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June 26, 2009

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Re: CALICO - SES SOLAR ONE PROJECT (08-AFC-13)
CURE Data Requests, Set One (Nos. 1-228)

Dear Ms. Bellows and Ms. Champion:

California Unions for Reliable Energy (CURE) submits this first set of data requests on Biological Issues to Tessera Solar for the Calico - SES Solar One Project, pursuant to Title 20, section 1716(b), of the California Code of Regulations. The requested information is necessary to: (1) more fully understand the project; (2) assess whether the project will be constructed and operated in compliance with all laws, ordinances, regulations and standards; (3) assess whether the project will result in significant environmental impacts; and (4) assess potential mitigation measures.

CURE reserves the right to submit additional data requests on any topic that requires further information. Pursuant to section 1716(f) of the Energy

Commission's regulations, written responses to these requests are due within 30 days. If you are unable to provide or object to providing the requested information by the due date, you must send a written notice of your objection(s) and/or inability to respond, together with a statement of reasons, to Commissioners James Boyd and Jeffrey Byron and to CURE within 20 days.

Please contact us if you have any questions. Thank you for your cooperation with these requests.

Sincerely,

/s/

Loulena A. Miles

LAM:bh
Attachment

Background: DESERT TORTOISE SURVEY METHODS AND VALIDITY OF BASELINE DATA

I. ADHERENCE TO USFWS SURVEY PