implementing remediation measures as needed. Following remediation work, each site will still be subject to the success criteria required for the initial restoration. The monitoring period for remediation work will be concurrent with the monitoring period required for the initial restoration.

- **Reporting.** For all restoration areas, SCE will provide annual reports to the CPUC and BLM verifying the total vegetation acreage subject to temporary and permanent disturbance, identifying which items of the HRRP have been completed, and which items are still outstanding. The annual reports will also include a summary of the restoration activities for the year, a discussion of whether success criteria were met, any remedial actions conducted and recommendations for remedial action, if warranted, that are planned for the upcoming year. Each annual report will be submitted within 90 days after completion of each year of restoration work.

MM BR-5 **Prepare and Implement an Integrated Weed Management Plan.** [Supersedes APM BIO-03.] SCE shall prepare and implement an Integrated Weed Management Plan (IWMP) describing the proposed methods of preventing or controlling project-related spread or introduction of weeds. The IWMP also must meet BLM's requirements for NEPA disclosure and analysis if herbicide use is proposed for the project. A Draft IWMP shall be submitted to the CPUC and BLM for review and approval at least 60 days prior to SCE's application for Notice to Proceed, and no pre-construction activities (e.g., for geotechnical borings, hazardous waste evaluations, etc.), construction, equipment or crew mobilization, or project-related ground-disturbing activity shall proceed until the IWMP is approved.

- For the purpose of the IWMP, "weeds" shall include designated noxious weeds, as well as any other non-native weeds or pest plants identified on the weed lists of the California Department of Food and Agriculture, the California Invasive Plant Council, or identified by BLM as special concern. The IWMP will include the contents listed below. The IWMP will be implemented throughout project pre-construction, construction, and post-construction revegetation phases, including throughout implementation of the HRRP (Mitigation Measure BR-4). The IWMP will include the information defined in the following paragraphs.

- **Background.** An assessment of the Proposed Project's potential to cause spread of invasive non-native weeds into new areas, or to introduce new non-native invasive weeds into the ROW. This section must list known and potential non-native and invasive weeds occurring on the ROW and in the project region, and identify threat rankings and potential consequences of project-related occurrence or spread for each species. This

section must also identify control goals for each species (e.g., eradication, suppression, or containment) likely to be found within the Proposed Project area.

- **Pre-construction weed inventory.** SCE shall inventory weeds in all areas (both within and outside the ROW) subject to project-related vegetation removal/disturbance, "drive and crush," and ground-disturbing activity. The weed inventory shall also include vehicle and equipment access routes within the ROW and all project staging and storage yards. Weed occurrences shall be mapped and described according to density and area covered.

- **Pre-construction weed treatment.** Weed infestations identified in the pre-construction weed inventory shall be evaluated to identify potential for project-related spread and potential benefits (if any) of pre-construction treatment, considering the specific weeds, potential see banks, or other issues. The IWMP will identify any infestations to be controlled or eradicated prior to project construction, or other site-specific weed management requirements (e.g., avoidance of soil or transport and site-specific vehicle washing where threat or spread potential is high). Control and follow-up monitoring of pre-construction weed treatment sites will follow methods identified in appropriate sections of the IWMP.

- **Prevention.** The IWMP shall specify methods to minimize potential transport of new weed seeds onto the ROW, or from one section of the ROW to another. The ROW may be divided into "weed zones," based on known or likely invasive weeds in any portion of the ROW. The IWMP will specify inspection procedures for construction materials and equipment entering the Proposed Project area. Vehicles and equipment may be inspected and cleaned at entry points to specified portions of the ROW, and before leaving work sites where weed occurrences must be contained locally. Construction equipment shall be cleaned of dirt and mud that could contain weed seeds, roots, or rhizomes. Equipment shall be inspected to ensure it is free of any dirt or mud that could contain weed seeds, and the tracks, outriggers, tires, and undercarriage will be carefully washed, with special attention being paid to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that will be frequently entering and exiting the site will be inspected and washed on an as-needed basis. Tools such as chainsaws, hand clippers, pruners, etc., shall be cleaned of dirt and mud before entering project work areas.

- All vehicles shall be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations will be set up at specified locations to clean equipment before it enters the work area. Wash stations will be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations will not be allowed to run off the cleaning station site. When vehicles and equipment are washed, a daily log must be kept stating the location, date and time, types of equipment, methods used, and personnel present. The log shall contain the signature of the responsible crewmember. Written or electronic logs shall be available to BLM and CPUC monitors on request.

- Erosion control materials (e.g., hay bales) must be certified free of weed seed before they are brought onto the site. The IWMP must prohibit on-site storage or disposal of mulch or green waste that may contain weed material. Mulch or green waste will be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.

- The IWMP must specify guidelines for any soil, gravel, mulch, or fill material to be imported into the Proposed Project area, transported from site to site within the Proposed Project area, or transported from the Proposed Project area to an off-site location, to prevent the introduction or spread of weeds to or from the Proposed Project area.

- **Monitoring.** The IWMP shall specify methods to survey for weeds during pre-construction, construction, and restoration phases; and shall specify qualifications of botanists responsible for weed monitoring and identification. It must include a monitoring schedule to ensure timely detection and immediate control of new weed infestations to prevent further spread. Surveying and monitoring for weed infestations shall occur at least two times per year through the close of the restoration phase, to coincide with the early detection period for early season and late season weeds (i.e., species germinating in winter and flowering in late winter or spring, and species germinating later in the season and flowering in summer or fall). It also must include methods for marking invasive weeds on the ROW, and recording and communicating these locations to weed control staff. The map of weed locations (discussed above) shall be updated at least once a year. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.

- **Control.** The IWMP must specify manual and chemical weed control methods to be employed. The IWMP shall include only weed control measures with a demonstrated record of success for target weeds, based on the best available information. The plan shall describe proposed methods for promptly scheduling and implementing control activity when any weed infestation is located (e.g., located on a project disturbance site), to ensure effective and timely weed control. Weed infestations must be controlled or eradicated upon discovery, and before they go to seed, to the extend feasible with the goal to prevent further spread. All proposed weed control methods must minimize the extent of any disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage from herbicide use or other control methods to any environmentally sensitive areas identified within or adjacent to the ROW.

- New weed infestations shall be treated at a minimum of once annually until eradication, suppression, or containment goals are met. For eradication, when no new occurrences are observed for three consecutive years, the weed occurrence can be considered eradicated and weed control efforts may cease for the site.

- Manual control shall specify well-timed removal of weeds or their seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the San Bernardino County Agricultural Commissioner and Nevada Department of Agriculture, if such guidelines are available.

- The chemical control section must include specific and detailed plans for any herbicide use. It must indicate where herbicides will be used, which herbicides will be used, and specify techniques to be used to avoid drift or residual toxicity to wildlife and native vegetation or special-status plants, consistent with BLM's *Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States* (BLM, 2007) and *National Invasive Species Management Plan* (NISC, 2008). Only state and BLM-approved herbicides may be used. Herbicide treatment will be implemented by a Licensed Qualified Applicator. Herbicides shall not be applied during or within 24 hours of predicted rain. Only water-safe herbicides shall be used in riparian areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied when wind velocities exceed six (6) mph. All herbicide applications will follow U.S.

Environmental Protection Agency label instructions and will be in accordance with federal, state, and local laws and regulations.

- **Reporting schedule and contents.** The IWMP shall specify the reporting schedule and contents of each report.

MM BR-6 **Minimize and mitigate impacts to special-status plants.** [Supersedes APM BIO-02.]

- **Pre-construction survey.** SCE shall conduct focused pre-construction surveys for federal- and state-listed and other special-status plants within suitable habitat. All special-status plant species (including listed threatened or endangered species, and CNPS California Rare Plant Rank (CRPR) 1 and 2 ranked species likely to be impacted by project activities shall be documented in pre-construction survey reports. Surveys shall be conducted by a qualified botanist during the appropriate season in all suitable habitat within 50 feet of disturbance areas. The field surveys and reporting must conform to current CDFW botanical field survey protocol (CDFG, 2018). Where any special-status plants may be discovered, the survey area will extend beyond the ROW to determine the extent of the local occurrence, to evaluate the significance of any project impacts. The reports will describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seed or below-ground rootstock. If pre-construction survey areas conducted in years of poor rainfall or following other extreme events (e.g., recent intense overgrazing or wildfire), then the project shall use data from 2016/2017 and 2019 surveys to define population area and maximum number of individuals (Note, the unusually high rainfall in 2017 and 2019 are likely to better define rare plant locations and have more accurate results than subsequent years with lower rainfall). For species not previously detected on surveys but for which have a high potential to occur, reference populations will be used to determine if the species is detectable for pre-construction surveys conducted in suitable habitat. Prior to initial ground disturbance at individual construction work areas, SCE shall submit pre-construction field survey reports along with maps showing locations of survey areas and special-status plants to the CPUC and BLM for review and approval in coordination with CDFW.

- **Native cactus and *Yucca*.** Most native cactus and shrubby *Yucca* species (Joshua tree and Mojave yucca) can be successfully salvaged and transplanted, and yuccas often provide an important vertical component to wildlife habitat. Therefore, native cactus (excluding chollas in the genus *Cylindropuntia*) and yuccas (including Joshua trees, *Y. brevifolia*), shall be avoided or salvaged as follows:

- SCE will prepare and implement a cacti and yucca salvage plan. The goal shall be maximum practicable survivorship of salvaged plants. The Plan will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether an individual plant is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or seed banks, to retain intact soil conditions and maximize success; (e) a requirement to mark each plant to identify the north-facing side prior to transport, and replant it in the same orientation; (f) details regarding storage of plants or seed banks for each species; (g) location of the proposed recipient site, and detailed site preparation and plant introduction techniques for top soil storage, as applicable; (h) a description of the irrigation, weed control, and other maintenance activities; (i) success criteria, including specific timeframe for survivorship and reproduction of each species; and (j) a detailed monitoring program, commensurate with the Plan's goals.

- **Mitigation.** SCE shall mitigate impacts to any state or federally listed plants or CRPR 1 or Nevada ranked S1, S2, or S3 species that may be located on the project disturbance areas or surrounding buffer areas through one or a combination of the following strategies. Additionally, impacts to CRPR 2 ranked plants occurring in California will be similarly mitigated.

- Avoidance of special-status plants will be the preferred strategy wherever feasible. Where avoidance is not feasible, and the project would directly or indirectly affect more than 10 percent of a local occurrence,[83] by either number of plants (shrubs and trees) or extent of occupied habitat (annuals or perennial herbs), SCE shall prepare and implement a mitigation plan to consist of off-site compensation, salvage, horticultural propagation / off-site introduction, or a combination of these.

Avoidance. Work areas shall be located to avoid or minimize impacts to special-status plants to the greatest extent possible. Effective avoidance through project design shall include a buffer area surrounding each avoided occurrence, where no project activities will take place. The buffer area will be clearly staked, flagged, and signed for avoidance prior to the beginning of ground-disturbing activities, and maintained throughout the construction phase. At minimum, the buffer for shrub species shall be equal to twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. The buffer for herbaceous species shall be a minimum of 50 feet from the perimeter of the occupied habitat or the individual(s). However, for locations in the mountains, a larger buffer may need to be applied to shrub and herbaceous species if the construction monitors determine there is a risk of indirect effects from erosion or inundation. If a smaller buffer is necessary due to other project constraints, SCE will develop and implement site-specific monitoring and put other measures in place to avoid the take of the species, with the approval of the CPUC and BLM, in coordination with CDFW.

Off-site compensation. SCE shall provide compensation lands consisting of habitat occupied by the impacted CRPR 1 or 2 ranked plant populations at a 1:1 ratio of acreage and number of plants for any occupied habitat directly impacted (whether temporary or permanent) by the project. Occupied habitat will be calculated on the project site and on the compensation lands as including each special-status plant occurrence and a surrounding 50-foot buffer area. If compensation is selected as a means of mitigating special-status plant impacts, it may be accomplished by purchasing credit in an established mitigation bank, acquiring conservation easements, or direct purchase and preservation of compensation lands. Compensation for these impacts may be "nested" or "layered" with compensation for habitat loss described in Mitigation Measure BR-8.

Salvage. SCE shall consult with a qualified restoration ecologist or horticulturist regarding the feasibility and likely success of salvage efforts for each species. If salvage is deemed to be feasible, based on prior success with similar species, then SCE shall prepare and implement a Special-status Plant Salvage and Relocation Plan, to be reviewed and approved by the CPUC and BLM, in consultation with CDFW and USFWS, prior to direct

[83] An occurrence for a plant is defined as any population or group of nearby populations located more than 0.25 miles from any other population (CDFW, 2009).

or indirect disturbance of any occupied habitat. For special-status plants, excluding cacti and Yuccas (see above), the goal shall be to improve existing populations or establish new populations. For cacti and yuccas, the goal shall be maximum practicable survivorship of salvaged plants. The Plan will include at minimum: (a) species and locations of plants identified for salvage; (b) criteria for determining whether an individual plant is appropriate for salvage; (c) the appropriate season for salvage; (d) equipment and methods for collection, transport, and re-planting plants or seed banks, to retain intact soil conditions and maximize success; (e) for shrubs, cacti, and yucca, a requirement to mark each plant to identify the north-facing side prior to transport, and replant it in the same orientation; (f) details regarding storage of plants or seed banks for each species; (g) location of the proposed recipient site, and detailed site preparation and plant introduction techniques for top soil storage, as applicable; (h) a description of the irrigation, weed control, and other maintenance activities; (i) success criteria, including specific timeframe for survivorship and reproduction of each species; and (j) a detailed monitoring program, commensurate with the Plan's goals.

- Annual monitoring reports shall be submitted to CPUC and BLM for five years or until the relocation effort is deemed successful on agreement of SCE and the CPUC. Reports shall include, but not be limited to, details of plants salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation.

Horticultural propagation and off-site introduction. If salvage and relocation is not believed feasible for special-status plants, then SCE shall consult with a qualified entity to develop an appropriate experimental propagation and relocation strategy, based on the life history of the species affected. The Plan will include at minimum: (a) collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d); time of year that the salvage and other practices will occur; (e) success criteria; and (f) a detailed monitoring program, commensurate with the Plan's goals.

MM BR-7 **Ensure wildlife impact avoidance and minimization.** SCE shall undertake the following measures during the construction and revegetation phases to avoid or minimize impacts to wildlife resources.

Minimize traffic impacts. SCE will specify and enforce a maximum 15 mile per hour vehicle speed limit on access roads within the ROW and project vicinity. No project-related pedestrian or vehicle traffic will be permitted outside defined work site or access route boundaries.

Minimize lighting impacts. Night lighting, when in use, shall be designed, installed, and maintained to prevent side casting of light towards surrounding fish or wildlife habitat.

Avoid use of toxic substances. Soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to wildlife and plants.

Minimize noise and vibration impacts. To minimize disturbance to wildlife nesting or breeding activities in surrounding habitat, project-related helicopter use shall be avoided or managed to the extent feasible from January 1 to August 31. Unnecessary noise (e.g., blaring radios) shall be avoided.

Water. Potable and non-potable water sources such as tanks, ponds, and pipes shall be covered or otherwise secured to prevent animals (including birds) from entering. Prevention methods may include storing all water within closed tanks, covering open storage ponds or tanks with 2-centimeter netting, or other means as applicable. Water applied to roads and construction areas for dust abatement shall use the minimal amount needed to meet safety and air quality standards. Water sources (e.g., hydrants, tanks, etc.) shall be checked periodically by biological monitors to ensure they are not creating open water sources by leaking or consistently overfilling trucks.

Worker guidelines. All trash and food-related waste shall be contained in vehicles or covered trash containers and removed from the site regularly. Workers shall not feed wildlife or bring animals or pets to the project site with the exception of ADA-compliant service animals. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.

Wildlife netting or exclusion fencing. SCE may install temporary netting or permanent screening or fencing around equipment, work areas, or project facilities to prevent wildlife exposure to hazards such as toxic materials or vehicle strikes or prevent birds from nesting on equipment or facilities. Bird deterrent netting will be maintained free of holes and will be deployed and secured on the equipment in a manner that prevents wildlife from becoming trapped inside the netted area or within the excess netting. The biological monitor will inspect netting (if installed) twice daily, at the beginning and close of each work day, with the exception of netting installed in established material yards, which will be inspected at least once daily. The biological monitor will inspect exclusion fence (if installed) weekly and will inform SCE of any needed repairs; SCE shall promptly repair any damage to the exclusion fencing. Temporary netting shall be removed and properly disposed of following the completion of project activities.

Wildlife entrapment. Project-related excavations shall be secured to prevent wildlife entry and entrapment. Holes and trenches shall be backfilled, securely covered, or fenced. Excavations that cannot be fully secured shall incorporate appropriate wildlife ramp(s) at a slope of no more than a 3:1 ratio, or other means to allow trapped animals to escape. Biological monitors shall provide guidance to construction crews to ensure that wildlife ramps or other means are sufficient to allow trapped animals to escape. At the end of each work day, a biological monitor shall ensure that excavations have been secured or provided with appropriate means for wildlife escape.

- All pipes or other construction materials or supplies that CPUC monitors determine to present a risk to wildlife will be covered or capped in storage or laydown areas. No pipes or tubing of the size and nature that may entrap wildlife will be left open either temporarily or permanently, except during use or installation. Any construction pipe, culvert, or other hollow materials will be inspected for wildlife before it is moved, buried, or capped.

Dead animals. Dead animals (of non-special-status species) large enough to subsidize ravens found on unpaved project roads, work areas, or the ROW shall be reported to the appropriate local animal control agency within 24 hours, to minimize raven subsidies. A biological monitor shall safely move the carcass out of the road or work area as needed. Dead animals of special-status species found on unpaved project roads, work areas, or the ROW shall be reported to CDFW within one work day and the carcass handled as directed by CDFW.

Injured special-status wildlife. SCE shall create and implement guidelines for dealing with injured or entrapped special-status wildlife found on or near project roads, work areas, or the ROW, and provide these guidelines to all biological monitors. If an animal is entrapped, a qualified biological monitor shall free the animal if feasible, or work with construction crews to free the animal, in compliance with applicable safety regulations and project requirements. If biological monitors cannot free the animal or the animal is too large or dangerous for monitors to handle, SCE shall contact and work with animal control, CDFW, or other qualified party to obtain assistance for the animal as soon as possible.

- SCE shall ensure that one or more qualified biological monitors receive training in the safe and proper handling and transport of injured wildlife and are provided with the appropriate equipment. These trained and equipped monitors shall be available to capture and transport injured wildlife to a local wildlife rehabilitator or veterinarian as needed. If the injured animal is too large or dangerous for monitors to handle, or a trained and equipped monitor is not available, SCE shall contact and work with a local wildlife rehabilitator, animal control, CDFW, or other qualified party to obtain assistance for the animal as soon as possible. A list of qualified wildlife rehabilitators, veterinarians, and animal control agencies will be maintained to ensure a timely response to requests for support. SCE shall bear the costs of veterinary treatment and rehabilitation for any wildlife injured by project-related activities and any injured wildlife found on or near project roads, work areas, or the ROW, unless the injuries are clearly not project-related, as determined by a qualified biologist. Additionally, any entrapped or injured special-status species found on project roads (with the exception of public roads), work areas, or the ROW shall be reported to the appropriate resource agency within one work day.

MM BR-8 **Compensate for desert tortoise habitat loss.** [Supersedes APM BIO-05.] SCE shall compensate for all desert tortoise habitat loss through off-site habitat acquisition and management, or through participation in an approved in-lieu fee compensatory mitigation bank, or other agency approved mitigation strategies. This mitigation measure will be applicable to all temporary and permanent project disturbance to natural habitat types, (i.e., all vegetation types identified in Table 5.4-2, excluding active agriculture, barren, and developed lands). This compensatory mitigation for desert tortoise will also mitigate for habitat impacts to other native wildlife species.

- Habitat compensation shall be accomplished by acquisition of mitigation land or conservation easements or by providing funding for specific land acquisition, endowment, restoration, and management actions. SCE shall prepare a Habitat Compensation Plan to be reviewed and approved by the CPUC and BLM, in coordination with the USFWS and CDFW.

- SCE shall acquire and protect, in perpetuity, compensation habitat to mitigate impacts to biological resources as detailed below. SCE shall be responsible for the acquisition, initial protection and or habitat improvement. SCE may convey title of the compensation lands to a public agency such as BLM, NPS, or CDFW or the lands may be held by a private conservation entity. If the land is conveyed to BLM, it shall be within a land use designation such as Area of Environmental Concern, wilderness, or similar designation consistent with long-term management for biological resource values and excluding incompatible land uses (e.g., energy development). If it is conveyed to CDFW, or retained under private ownership, it shall be covered by a conservation easement or other terms acceptable to CDFW. If there is any conflict between the requirements of this

mitigation measure and requirements of any resource agency permit (e.g., USFWS Biological Opinion or CDFW Incidental Take Permit), the more stringent requirement shall apply.

- The acreages of compensation land shall be based upon final engineering calculation of impacted acreage for each resource and on ratios set forth in this measure, or a USFWS Biological Opinion, a CDFW Streambed Alteration Agreement, a CDFW Incidental Take Permit, or the Consistency Determination, whichever presents a higher ratio. Acreages will be adjusted as appropriate for other alternatives or future modifications during implementation.

- Compensation shall be provided for impacts to the following resources, at the ratios specified below (acres acquired and preserved to acres impacted). These ratios reflect multiple biological resource values, including habitat suitability for special-status species.

- Previously disturbed lands (agriculture, developed/disturbed) and open water: n/a (no habitat compensation required)

- Undisturbed land, including suitable desert tortoise habitat outside designated critical habitat: 1:1

- Suitable desert tortoise habitat within designated critical habitat: 5:1

- The Habitat Compensation Plan must specify compensation acreage for each habitat type, based on final engineering. Final compensation requirements may be adjusted to account for any deviations in project disturbance, according to the as-built shapefiles aerial imagery.

- **Compensation Land Selection Criteria.** Criteria for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of compensation lands for impacts to biological resources shall include all of the following:

Compensation lands will provide habitat value that is equal to or better than the quality and function of the habitat impacted by the project, taking into consideration soils, vegetation, topography, human-related disturbance, wildlife movement opportunity, proximity to other protected lands, management feasibility, and other habitat values, subject to review and approval by CPUC and BLM;

Potential compensation sites where creosote rings are found will be prioritized where feasible, and where consistent with the other selection criteria;

To the extent that proposed compensation habitat may have been degraded by previous uses or activities, the site quality and nature of degradation must support the expectation that it will regenerate naturally when disturbances are removed and SCE will receive appropriate ratio credits for restoration;

Be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;

Not have a history of intensive recreational use or other disturbance that might cause future erosion or other habitat damage, and make habitat recovery and restoration infeasible;

Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;

Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat;

Have water and mineral rights included as part of the acquisition, unless the CPUC and BLM, in consultation with CDFW and USFWS, agree in writing to the acceptability of land without these rights.

- **Review and Approval of Compensation Lands Prior to Acquisition.** SCE shall submit a Draft Habitat Compensation Plan for review and approval by the CPUC and BLM describing the parcel(s) intended for protection. This Plan will discuss the suitability of the proposed parcel(s) as compensation lands in relation to the selection criteria listed above.

- **Management Plan.** If the compensation land is held by a private entity, SCE or approved third party shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The goal of the management plan will be to support and enhance the long-term viability of the biological resources. The Management Plan must be submitted for review and approval to the CPUC and BLM, in consultation with CDFW and USFWS. If the land is conveyed to a public agency, SCE will coordinate with the agency as needed to identify management planning needs (if any).

- **Compensation Lands Acquisition Requirements.** Compensation land parcels, management planning and funding mechanism, management entities, habitat protection and improvement measures, title conveyance, conservation easement language and easement holder, all will be subject to review and approval by CPUC and BLM in coordination with CDFW and USFWS.

MM BR-9 **Conduct surveys and avoidance for special-status reptiles.** [This measure incorporates and supersedes APM BIO-04].

Pre-activity Surveys. No more than seven days prior to the onset of ground-disturbing activities, an agency-approved biologist — with experience monitoring and handling desert tortoise — will conduct a pre-activity survey in all work areas within potential desert tortoise, banded Gila monster, desert rosy boa, or Mojave fringe-toed lizard habitat, plus an approximately 300-foot buffer. If potentially suitable burrows, sand fields, or rock piles are found, they shall be checked for occupancy. All desert tortoise burrows within the pre-activity survey area (including desert tortoise pallets) must be flagged or marked using an alternate method with minimal potential risk of cuing predators, to be developed in coordination with CDFW so that they may be avoided during work activities. Proposed actions will avoid disturbing desert tortoise burrows to the extent possible. However, burrows may be excavated if they can't be avoided and would be impacted by construction activities. If a tortoise must be handled or a potential tortoise burrow must be excavated, the biologist shall proceed according to the Desert Tortoise (Mojave Population) Field Manual (USFWS, 2009) or any requirements of the USFWS and CDFW incidental take authorizations. No desert tortoise may be handled except under explicit authorization from USFWS and CDFW.

Monitoring. The approved tortoise biologist shall be available on site to monitor any work areas for desert tortoise, banded Gila monster, desert rosy boa, and Mojave fringe-toed lizard as needed. The approved tortoise biologist shall also be responsible for

performing surveys prior to Proposed Project activities in suitable habitat for all three species. The approved tortoise biologist will have the authority to halt all non-emergency actions (as soon as safely possible) that may result in harm to desert tortoise, and will assist in the overall implementation of all adopted protection measures for special-status reptiles. As an alternative to full-time on-site monitoring, selected work areas (e.g., the series capacitors) may be enclosed by desert tortoise exclusion fencing and then covered by two complete 100 percent coverage clearance surveys. If exclusion fencing is installed, the agency-approved tortoise biologist shall monitor installation.

Desert Tortoise in Work Area. In the event that a desert tortoise is encountered in the work area, all work shall cease and the approved biologist must be contacted. Work shall not recommence until the animal has voluntarily moved to a safe distance away from the work area unless incidental take permits have been obtained to allow handling. Desert tortoises may be moved by an agency-approved biologist as authorized by state and federal incidental take permits if necessary to move them out of harm's way. Encounters with special-status herpetofauna will be reported to an approved biologist. Encounters with desert tortoise will be documented and provided to the California Department of Fish and Wildlife (CDFW), BLM, and U.S. Fish and Wildlife Service (USFWS). In the event that a dead or injured desert tortoise is observed, the approved biologist shall notify SCE's herpetologist and report the incident to the CDFW, BLM, and USFWS.

Under Vehicle Checks. Desert tortoises and other wildlife commonly seek shade during the hottest times of the day. All employees shall be required to check under their equipment or vehicles before they are moved. If special-status wildlife is encountered, the vehicle shall not be moved until the animal(s) have voluntarily moved to a safe distance away from the parked vehicle. Desert tortoises and special-status species may be moved by the approved biologist, if necessary, to move them out of harm's way.

Handling Desert Tortoise. Only an agency-approved biologist may move or handle desert tortoises as authorized by state and federal incidental take permits. When a desert tortoise is moved, the approved biologist will be responsible for taking appropriate measures to ensure that the animal is not exposed to harmful temperature extremes. The approved biologist shall follow the appropriate protocols outlined in the Desert Tortoise (Mojave Population) Field Manual (USFWS, 2009) when handling desert tortoises or excavating their burrows as described in the state and federal take authorizations.

Excavation of Desert Tortoise Burrows. Should it prove necessary to excavate a desert tortoise from its burrow to move it out of harm's way, excavation shall be done using hand tools, either by or under the direct supervision of an approved biologist. Excavation of desert tortoise burrows will occur no more than seven days before the onset of construction activities at any given site. All desert tortoises removed from burrows must be placed in an unoccupied burrow that is approximately the same size as the one from which it was removed. If an existing burrow is unavailable, the approved biologist shall construct or direct the construction of a burrow of similar shape, size, depth, and orientation as the original burrow following guidelines in the Desert Tortoise (Mojave Population) Field Manual (USFWS, 2009). To ensure their safety, desert tortoises moved during inactive periods must be monitored for at least two days after placement in the new burrows or until the end of the construction activity.

- If desert tortoises need to be moved at a time of day when ambient temperatures could harm them (i.e., at temperatures lower than 40 degrees Fahrenheit (°F) or higher than 90°F), they must be held overnight in a clean cardboard box. These desert tortoises shall be kept in the care of the approved biologist under appropriate controlled temperatures and released the following day when temperatures are favorable. All cardboard boxes shall be appropriately discarded after one use.

Vehicle Travel. Motor vehicles shall be limited to maintained roads and designated routes. If additional routes are needed, they must first be surveyed and approved by the approved biologist.

Raven Management. SCE shall prepare (for CPUC review and wildlife agency approval) and implement a Raven Management Plan (RMP) to minimize avian predation of desert tortoise for the Proposed Project. The purpose of the RMP is to utilize methods that deter raven depredation of juvenile desert tortoises, and other wildlife species. The RMP is not intended to eliminate or control raven populations, but will target offending ravens that have been found to prey upon desert tortoises. The RMP will incorporate an adaptive management strategy for immediate implementation following construction of the Proposed Project. The RMP will be evaluated after three years of implementation, or as needed, if avian predation becomes apparent. The following activities may be implemented as part of the RMP: (1) Common raven nest/power line monitoring, (2) Funding of offending raven control via contract with the U.S. Department of Agriculture, and (3) Alternative control strategies developed in coordination with USFWS (e.g. egg-oiling, laser deterrents, etc.). Mutual and timely cooperation between SCE and the BLM, USFWS, and CDFW is central to effective implementation of the RMP.

MM BR-10 **Prepare and implement a Nesting Bird Management Plan.** [Supersedes APM BIO-06.] SCE shall prepare and implement a Nesting Bird Management Plan (NBMP) in coordination with CPUC, BLM, CDFW, and USFWS. The NBMP shall describe methods to minimize potential project effects to nesting birds and avoid any potential for unauthorized take. Where scheduling allows SCE will endeavor to conduct clearing of any vegetation, site preparation in open or barren areas, or other project-related activities that may adversely affect breeding birds outside the nesting season. Project-related disturbance including construction and pre-construction activities shall not proceed within 300 feet of active nests of common bird species or 500 feet of active nests of raptors or special-status bird species (except for golden eagle) until approval of the NBMP by CPUC and BLM in consultation with CDFW and USFWS.

- **NBMP Content.** The NBMP shall include: (1) definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species and the nature of planned Project activities in the vicinity; (2) a notification procedure for buffer distance reductions should they become necessary; (4) a pre-construction survey protocol (surveys no longer than 7 days prior to starting work activity at any site); (5) a monitoring protocol, to be implemented until adjacent construction activities are completed or the nest is no longer active, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds will be minimized; and (6) a protocol for documenting and reporting any inadvertent contact with or effects to birds or nests. The NBMP will be applicable throughout the nesting season (beginning January 1 for raptors, February 1 for most other birds, and continuing through the end of August).

- **Golden eagles.** SCE shall review all available USFWS data to identify known golden eagle nest sites or territories in the vicinity of the Project route. SCE shall either assume that known nest sites are occupied or at its discretion conduct nesting season surveys within a 1mile radius of the portions of the project area where suitable nesting habitat may exist and where work will occur during the breeding season (December 1 through July 31). If a potentially occupied nest (based either on assumption or field data) is detected within 1 mile of the project, SCE shall implement a one-mile line-of-sight and one-half mile no line-of-sight buffer to ensure that project construction activities do not result in injury or disturbance to golden eagles.

- **Nest deterrents.** The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment. It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals. In the event that an active nest is located on project facilities, materials or equipment, SCE will avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

- **Communication.** The NBMP shall specify the responsibilities of construction monitors with regard to nests and nest issues and specify a direct communication protocol to ensure that nest information and potential adverse impacts to nesting birds can be promptly communicated from nest monitors to construction monitors, so that any needed actions can be taken immediately.

- The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. For example, chick fences may be used to prevent them from entering work areas and access roads. Finally, the NBMP will specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval process.

- **Reporting.** Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to CPUC monitors on a daily basis. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to CPUC monitors. The draft NBMP shall include a proposed format for daily and weekly reporting (e.g., spreadsheet available online, tracking each nest). In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, SCE will submit an annual NBMP report to the CPUC, BLM, CDFW, and USFWS. Specific contents and format of the annual report will be reviewed and approved by the CPUC and BLM in consultation with CDFW and USFWS.

MM BR-11 **Conduct surveys and avoidance for burrowing owl.** [Supersedes APM BIO-07.] Burrowing owl surveys shall be conducted in accordance with the most current CDFW guidelines in Appendix D of the Staff Report on Burrowing Owl Mitigation (CDFG, 2012; or updated

guidelines as they become available) in all potential habitat, regardless whether or not the previous assessment identified burrows. SCE shall take measures to avoid impacts to any active burrowing owl burrow within or adjacent to a work area. The default buffer for a burrowing owl burrow is 300 feet for ground construction, and 300 feet horizontal and 200 feet vertical for helicopter construction. Effectiveness of the buffer area will be monitored, and adjustments will be made if necessary. The Nesting Bird Management Plan (Mitigation Measure BR-10) will specify a procedure for adjusting this buffer, if needed. Binocular surveys may be substituted for protocol field surveys on private lands adjacent to the project site only when SCE has made reasonable attempts to obtain permission to enter the property for survey work but was unable to obtain such permission.

- If active burrowing owl burrows are located within project work areas, SCE may passively relocate the owls by preparing and implementing a Burrowing Owl Passive Relocation Plan, as described below. SCE shall prepare a draft Burrowing Owl Passive Relocation Plan for review and approval by CPUC and BLM in consultation with CDFW and USFWS prior to the start of any ground-disturbing activities. SCE may not initiate burrowing owl passive relocation prior to finalization of the Plan and approval by CPUC and BLM. No active relocation shall be permitted. No passive relocation of burrowing owls shall be permitted during breeding season, unless a qualified biologist verifies through non-invasive methods that an occupied burrow is not occupied by a mated pair, and only upon authorization by CDFW. The Plan shall include, but not be limited to, the following elements:

Assessment of Suitable Burrow Availability. The Plan shall include an inventory of existing, suitable, and unoccupied burrow sites within 500 feet of the affected project work site. Suitable burrows will include inactive desert kit fox, ground squirrel, or desert tortoise burrows that are deep enough to provide suitable burrowing owl nesting sites, as determined by a qualified biologist. If two or more suitable and unoccupied burrows are present in the area for each burrowing owl that will be passively relocated, then no replacement burrows will need to be built.

Replacement Burrows. For each burrowing owl that will be passively relocated, if fewer than two suitable unoccupied burrows are available within 500 feet of the affected project work site, then SCE shall construct at least two replacement burrows within 500 feet of the affected project work site. Burrow replacement sites shall be in areas of suitable habitat for burrowing owl nesting, and subject to minimal human disturbance and access. The Plan shall describe measures to ensure that burrow installation or improvements would not affect sensitive species habitat or any burrowing owls already present in the relocation area. The Plan shall provide guidelines for creation or enhancement of at least two natural or artificial burrows for each active burrow within the project disturbance area, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFW guidelines (CDFG, 2012; or more current guidance as it becomes available) and shall be approved by the CPUC, BLM, CDFW, and USFWS.

Methods. Provide detailed methods and guidance for passive relocation of burrowing owls, outside the breeding season. An occupied burrow may not be disturbed during the nesting season (generally, but not limited to, February 1 to August 31), unless a qualified biologist determines, by non-invasive methods, that it is not occupied by a mated pair. Passive relocation would include installation of one-way doors on burrow entrances that would let owls out of the burrow but would not let them back in. Once

owls have been passively relocated, burrows will be carefully excavated by hand and collapsed by, or under the direct supervision, of a qualified biologist.

Monitoring and Reporting. Describe monitoring and management of the replacement burrow site(s)) and provide a reporting plan. The objective shall be to manage the relocation area for the benefit of burrowing owls, with the specific goal of maintaining the functionality of the burrows for a minimum of two years. Monitoring reports shall be available to the CPUC and BLM on a weekly basis.

MM BR-12 **Conduct surveys and avoidance for bats.** SCE shall conduct surveys for roosting bats within 200 feet of project work areas within 14 days prior to any grading of rocky outcrops or removal of large trees (12 inches in diameter or greater at 4.5 feet above grade) with loose bark or other cavities, foliage, and palm fronds. Surveys shall be conducted during the breeding season (1 March to 31 July) and the non-breeding season. Surveys shall be performed by a qualified bat biologist (i.e., a biologist holding a CDFW collection permit and a Memorandum of Understanding or equivalent agreement with CDFW allowing the biologist to handle bats). The resume of the biologist shall be provided to the CPUC and BLM for concurrence in consultation with CDFW and USFWS prior to the biologist beginning field duties on the project. Surveys shall include a minimum of one day and one evening.

- Any active bat roosts, including occupied day roosts, maternity roosts, and hibernacula, must be identified and clearly marked. An exclusion area will be established 165 feet from any active roost, and these areas will be avoided during construction activities. Ingress and egress along established routes will be permitted in those areas, and additional buffer reductions may be considered in coordination with the qualified bat biologist, CPUC, and CDFW. If active roosts are found, then SCE will either (1) delay construction activities at these sites until the roost is no longer active, or (2) conduct follow-up focused surveys to determine if the sites support special-status bat species. If the roost is occupied by common species, then work activities may proceed. SCE shall consult with a bat specialist in order to determine when the breeding cycle for the special-status bats is completed. SCE shall consult with CDFW regarding eviction of non-breeding bats.

- SCE shall submit documentation providing pre-construction survey results and any avoidance of roosting and nursery sites to the CPUC and BLM for review and approval.

MM BR-13 **Conduct surveys and avoidance for American badger, ringtail, and desert kit fox.** SCE shall conduct pre-construction surveys for desert kit fox, ringtail, and American badger no more than 30 days prior to initiation of construction activities. Surveys shall be conducted in areas that contain habitat for this these species and shall include project disturbance areas and access roads plus a 200-foot buffer surrounding these areas. SCE shall submit documentation providing pre-construction survey results to the CPUC and BLM for review and approval. If dens are detected, each den shall be classified as inactive, potentially active, active non-natal, or active natal.

- Inactive dens located in project disturbance areas may be excavated by hand and backfilled to prevent reuse, only upon confirmation that they are inactive.

- Active or potentially active dens shall be flagged and project activities, with exceptions as listed below, within 100 feet (non-natal dens) or 200 feet (natal dens, or any active den during the breeding season) shall be avoided. Ingress/egress of construction vehicles and equipment through buffers and low intensity activities such as

inspections and BMP maintenance within buffers is allowed, provided a qualified biologist determines that these activities will not impact dens or denning animals. Buffers may be modified with concurrence of CPUC and BLM, in consultation with CDFW and USFWS. If active dens are found within project disturbance areas and avoidance is not possible, SCE shall take action as specified below, after notifying and obtaining concurrence from CPUC, BLM, and CDFW.

- **Active and potentially active non-natal dens.** Outside the breeding season, any potentially active dens that would be directly impacted by construction activities shall be monitored by a qualified mammologist or biologist for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den may be excavated and backfilled by hand. If tracks are observed, the den may be progressively blocked with natural materials (rocks, dirt, sticks, and vegetation piled in front of the entrance) for the next three to five nights to discourage continued use. After verification that the den is no longer active, the den may be excavated and backfilled by hand.

- **Active natal dens.** Active natal dens (any den with cubs or pups) or any den active during the breeding season will not be excavated or passively relocated. The cub or pup-rearing season is generally from January 15 through mid-September. A 200-foot no-disturbance buffer shall be maintained around all active natal dens. Discovery of an active natal den that could be impacted by the project shall be reported to the CPUC, BLM, and CDFW within 24 hours of the discovery along with a map of the den location and a copy of the survey results. A qualified biologist shall monitor the natal den until he or she determines that the pups have dispersed. Any disturbance to denning animals or activities that might disturb denning activities shall be prohibited within the buffer zone. Once the pups have dispersed, methods listed above for non-natal dens may be used to discourage den reuse. After verification that the den is unoccupied, it shall then be excavated by hand and backfilled to ensure that no animals are trapped in the den.

- If canine distemper is reported in desert kit fox on the site or surrounding areas, then SCE shall coordinate with CPUC, BLM, and CDFW to identify appropriate actions prior to continuing implementation of this mitigation measure in respect to desert kit fox. Any observations of a kit fox that appears sick or any kit fox mortality shall be reported to CPUC, CDFW, and BLM within one work day.

- In the event that passive relocation techniques fail, SCE shall contact the CPUC, BLM, and CDFW to explore other relocation options.

- All den monitoring and excavation activities and passive relocations shall be documented and reported to the CDFW, BLM, and CPUC in weekly monitoring reports, and a written summary will be included in each annual monitoring report.

APM BIO-08 **Compensation for Permanent Impacts to Jurisdictional Water Resources.** All necessary authorizations must be obtained from the applicable jurisdictional agencies for impacts to aquatic resources. Permanent impacts to all jurisdictional water resources would be compensated for at a one-to-one ratio, or as agreed upon with the U.S. Army Corps of Engineers, State Water Resources Control Board, NDEP, and CDFW.

Cultural Resources

MM CR-1 **Retain a Cultural Resources Specialist.** Prior to the start of construction, a project Cultural Resources Specialist (CRS) whose training and background conforms to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 C.F.R., part 61) shall be retained by SCE to supervise monitoring of construction excavations and to prepare a Cultural Resources Management Plan (CRMP) for the approved project. Their qualifications shall be appropriate to the needs of the project, specifically an archaeologist with demonstrated prior experience in the southern California desert and previous experience working with Southern California Tribal Nations. A copy of their qualifications shall be provided to the CPUC for review and approval. The project Cultural Resources Specialist shall use the services of Cultural Resources Monitors, tribal monitors and Field Crew as needed, to assist in mitigation, monitoring, and curation activities, as outlined in the CRMP. A copy of all proposed cultural staff qualifications shall be provided to the CPUC for review and approval prior to beginning work.

MM CR-2 **Cultural resources environmental awareness training.** Project personnel, including cultural resources monitors and tribal monitors, shall receive training that includes sensitivity training provided through participating tribes in video format regarding the appropriate work practices necessary to effectively implement the APMs and mitigation measures related to cultural resources and tribal cultural resources, including human remains. Training shall be required for all personnel before they begin work on a project site and repeated as needed for all new personnel before they begin work on the Project. This training program shall be submitted to the CPUC for approval at least 30 days before the start of construction and include procedures to be followed upon the discovery or suspected discovery of archaeological materials, tribal cultural resources, and human remains, consistent with the procedures set forth in the CRMP. This training may be integrated with a broader Worker Environmental Awareness Training program. Documentation of the training will be provided to the BLM and CPUC. The CPUC will provide documentation to the consulting tribes.

MM CR-3 **Prepare and implement a Cultural Resources Management Plan.** Prior to the beginning of construction, SCE shall submit at least 90 days before construction a Cultural Resources Management Plan (CRMP) for the project to the BLM and CPUC for review. The CPUC will submit the CRMP to representatives of consulting tribes for a 30-day review and comment period prior to approving the CRMP. The CPUC will in good faith consider any comments received from consulting tribes and incorporate such comments into the CRMP as deemed feasible. A single plan document that meets the requirements of both BLM and CPUC is acceptable. The CRMP shall be implemented under the direction of the SCE and the project Cultural Resources Specialist. The CRMP shall be prepared at the sole expense of the project proponent and shall meet all regulatory requirements. At a minimum the CRMP must address the following:

The duties of the project Cultural Resources Specialist and associated staff shall be fully explained, including oversight/management, monitoring, and reporting duties with respect to known cultural resources and tribal cultural resources as well as site evaluation, data collection, and reporting for any newly identified resources discovered during project activities. The professional standards and ethical guidelines for all cultural resource personnel will be clearly outlined in the CRMP.

No collection of artifacts is authorized or planned for this project. If an unanticipated discovery requires evaluation via excavation and artifact collection, the retention/disposal, and permanent and temporary curation policies shall be specified. The decision-making process for identifying which artifacts are curated or reburied, where they are reburied and the individuals, including tribal participants, making these decisions shall be described. These policies shall apply to cultural resources materials and documentation resulting from evaluation and treatment of cultural resources and tribal cultural resources discovered during project activities.

The CRMP shall define and map all known prehistoric and historic resources eligible to the NRHP and CRHR within 100 feet of proposed work areas. How these resources will be avoided and protected during construction will be described. Avoidance measures to be used will be described, including where and when they will be implemented. How avoidance measures and enforcement of Environment Sensitive Areas (ESAs) will be coordinated with construction personnel will be included.

The implementation sequence and the estimated time frames needed to accomplish all project-related tasks (i.e., evaluation of new resources resulting in work stoppage, time to complete reports, etc.) during the project activities and any post-project analysis phases of the project, if necessary, shall be specified. The intensity of monitoring proposed for each resource that may be impacted by project activities shall be outlined in the CRMP.

Person(s) expected to perform each monitoring and, if necessary, treatment task, their responsibilities, and the reporting relationships between project construction management and the monitoring and treatment team shall be outlined in the CRMP.

Tribal Monitors shall be retained to monitor ground disturbing activities within 100 feet of prehistoric and protohistoric resources. Tribal Monitors shall be retained for data recovery within prehistoric and protohistoric resources identified for data recovery. The ELM Project area spans multiple Tribal areas. The Tribe affiliated with a specific area will be considered first to provide Tribal Monitors. If multiple Tribes or Tribal Organizations are affiliated with a specific area, Tribal Monitors will be selected on a rotating basis. The CRMP will describe the roles and responsibilities of the monitors. Tribal monitors will be compensated. All impact-avoidance measures (such as the presence of monitors) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.

The commitment to record resources on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all newly identified cultural resources over 50 years of age shall be stated. Participating tribes may offer their perspective regarding the newly identified cultural resource. Comments by tribes may be documented on the DPR 523c, parts A13 (Interpretation) and A14 (Remarks).

The commitment to curate all artifacts retained as a result of any archaeological investigations in accordance with the appropriate requirements and the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, into a retrievable storage collection in a public repository, museum, or reburial

at the request of tribal representatives shall be stated. The different curation policies for archaeological material collected on BLM land as opposed to private or state land, shall be clearly articulated.

The commitment of SCE to pay all curation or reburial fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. Should consulting tribes request that artifacts not be reburied, the CRMP shall identify a curation facility that could accept cultural resources materials resulting from project cultural resources investigations on private or state land. Tribal monitors shall be present for any reburials.

A final report shall be prepared presenting the results of the monitoring efforts. The contents, format, and review and approval process of the final report shall meet appropriate federal, state, and local guidelines.

MM CR-4 **Inadvertent discovery of cultural or tribal cultural resources.** If previously undiscovered resources are identified during project activities all activities within 100 feet (30 meters) of the resource shall halt. The onsite construction supervisor and SCE shall be notified. SCE will notify the CPUC and BLM of the discovery. The CSLC will also be notified if the discovery is on state land. The monitoring team shall flag-off the area. SCE and its cultural resource specialist will coordinate with the CPUC, BLM, NPS, CSLC, and tribal representatives as appropriate, on avoidance measures.

MM If the resource cannot be avoided, methods of resource evaluation, and methods of mitigation will be discussed with all appropriate parties. Work may be temporarily diverted to activities that are outside of 100 feet (30 meters) of the discovered or suspected resource. The resource shall be evaluated to determine whether it is eligible for the NRHP, CRHR, a unique archaeological resource, a tribal cultural resource, or part of a larger culturally sensitive landscape area or traditional cultural property. If the resource is determined not to be significant, work may recommence in the area. If the resource is determined significant work shall remain halted within 100 feet (30 meters) of the area of the find, SCE shall consult with the BLM, CPUC, CSLC, and representatives of the consulting tribes as appropriate regarding methods to ensure that no adverse effect and no substantial adverse change would occur to the significance of the resource. Preservation in place (i.e., avoidance) is the preferred method of mitigation for impacts to cultural resources. Other methods of mitigation, described below, shall only be used if it is determined the method would provide equivalent or superior mitigation of the impacts to the resource. The alternative methods of mitigation may include data recovery and documentation of the information contained in the resource to answer questions about local prehistory or history. The methods and results of the evaluation or data recovery work at an archaeological find shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). Work in the area may commence upon completion of treatment, as approved by the BLM, CPUC, and CSLC when appropriate.

- If data recovery of resources is necessary, additional archaeologists shall perform the excavation while the monitoring team(s) continues to monitor construction. Additionally, the tribes shall be offered the opportunity to monitor data recovery efforts at prehistoric sites in addition to construction efforts, under the same contract terms. This opportunity shall be additionally be extended to tribes that consulted on this project, but for which a tribal monitor was not provided for construction efforts.

MM CR-5 **Avoidance of cultural and tribal cultural resources.** When project work is planned within 100 feet of a known prehistoric-era cultural resource or a tribal cultural resource, or any resources that are eligible for the CRHR and/or NRHP, avoidance areas shall be established and monitors shall be present as outlined in the CRMP. ESAs shall be established with a 50 foot buffer around each resource prior to project activities, except where the 50-foot buffer would encroach on a work area, in which event the ESA buffer shall be the near edge of the identified work area. Monitoring teams shall include one qualified cultural resources monitor and one Native American monitor at prehistoric sites. ESAs shall be established by a qualified cultural resources monitor. The timing and intensity of the monitoring may vary according to the type of resource and the nature of the work planned and shall be determined in consultation with consulting tribes, as appropriate.

MM CR-6 **Prepare monitoring reports.** Upon completion of cultural resources and tribal cultural resources monitoring, SCE shall prepare a single report that summarize the monitoring efforts and the results, analyses, and conclusions of the monitoring program. Individual volumes per land ownership will be included and provide additional details. Copies of the report shall be submitted to both the CPUC and BLM within 60 days of the close of construction. Thereafter, consistent with individual agency policy, each agency will disseminate to the consulting tribes the report applicable to land under that agency's jurisdiction. Draft reports under CPUC jurisdiction will be submitted to consulting tribes for a 30-day review and comment period concurrent with agency review. If no new resources were discovered during construction, a letter report shall be submitted to the CPUC and BLM summarizing monitoring efforts. If resources were identified during construction, the reports shall be consistent with the California Archaeological Resources Management Reports (ARMR) and commensurate with the nature and significance of the identified resource(s). If artifacts are collected, they shall be curated at a recognized curation facility unless consulting tribes request that the Native American artifacts be reburied on site. Documentation associated with any newly identified resources shall be filled with the CHRIS, if appropriate.

MM CR-7 **Inadvertent discovery of human remains on state owned land or private property.** In the event that human remains or suspected human remains are identified, SCE shall comply with California law (Heath and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98, and 5097.99). The area shall be flagged off and all project activities within 200 feet (60 meters) of the find shall immediately cease. The CPUC-approved Cultural Resources Specialist and SCE shall be immediately notified. SCE shall immediately contact the Medical Examiner at the County Coroner's office, BLM, CPUC as well as representatives of consulting tribes. The CSLC will be notified if the remains are identified on state land. The Medical Examiner has two (2) working days to examine the remains. If the Medical Examiner believes the remains are Native American, they shall notify the California Native American Heritage Commission (NAHC) within 24 hours. If the remains are not believed to be Native American, the appropriate local law enforcement agency will be notified.

- The NAHC will immediately notify the person or tribe it believes to be the most likely descendant (MLD) of the remains, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the human remains and any associated grave goods. If the MLD does not make recommendations within 48 hours, the remains shall be reinterred in the location they were discovered and the area of the property shall be secured from further disturbance. If there are disputes between the landowner and the MLD, the NAHC shall

mediate the dispute and attempt to find a solution. If the mediation fails to provide measures acceptable to the landowner, the landowner or their representative shall reinter the remains and associated grave goods and funerary objects in an area of the property secure from further disturbance. The location of any reburial of Native American human remains shall not be disclosed to the public and shall not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code§ 6250 et seq., unless otherwise required by law. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r).

MM CR-8 **Inadvertent discovery of human remains on federal land.** If potential human remains are discovered during any Project activity on lands administered by federal agencies, all activities within 200 feet that will cease immediately. SCE will take appropriate steps to secure and protect human remains and any funerary objects from further disturbance. SCE will notify the BLM and the County Coroner (California Health and Safety Code 7050.5(b)) immediately. If the remains are determined to be Native American or if Native American cultural items pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered, the remains shall be treated in accordance with the provisions of NAGPRA (43 CFR 10) and the Archaeological Resources Protection Act (43 CFR 7). SCE shall assist and support the federal agency, as appropriate, in all required NAGPRA and Section 106 actions, government-to-government and consultations with Native Americans, agencies, and consulting parties as requested by the federal agency. SCE shall comply with and implement all required actions and studies that result from such consultations.

APM CUL-02 **Cultural Resources Survey.** SCE would perform surveys prior to construction for any Proposed Project areas not yet surveyed (e.g., new or modified staging areas, pull sites, or other work areas). Resources discovered during the surveys would be subject to Mitigations Measures CR-1 through CR-6.

Geology and Soils

MM PAL-1 **Retain qualified paleontological staff.** Project Paleontologist – Prior to the start of ground disturbance, a qualified paleontologist to serve as Project Paleontologist shall be retained by SCE. The qualifications of the Project Paleontologist shall be submitted to CPUC and BLM for approval. This individual shall retain a BLM paleontological resource use permit for the project and other appropriate permits. To do so this individual shall have the following qualifications as stipulated in BLM Manual 8270-1:

Professional instruction in a field of paleontology relevant to the work proposed (vertebrate, invertebrate, trace, paleobotany, etc.), obtained through:

Formal education resulting in a graduate degree from an accredited institution in paleontology, or in geology, biology, botany, zoology or anthropology if the major emphasis is in paleontology; or

Equivalent paleontological training and experience including at least 24 months under the guidance of a professional paleontologist who meets qualification above that provided increased responsibility leading to professional duties similar to those in qualification above; and

Demonstrated experience in collecting, analyzing, and reporting paleontological data, similar to the type and scope of work proposed in the application;

Demonstrated experience in planning, equipping, staffing, organizing, and supervising crews performing the work proposed in the application;

Demonstrated experience in carrying paleontological projects to completion as evidenced by timely completion and/or publication of theses, research reports, scientific papers and similar documents.

- As described in BLM Instruction Manual (IM) 2009-011, the Project Paleontologist will serve as the Principal Investigator (PI) under the BLM permit and is responsible for all actions under the permit, for meeting all permit terms and conditions, and for the performance of all other personnel. This person is also the contact person for the project proponent, CPUC, and the BLM.

- Additional Paleontological Staff – The Project Paleontologist may obtain the services of Paleontological Field Agents, Field Monitors, and Field Assistants, if needed, to assist in mitigation, monitoring, and curation activities. These individuals must meet the qualifications described in BLM IM 2009-011.

MM PAL-2 **Provide paleontological environmental awareness training.** SCE will provide worker's environmental awareness training on paleontological resources protection as part of its WEAP required under Mitigation Measure BR-2, Prepare and implement a Worker Environmental Awareness Program. This training may be administered by the project paleontologist as a stand-alone training or included as part of the overall worker's environmental awareness training. At a minimum, the training would include the following:

the types of fossils that could occur at the project site;

the types of lithologies in which the fossils could be preserved;

the procedures that should be followed in the event of a fossil discovery; and

penalties for disturbing paleontological resources.

MM PAL-3 **Prepare and implement a Paleontological Resource Mitigation and Monitoring Plan (PRMMP).** (Supersedes APM CUL-04) Prior to the start of the project, SCE shall submit a Paleontological Mitigation and Monitoring Plan (PRMMP) for the project to the CPUC and BLM for review and approval. The PRMMP shall be prepared and implemented under the direction of the Project Paleontologist and shall address and incorporate Mitigation Measures PAL-1, PAL-3, and PAL-4. The PRMMP shall be based on Society of Vertebrate Paleontology (SVP) assessment and mitigation guidelines and meet all regulatory requirements. A monitoring plan indicates the avoidance or treatments recommended for the area of the proposed disturbance and must at a minimum address the following:

Identification and mapping of impact areas of high sensitivity that will be monitored during construction;

A coordination strategy to ensure that a qualified paleontologist will conduct monitoring at the appropriate locations at the appropriate intensity;

The significance criteria to be used to determine which resources will be avoided or recovered for their data potential;

Procedures for the discovery, recovery, preparation, and analysis of paleontological resources encountered during construction, in accordance with standards for recovery established by the SVP;

Provisions for verification that the project proponent has an agreement with a recognized museum repository, for the disposition of recovered fossils and that the fossils shall be prepared prior to submittal to the repository as required by the repository (e.g., prepared, analyzed at a laboratory, curated, or cataloged);

Specifications that all paleontological work undertaken by the project proponent shall be carried out by qualified paleontologists with appropriate current permits, including but not limited to a Paleontological Resources Use Permit (for work on public lands administered by BLM) and any other permits required by other jurisdictions;

Description of monitoring reports that will be prepared which shall include daily logs, monthly reports, and a final monitoring report with an itemized list of specimens found to be submitted to the BLM, the CPUC, the project proponent and the designated repository within 90 days of the completion of monitoring;

The implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground-disturbance analysis phases of the project shall be specified; and

Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team shall be identified.

All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.

MM PAL-4 **Conduct monitoring for paleontological resources.** The applicant shall continuously comply with the following during all ground disturbing activities during the project:

All ground disturbing activity in Proposed Project work areas identified with unknown, high, or very high paleontological sensitivity (PFYC U, PFYC 4, or PFYC 5) should be monitored on a full-time basis by a BLM-approved Paleontological Field Agent who will work under the supervision of the BLM-permitted paleontologist and principal investigator.

Ground disturbing activity that exceeds 5 feet in depth in work areas underlain by Holocene units shall be monitored part time. Spot-checking shall take place at least once a day and be conducted by a Qualified Paleontologist.

The level of effort and intensity for monitoring shall be modified as needed by a Qualified Paleontologist, in consultation with the appropriate agency personnel, based on the sediment types, depths, and distributions observed during monitoring throughout the life of the project.

Project activities shall be diverted when data recovery of significant fossils is warranted, as determined by the Project Paleontologist. Monitoring shall be conducted as follows:

Monitoring of ground disturbance shall consist of the surface collection of visible vertebrate and significant invertebrate fossils within the project site. Upon discovery of paleontological resources by paleontologists or construction personnel, work in the immediate area of the find shall be halted and diverted and the Project Paleontologist shall be notified. Once the find has been inspected and a preliminary assess-

ment has been made, the Project Paleontologist will notify the CPUC and other appropriate agencies of the discovery within 24 hours. If recovery of a large or unusually productive fossil occurrence is warranted, earth-moving activities shall be diverted temporarily around the fossil locality, and a recovery crew shall be mobilized to remove the material as quickly as possible. The monitor shall be permitted to photograph and/or draw stratigraphic profiles of cut surfaces and take samples for analysis of microfossils, dating, or other specified purposes in accordance with the PRMMP.

Recovered specimens shall be prepared to a point of identification, including washing of sediments to recover smaller fossil remains. Once excavation has reached specified depths, salvage of fossil material from the sidewalls of the cut shall resume. Specimens shall be identified and curated into a repository with retrievable storage.

All significant fossil specimens recovered from the project site as a result of the paleontological monitoring and mitigation program shall be treated (prepared, identified, curated, and catalogued) in accordance with the designated repository requirements. Samples shall be submitted to a laboratory, acceptable to the designated repository, for identification, dating, and microfossil and pollen analysis.

Hazards and Hazardous Materials

MM HH-1 **Prepare and implement a Hazardous Materials and Waste Management Plan.** SCE shall prepare and implement a Project-specific Hazardous Materials and Waste Management Plan pursuant to Title 24, Part 9 of the California Code of Regulations (CCR) that identifies hazardous materials to be transported, used, and stored on site for the proposed construction activities — as well as hazardous wastes generated onsite as a result of the proposed construction activities — and appropriate management procedures according to the specifications outlined below.

Hazardous Materials and Hazardous Waste Handling: The Plan will include the following components: (1) the program shall identify types of hazardous materials to be used during the project and the types of wastes that would be generated; (2) proper hazardous materials use, storage and disposal requirements as well as hazardous waste management procedures; and (3) all project personnel shall be provided with project-specific training to ensure that all hazardous materials and wastes associated with the project are handled in a safe and environmentally sound manner and disposed of according to applicable rules and regulations. Specifically, employees handling wastes shall have or receive hazardous materials training and shall be trained in hazardous waste procedures, spill contingencies, waste minimization procedures and treatment, storage and disposal facility (TSDF) training in accordance with current OSHA Hazard Communication Standard and Title 22 CCR. The Plan shall identify the landfill facilities that are authorized to accept the types of waste generated and hauled, and these landfills shall be used for hazardous waste disposal during construction.

Transport of Hazardous Materials: Hazardous materials that would be transported by truck include fuel (diesel fuel and gasoline) and oil and lubricants for equipment. Containers used to store hazardous materials would be properly labeled and kept in good condition. The Plan shall include written procedures for the transport of hazardous materials used in accordance with U.S. Department of Transportation and Caltrans regulations. A qualified transporter would be selected to comply with U.S. Department of

Transportation and Caltrans regulations. The Plan shall identify proposed trucking routes.

Fueling and Maintenance of Construction Equipment: Written procedures for fueling and maintenance of construction equipment shall be included in the Plan. Refueling and maintenance procedures may require vehicles and equipment to be refueled on site or by tanker trucks. Procedures will require the use of drop cloths made of plastic, drip pans and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling would be located in areas where absorbent pad and trays would be available. The fuel tanks would also contain a lined area to ensure that accidental spillage does not occur. Drip pans or other collection devices would be placed under the equipment at night to capture drips or spills. Equipment would be inspected daily for potential leakage or failures. Hazardous materials such as paints, solvents, and penetrants would be kept in an approved locker or storage cabinet.

Fueling and Maintenance of Helicopters: Written procedures for fueling and maintenance of helicopters shall be included in the Plan. Procedures may require helicopters be refueled at construction work areas, helicopter staging areas, or local airports. Procedures would include the use of drop cloths made of plastic, drip pans and trays to be placed under refilling areas to ensure that chemicals do not come into contact with the ground. Refueling areas shall be identified in the Plan and necessary spill response materials shall be available within each refueling area.

Emergency Release Response Procedures: The Plan shall include emergency response procedures in the event of a release of hazardous materials. The Plan must prescribe hazardous materials handling procedures for reducing the potential for a spill during construction and would include an emergency response program to ensure quick and safe cleanup of accidental spills. Hazardous materials shall not be stored near drains or waterways. Fueling shall not take place within 200 feet of drains or waterways with flowing water or within 75 feet of drains or waterways that are dry. All construction personnel, including environmental monitors, would be made aware of state and federal emergency response reporting guidelines for accidental spills.

- The Plan shall be submitted to CPUC and BLM 30 days prior to the start of construction for review and approval.

MM HH-2 **Manage discovery of unanticipated contamination.** In the event that contaminated media are encountered during construction requiring excavation, SCE shall stop work, contact SCE's Safety and Environmental Specialist (SES), request a site assessment, and notify the proper authorities. The potentially contaminated soil should first be segregated into lined stockpiles, dump trucks, or roll-off containers. Samples are to be collected and analyzed to determine the appropriate handling, treatment, and disposal options. If the analytical results indicate that the soils are hazardous, the affected soils would be properly managed on location and transported to a Class I Landfill or other appropriate soil treatment or recycling facility using a Uniform Hazardous Waste Manifest. Work at the affected site would continue at that location only when given clearance by the SES.

Hydrology and Water Quality

MM HWQ-1 **Implement an Erosion Control Plan.** SCE shall develop and submit an Erosion Control Plan to the CPUC and BLM for approval at least 60 days prior to construction. The Erosion Con-

trol Plan may be part of the Stormwater Pollution Prevention Plan (SWPPP) and kept onsite and readily available on request.

- Soil disturbance at structures and access roads is to be minimized and designed to prevent long-term erosion. The Erosion Control Plan shall include:

The location of all soil-disturbing activities, including but not limited to new and/or improved access and spur roads.

The location of all streams and drainage structures that would be directly affected by soil-disturbing activities (such as stream crossings or public storm drains by the right-of-way and access roads).

BMPs to protect drainage structures, such as public storm drains, downstream of soil disturbance activities.

Design features to be implemented to minimize erosion during construction and during operation (if the project feature is to remain permanent after construction).

If soil cement is proposed, the specific locations must be defined in the Plan, and evidence of approval by the appropriate jurisdiction shall be submitted to the CPUC and BLM prior to its use.

The location and type of BMPs that would be installed to prevent off-site sedimentation and to protect aquatic resources.

Specifications for the implementation and maintenance of erosion control measures and a description of the erosion control practices, including appropriate design and installation details.

Proposed schedule for inspection of erosion control/SWPPP measures and schedule for corrective actions/repairs, if required. Erosion control/SWPPP inspection reports shall be provided to the CPUC EM.

- Locations requiring erosion control/SWPPP corrective actions/repairs shall be tracked, including dates of completion, and documented during inspections. Inspections and monitoring shall be performed in compliance with the Federal and California Construction General Permits. The inspection reports shall be maintained and kept with their respective SWPPP, kept on site as required by the Federal and State Construction General Permits, and made available upon request to the RWQCB, CPUC, BLM, and representatives of the traversed counties and cities. Additionally, an Annual Report shall be filed for each reporting period in compliance with Federal and California Construction General Permit reporting requirements.

- SCE shall submit Grading Plans to the CPUC and BLM for approval that define the locations of the specific features listed above.

- SCE shall submit to the CPUC and BLM evidence of possession of applicable required permits for the representative land disturbance prior to engaging in soil-disturbing construction/demolition activities. Such permits may include, but are not limited to, a CWA Section 402 NPDES California General Permit for Storm Water Discharges Associated with Construction Activities (General Permit) from the applicable Regional Water Quality Control Board(s) (RWQCBs), and the Federal General Permit for Storm Water Discharges Associated with Construction Activities on Tribal Land.

- Prior to any ground disturbance in stream channels or other waters jurisdictional to the State of California or the Federal Government, SCE shall obtain a Streambed Alteration Agreement from the California Department of Fish and Wildlife, a Section 404 permit from the USACE, and a CWA Section 401 certification from the SWRCB and submit to the CPUC and BLM evidence of possession of such Agreement/permits.

MM HWQ-2 **Prepare and implement an HDD Fluid Management Plan.** If Horizontal Directional Drilling (HDD) is required, an HDD Fluid Management Plan shall be prepared and implemented. The plan shall include, at a minimum, the following measures:

Worst-case scenario development and response effort descriptions.

Drilling pressure monitoring to ensure pressures do not exceed those needed to penetrate the formation.

Monitoring by a minimum of two monitors (located both upstream and downstream) throughout drilling operations to ensure early detection and swift response in the event of a surface expression of drilling fluid.

Site-specific contingency measures shall be developed for the drill site, taking into consideration terrain, access, resource sensitivities, and proximity of suitable areas for staging response equipment for the unanticipated surface expression of drilling fluid.

Agency notification procedures.

Training for responding personnel.

Prevention, containment, clean up, and disposal of released drilling mud. Preventative measures shall include incorporation of the recommendations of a pre-construction geotechnical investigation to determine the most appropriate drilling depth and drilling mud mixture for the HDD bore site. Containment shall be accomplished through construction of temporary berms/dikes and use of silt fences, straw bales, absorbent pads, straw wattles, and plastic sheeting. Clean up shall be accomplished with plastic pails, shovels, portable pumps, and vacuum trucks.

A copy of the Streambed Alteration Agreement (SAA) shall be provided in the Plan. If the SAA also requires development of a similar plan to address HDD fluid management, that plan, as approved by CDFW, may be used to satisfy this measure provided it adequately addresses the requirements identified herein, as determined by the CPUC and BLM.

MM BR-7 **Restore or revegetate temporary disturbance areas.** (The full text of this mitigation measures is provided in the Biological Resources section. This measure provides performance standards, including details of restoration planning, monitoring, and success standards. Implementation of this mitigation measure would effectively restore wildlife habitat values in temporarily disturbed work areas, or for areas that cannot be feasibly restored, would require compensation if appropriate.)

Noise

MM N-1 **Limit construction noise levels.** SCE shall ensure that all construction activities occur within the following hours, during which construction noise would be exempt from local ordinances: in San Bernardino County and City of Hesperia, between 7:00 a.m. to 7:00 p.m. Monday through Saturday, except Federal holidays; in Clark County, Nevada, between

6:00 a.m. and 10:00 p.m. Monday through Saturday, except Federal holidays. Additionally, SCE shall implement the following construction noise reduction methods as precautionary measures, as identified in the Noise Technical Report (Appendix K to SCE's PEA (Eilar, 2017)):

Turn off equipment when not in use.

Limit the use of enunciators or public address systems, except for emergency notifications.

Equipment used in construction should be maintained in proper operating condition, and all loads should be properly secured, to prevent rattling and banging.

Schedule work to avoid simultaneous construction activities that both generate high noise levels.

Use equipment with effective mufflers.

Minimize the use of backup alarms.

MM N-2 **Provide advance notification of construction noise.** Sixty days prior to construction, SCE shall prepare and submit a public notice mailer format to the CPUC for approval. The details of notification may be modified in consultation with CPUC as warranted by the circumstances.

- No less than 15 days prior to construction that would occur within 500 feet of residences, businesses, or other occupied structures, SCE shall distribute a public notice mailer. The notice shall state the type of construction activities that will be conducted, and the location and duration of construction. The notice shall identify and SCE shall provide a public liaison person before and during construction to respond to concerns of residents about construction noise. SCE shall also establish a toll-free telephone number for receiving questions or complaints during construction and develop procedures for responding to callers. SCE shall address all complaints within one week of when the complaint is filed, and shall provide to the CPUC, within 15 days of the end of each month, a monthly report with records of all complaints and responses. SCE shall mail the notice to all residents or property owners within 500 feet of the right-of-way or within 1,000 feet of helicopter fly yards and flight paths.

APM NOI-01 **Duration of Helicopter Use.** Active helicopter operation at landing zones within 700 feet of occupied residences would be limited to 2 hours per day. Helicopter use may be extended if required to ensure that electrical service is maintained for customers or for safety reasons.

APM NOI-02 **Helicopter Use in Residential Areas.** Helicopters would be required to maintain a height of at least 500 feet when passing over residential areas, except at temporary construction areas or when actively assisting with conductor stringing. All helicopters would be required to maintain a lateral distance of at least 500 feet from all schools.

Transportation

MM T-1 **Prepare and implement a Construction Traffic Control Plan.** Prior to the start of construction, SCE shall submit a Construction Traffic Control Plan for review and approval by state and local agencies responsible for public roads that would be directly affected by the con-

struction activities and/or would require permits and approvals. The Construction Traffic Control Plan shall include, but not be limited to:

The locations and use of flaggers, warning signs, barricades, delineators, cones, arrow boards, etc., according to standard guidelines outlined in the Manual on Uniform Traffic Control Devices, the Standard Specifications for Public Works Construction, and/or the California Joint Utility Traffic Control Manual.

The locations of all road or traffic lane segments that would need to be temporarily closed or disrupted due to construction activities.

The locations where guard poles, netting, or similar means to protect transportation facilities for any construction work requiring the crossing of a local street, highway, or rail line are proposed.

The use of continuous traffic breaks operated by the Highway Patrol on state highways (if necessary).

Plans to coordinate in advance with emergency service providers to avoid restricting the movements of emergency vehicles. Police departments and fire departments shall be notified in advance by SCE of the proposed locations, nature, timing, and duration of any roadway disruptions, and shall be advised of any access restrictions that could impact their effectiveness. At locations where roads will be blocked, provisions shall be ready at all times to accommodate emergency vehicles, such as immediately stopping work for emergency vehicle passage, providing short detours, and developing alternate routes in conjunction with the public agencies.

MM T-2 **Repair roadways and transportation facilities damaged by construction activities.** If roadways, sidewalks, medians, curbs, shoulders, or other such transportation features are damaged by project construction activities, as determined by Caltrans or other public agency responsible for the transportation feature, such damage shall be repaired and restored to the pre-project condition by SCE. Prior to construction, SCE shall establish the pre-construction conditions of the roads within 500 feet in each direction of project access points (where heavy vehicles will leave public roads to reach unpaved access roads, yards, or other project sites) and confer with state and local agencies regarding roads in the agency's jurisdiction to be crossed by the project components. Establishment of existing conditions may include dated photographic or video documentation.

- At the end of major construction, SCE shall coordinate with each affected jurisdiction to confirm what repairs are required. Any damage demonstrable to the project is to be repaired to the pre-construction condition within 60 days from the end of all construction, or on a schedule mutually agreed to by SCE and the affected jurisdiction. If multiple projects or users access the same transportation features, SCE will pay its fair share of the required repairs. SCE shall provide CPUC and affected jurisdictions (as applicable) proof when any necessary repairs have been completed.

MM T-3 **Prepare and implement a final helicopter use plan.** SCE and its contractor shall prepare and obtain approval of a Final Helicopter Use Plan 30 days prior to using helicopters to transport personnel, materials, or equipment for the deconstruction of existing project facilities or construction of new or replacement project facilities. The plan shall identify the specific locations requiring deconstruction or construction work using helicopters. The Final Helicopter Use Plan shall draw upon protocols and methods used on previous transmission line projects and shall be submitted to CPUC and BLM for approval.

- The Federal Aviation Agency (FAA) has jurisdiction over U.S. airspace, aircraft, aircraft operations, airports, and pilots. To the extent that they do not conflict with any FAA requirements, the following shall apply to helicopter use and be incorporated in the Final Helicopter Use Plan.

All aircraft and pilots shall be in full compliance with applicable FAA requirements and standards.

On the day before a flight, helicopter flight information shall be provided by email to CPUC/ BLM monitors regarding the specific sites to be used for helicopter retrieval of materials, equipment, or personnel and the destination of the materials, equipment, or personnel being transported. Information provided in the email shall include pilot name, contact number, aircraft type, aircraft registration number, aircraft color, work/ flight area, anticipated beginning and completion times, and scope of work.

The specific locations requiring deconstruction or construction work using helicopters shall be identified.

Temporary staging of materials outside of approved yards or on access or spur roads shall not occur without prior approval of CPUC or BLM, as appropriate.

The yards to and from which helicopters would fly (fly yards) shall be identified and shall be of sufficient size to ensure safe operations, given the other activities occurring at the yards and the vicinity.

Fly yards shall be no closer than a horizontal distance of 475 feet from occupied residences to avoid unacceptable nuisances.

Site-specific steps taken to avoid nuisances and ensure safe refueling shall be identified for each fly yard.

Flight paths that minimize flights in wilderness areas and near schools, hospitals, nursing homes, and other sensitive group receptors shall be identified and followed.

Except in an emergency, helicopters shall land or hover near the ground only in areas previously approved for landing, and all dust control and biological and cultural resource protection requirements shall apply.

External loads will be secured by appropriate rigging, including boxing, netting, choking, and cabling, or other suitable means. Only qualified riggers shall prepare and attach external loads to helicopters, and rigging shall be appropriate to the nature of the load, including the use of devices as necessary to prevent materials being lost in flight. Where appropriate to reduce load in-flight spinning and movement, drag chutes will be attached to loads. The need for drag chutes will be determined by the pilot and rigging personnel, where appropriate. At locations where rigging is to occur, a sufficient supply of appropriate rigging and containment materials in good repair shall be on hand at all times.

All aircraft are to be configured with weight sensors such that, when preparing to haul external loads, the pilot is able to determine the weight of the load being lifted.

Yards or landing zones shall have a designated qualified individual managing the movement of aircraft in and out of the yard or landing zone when flight activity is high.

Appropriate protocols for communication among pilots and between pilots and the ground shall be developed and implemented.

A GPS-based data system shall be installed in each aircraft

The system shall identify for the pilot all project-approved project flight paths and those areas where overflights are restricted (such as seasonally restricted bird nesting areas and sensitive residential or institutional areas) and shall be updated as often as any flight restrictions are implemented or lifted.

The system shall automatically record and preserve flight data sufficient to identify the aircraft's flight path, including altitude above ground. The system shall be capable of providing the information required with regard to flight path and aircraft identifier, and provide a location "ping" no less frequently the once every 3 seconds. These data shall be collected daily and maintained by SCE or its contractor for a period of no less than six months and made available to CPUC or BLM upon request.

- The Helicopter Use Plan shall be submitted to CPUC and BLM for review and approval at least 30 days prior to the use of helicopters on the project. Once the Helicopter Use Plan is made final, a copy shall be provided as a courtesy to each jurisdiction through which the Project passes.

Tribal Cultural Resources

MM CR-1 **Retain a Cultural Resources Specialist.** Prior to the start of construction, a project Cultural Resources Specialist (CRS) whose training and background conforms to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61 (36 C.F.R., part 61) shall be retained by SCE to supervise monitoring of construction excavations and to prepare a Cultural Resources Management Plan (CRMP) for the approved project. Their qualifications shall be appropriate to the needs of the project, specifically an archaeologist with demonstrated prior experience in the southern California desert and previous experience working with Southern California Tribal Nations. A copy of their qualifications shall be provided to the CPUC for review and approval. The project Cultural Resources Specialist shall use the services of Cultural Resources Monitors, tribal monitors and Field Crew as needed, to assist in mitigation, monitoring, and curation activities, as outlined in the CRMP. A copy of all proposed cultural staff qualifications shall be provided to the CPUC for review and approval prior to beginning work.

MM CR-2 **Cultural resources environmental awareness training.** Project personnel, including cultural resources monitors and tribal monitors, shall receive training that includes sensitivity training provided through participating tribes in video format regarding the appropriate work practices necessary to effectively implement the APMs and mitigation measures related to cultural resources and tribal cultural resources, including human remains. Training shall be required for all personnel before they begin work on a project site and repeated as needed for all new personnel before they begin work on the Project. This training program shall be submitted to the CPUC for approval at least 30 days before the start of construction and include procedures to be followed upon the discovery or suspected discovery of archaeological materials, tribal cultural resources, and human remains, consistent with the procedures set forth in the CRMP. This training may be integrated with a broader Worker Environmental Awareness Training program. Documentation of the training will be provided to the BLM and CPUC. The CPUC will provide documentation to the consulting tribes.

MM CR-3 **Prepare and implement a Cultural Resources Management Plan.** Prior to the beginning of construction, SCE shall submit at least 90 days before construction a Cultural Resources Management Plan (CRMP) for the project to the BLM and CPUC for review. The CPUC will submit the CRMP to representatives of consulting tribes for a 30-day review and comment period prior to approving the CRMP. The CPUC will in good faith consider any comments received from consulting tribes and incorporate such comments into the CRMP as deemed feasible. A single plan document that meets the requirements of both BLM and CPUC is acceptable. The CRMP shall be implemented under the direction of the SCE and the project Cultural Resources Specialist. The CRMP shall be prepared at the sole expense of the project proponent and shall meet all regulatory requirements. At a minimum the CRMP must address the following:

The duties of the project Cultural Resources Specialist and associated staff shall be fully explained, including oversight/management, monitoring, and reporting duties with respect to known cultural resources and tribal cultural resources as well as site evaluation, data collection, and reporting for any newly identified resources discovered during project activities. The professional standards and ethical guidelines for all cultural resource personnel will be clearly outlined in the CRMP.

No collection of artifacts is authorized or planned for this project. If an unanticipated discovery requires evaluation via excavation and artifact collection, the retention/disposal, and permanent and temporary curation policies shall be specified. The decision-making process for identifying which artifacts are curated or reburied, where they are reburied and the individuals, including tribal participants, making these decisions shall be described. These policies shall apply to cultural resources materials and documentation resulting from evaluation and treatment of cultural resources and tribal cultural resources discovered during project activities.

The CRMP shall define and map all known prehistoric and historic resources eligible to the NRHP and CRHR within 100 feet of proposed work areas. How these resources will be avoided and protected during construction will be described. Avoidance measures to be used will be described, including where and when they will be implemented. How avoidance measures and enforcement of Environment Sensitive Areas (ESAs) will be coordinated with construction personnel will be included.

The implementation sequence and the estimated time frames needed to accomplish all project-related tasks (i.e., evaluation of new resources resulting in work stoppage, time to complete reports, etc.) during the project activities and any post-project analysis phases of the project, if necessary, shall be specified. The intensity of monitoring proposed for each resource that may be impacted by project activities shall be outlined in the CRMP.

Person(s) expected to perform each monitoring and, if necessary, treatment task, their responsibilities, and the reporting relationships between project construction management and the monitoring and treatment team shall be outlined in the CRMP.

Tribal Monitors shall be retained to monitor ground disturbing activities within 100 feet of prehistoric and protohistoric resources. Tribal Monitors shall be retained for data recovery within prehistoric and protohistoric resources identified for data recovery. The ELM Project area spans multiple Tribal areas. The Tribe affiliated with a specific area will be considered first to provide Tribal Monitors. If multiple Tribes or Tribal Organizations are affiliated with a specific area, Tribal Monitors will be selected on a rotating

basis. The CRMP will describe the roles and responsibilities of the monitors. Tribal monitors will be compensated. All impact-avoidance measures (such as the presence of monitors) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related impacts.

The commitment to record resources on Department of Parks and Recreation (DPR) 523 forms, to map, and to photograph all newly identified cultural resources over 50 years of age shall be stated. Participating tribes may offer their perspective regarding the newly identified cultural resource. Comments by tribes may be documented on the DPR 523c, parts A13 (Interpretation) and A14 (Remarks).

The commitment to curate all artifacts retained as a result of any archaeological investigations in accordance with the appropriate requirements and the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, into a retrievable storage collection in a public repository, museum, or reburial at the request of tribal representatives shall be stated. The different curation policies for archaeological material collected on BLM land as opposed to private or state land, shall be clearly articulated.

The commitment of SCE to pay all curation or reburial fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project shall be stated. Should consulting tribes request that artifacts not be reburied, the CRMP shall identify a curation facility that could accept cultural resources materials resulting from project cultural resources investigations on private or state land. Tribal monitors shall be present for any reburials.

A final report shall be prepared presenting the results of the monitoring efforts. The contents, format, and review and approval process of the final report shall meet appropriate federal, state, and local guidelines.

MM CR-4 **Inadvertent discovery of cultural or tribal cultural resources.** If previously undiscovered resources are identified during project activities all activities within 100 feet (30 meters) of the resource shall halt. The onsite construction supervisor and SCE shall be notified. SCE will notify the CPUC and BLM of the discovery. The monitoring team shall flag-off the area. SCE and its cultural resource specialist will coordinate with the CPUC, BLM, NPS and tribal representatives as appropriate, on avoidance measures.

MM If the resource cannot be avoided, methods of resource evaluation, and methods of mitigation will be discussed with all appropriate parties. Work may be temporarily diverted to activities that are outside of 100 feet (30 meters) of the discovered or suspected resource. The resource shall be evaluated to determine whether it is eligible for the NRHP, CRHR, a unique archaeological resource, a tribal cultural resource, or part of a larger culturally sensitive landscape area or traditional cultural property. If the resource is determined not to be significant, work may recommence in the area. If the resource is determined significant work shall remain halted within 100 feet (30 meters) of the area of the find, SCE shall consult with the BLM, CPUC, and representatives of the consulting tribes as appropriate regarding methods to ensure that no adverse effect and no substantial adverse change would occur to the significance of the resource. Preserva-

tion in place (i.e., avoidance) is the preferred method of mitigation for impacts to cultural resources. Other methods of mitigation, described below, shall only be used if it is determined the method would provide equivalent or superior mitigation of the impacts to the resource. The alternative methods of mitigation may include data recovery and documentation of the information contained in the resource to answer questions about local prehistory or history. The methods and results of the evaluation or data recovery work at an archaeological find shall be documented in a professional-level technical report to be filed with the California Historical Resources Information System (CHRIS). Work in the area may commence upon completion of treatment, as approved by the BLM and CPUC.

- If data recovery of resources is necessary, additional archaeologists shall perform the excavation while the monitoring team(s) continues to monitor construction. Additionally, the tribes shall be offered the opportunity to monitor data recovery efforts at prehistoric sites in addition to construction efforts, under the same contract terms. This opportunity shall additionally be extended to tribes that consulted on this project, but for which a tribal monitor was not provided for construction efforts.

MM CR-5 **Avoidance of cultural and tribal cultural resources.** When project work is planned within 100 feet of a known prehistoric-era cultural resource or a tribal cultural resource, or any resources that are eligible for the CRHR and/or NRHP, avoidance areas shall be established and monitors shall be present as outlined in the CRMP. ESAs shall be established with a 50-foot buffer around each resource prior to project activities, except where the 50-foot buffer would encroach on a work area, in which event the ESA buffer shall be the near edge of the identified work area. Monitoring teams shall include one qualified cultural resources monitor and one Native American monitor at prehistoric sites. ESAs shall be established by a qualified cultural resources monitor. The timing and intensity of the monitoring may vary according to the type of resource and the nature of the work planned and shall be determined in consultation with consulting tribes, as appropriate.

MM CR-6 **Prepare monitoring reports.** Upon completion of cultural resources and tribal cultural resources monitoring, SCE shall prepare a single report that summarize the monitoring efforts and the results, analyses, and conclusions of the monitoring program. Individual volumes per land ownership will be included and provide additional details. Copies of the report shall be submitted to both the CPUC and BLM within 60 days of the close of construction. Thereafter, consistent with individual agency policy, each agency will disseminate to the consulting tribes the report applicable to land under that agency's jurisdiction. Draft reports under CPUC jurisdiction will be submitted to consulting tribes for a 30-day review and comment period concurrent with agency review. If no new resources were discovered during construction, a letter report shall be submitted to the CPUC and BLM summarizing monitoring efforts. If resources were identified during construction, the reports shall be consistent with the California Archaeological Resources Management Reports (ARMR) and commensurate with the nature and significance of the identified resource(s). If artifacts are collected, they shall be curated at a recognized curation facility unless consulting tribes request that the Native American artifacts be reburied on site. Documentation associated with any newly identified resources shall be filed with the CHRIS, if appropriate.

MM CR-7 **Inadvertent discovery of human remains on state owned land or private property.** In the event that human remains or suspected human remains are identified, SCE shall comply with California law (Heath and Safety Code Section 7050.5; PRC Sections 5097.94, 5097.98, and 5097.99). The area shall be flagged off and all project activities within 200

feet (60 meters) of the find shall immediately cease. The CPUC-approved Cultural Resources Specialist and SCE shall be immediately notified. SCE shall immediately contact the Medical Examiner at the County Coroner's office, BLM, CPUC as well as representatives of consulting tribes. The Medical Examiner has two (2) working days to examine the remains. If the Medical Examiner believes the remains are Native American, they shall notify the California Native American Heritage Commission (NAHC) within 24 hours. If the remains are not believed to be Native American, the appropriate local law enforcement agency will be notified.

- The NAHC will immediately notify the person or tribe it believes to be the most likely descendant (MLD) of the remains, and the MLD has 48 hours to make recommendations to the landowner or representative for the respectful treatment or disposition of the human remains and any associated grave goods. If the MLD does not make recommendations within 48 hours, the remains shall be reinterred in the location they were discovered and the area of the property shall be secured from further disturbance. If there are disputes between the landowner and the MLD, the NAHC shall mediate the dispute and attempt to find a solution. If the mediation fails to provide measures acceptable to the landowner, the landowner or their representative shall reinter the remains and associated grave goods and funerary objects in an area of the property secure from further disturbance. The location of any reburial of Native American human remains shall not be disclosed to the public and shall not be governed by public disclosure requirements of the California Public Records Act, Cal. Govt. Code § 6250 et seq., unless otherwise required by law. The Medical Examiner shall withhold public disclosure of information related to such reburial pursuant to the specific exemption set forth in California Government Code Section 6254(r).

MM CR-8 **Inadvertent discovery of human remains on federal land.** If potential human remains are discovered during any Project activity on lands administered by federal agencies, all activities within 200 feet that will cease immediately. SCE will take appropriate steps to secure and protect human remains and any funerary objects from further disturbance. SCE will notify the BLM and the County Coroner (California Health and Safety Code 7050.5(b)) immediately. If the remains are determined to be Native American or if Native American cultural items pursuant to the Native American Graves Protection and Repatriation Act (NAGPRA) are uncovered, the remains shall be treated in accordance with the provisions of NAGPRA (43 CFR 10) and the Archaeological Resources Protection Act (43 CFR 7). SCE shall assist and support the federal agency, as appropriate, in all required NAGPRA and Section 106 actions, government-to-government and consultations with Native Americans, agencies, and consulting parties as requested by the federal agency. SCE shall comply with and implement all required actions and studies that result from such consultations.

APM TCR-01 **Tribal Monitoring.** An archaeological monitor, and tribal monitor that is culturally affiliated with the project area, may be present for all ground-disturbing activities within or directly adjacent to previously identified TCR(s) and prehistoric resources as outlined in the CRMP. The archaeological and tribal monitors will consult the CRMP to determine when to increase or decrease the monitoring effort should the monitoring results indicate a change is warranted. Monitoring reports shall be prepared and submitted to the BLM and CPUC on a monthly basis.

APM TCR-02 **Tribal Engagement Plan.** A tribal engagement plan shall be prepared, which will detail how Native American tribes will be engaged and informed throughout the proposed project. The tribal engagement plan will be included in the CRMP.

Utilities and Service Systems

MM UT-1 **Provide cathodic protection.** Prior to commencing construction or as soon as such data are available, if it is not available before construction, SCE shall determine and report to CPUC and BLM the location of adjacent utilities and other metallic or conducting objects susceptible to induced voltages and currents. The scope of SCE's report shall include the results of an alternating current interference study by SoCalGas on the natural gas pipelines that parallel or cross portions of the Lugo-Mohave 500 kV Transmission Line. Prior to the in-service date of the Proposed Project series capacitors, SCE shall ensure that the necessary grounding or other appropriate measures to provide appropriate cathodic protection has been installed and shall confirm this to the CPUC and BLM.

- If SCE identifies other utilities near the 500 kV Transmission Lines that may be susceptible to increased risk of corrosion due to induced currents or voltages, SCE shall conduct or have conducted an alternating current interference study during construction of the ELM Project that evaluates the alternating current interference effects of the 500 kV transmission lines on such other utilities. The study shall include the development of a model using the maximum magnetic field levels for the transmission lines, including the conductor arrangement. For all utilities identified with a corrosion potential, SCE shall coordinate with the owner of the utility and use data gathered in the alternating current interference study to determine appropriate design measures to protect the utility from corrosion, such as ground mats or gradient control wires for cathodic protection of buried pipelines and other utilities. The study, summary of coordination with potentially affected utilities, and specifications of any design measures to be installed shall be submitted to the CPUC and BLM for review and approval at least 60 days prior to initiation of installation of such protection. All required protective and grounding work shall be completed prior to the in-service date of the Proposed Project series capacitors.

MM UT-2 **Implement mitigation measures during pipeline protection work.** Any agreement between SCE on the one hand and any party undertaking installation of pipeline protection measures required as a result of the ELM Project on the other hand shall include a requirement that applicable mitigation measures required during construction of the ELM Project also apply to and be implemented during any required pipeline-related work. At a minimum, and to the extent that they apply in the geographic area of the pipeline work, these will include mitigation measures for impacts to biological resources, cultural and tribal cultural resources, and hazards and hazardous materials. The BLM and NPS may substitute equally effective mitigation measures or may require additional measures be implemented. A copy of the agreement between SCE and any other party for the pipeline work shall be provided to CPUC, BLM, and NPS. Business confidential information may be redacted, but the general nature of any redaction shall be identified. Absent a binding agreement between SCE and any other party to implement the required mitigation measures, or equally effective measures imposed by BLM and/or NPS, SCE will not be authorized to fund any of the required pipeline work.

MM UT-3 **Provide safety features for induced currents on adjacent metallic objects.** Prior to commencing construction or as soon as such data are available, if it is not available before

construction, SCE shall determine and report to CPUC and BLM the location of metallic or conducting objects that may present a shock hazard to the public due to induced voltages or currents. SCE shall prepare an Induced Current Touch study that evaluates the conductive and inductive interference effects of the 500 kV transmission lines and new overhead distribution lines on the identified conductive objects. The Induced Current Touch study, including the criteria and approach that were used to determine what objects could present a shock and the details of the grounding or other measures to be installed, shall be submitted to the CPUC and BLM for review and approval. Prior to the in-service date of the Proposed Project series capacitors, SCE shall install the necessary grounding or other appropriate measures to protect the public from hazardous shocks or arcing.

Wildfire

MM WF-1 **Prepare and implement a Fire Management Plan.** A project-specific Fire Management Plan for construction of the ELM project shall be prepared by SCE and submitted for review and approval by the CPUC prior to initiation of construction. The draft copy of the Plan must also be provided to each responsible fire agency at least 90 days before the start of construction activities in areas designated as Very High or High Fire Hazard Severity Zones with a request for comments on the Plan's adequacy within 30 days. Plan reviewers shall include CPUC, BLM, CAL FIRE, and San Bernardino County. Comments received on the draft Plan shall be provided to SCE from all other reviewers, and SCE shall resolve each comment in consultation with the commenting agency. CPUC shall approve the final Plan, which shall be provided to the Plan reviewing agencies at least 30 days prior to the initiation of construction activities in the Fire Hazard Severity Zones. SCE shall fully implement the Plan during all construction activities.

- A qualified project Fire Marshal or person of similar title and experience shall be established by SCE to implement and enforce all provisions of the approved Fire Management Plan as well as perform other duties related to fire detection, prevention, and suppression for the project. The Fire Marshal shall monitor construction activities to ensure implementation and effectiveness of the plan.

- The Plan shall cover:

The purpose and applicability of the plan;

Responsibilities and duties;

Preparedness training and drills;

Procedures for fire reporting, response, and prevention that include:

identification of daily site-specific risk conditions,

the appropriate tools and equipment needed on vehicles and to be on hand at sites,

reiteration of fire prevention and safety considerations during tailboard meetings, and

daily monitoring of the red-flag warning system with appropriate restrictions on types and levels of permissible activity;

Coordination procedures with BLM and San Bernardino County fire officials;

Crew training, including fire safety practices and restrictions; and

Methods for verification that Plan protocols and requirements are being followed.

(END OF APPENDIX A)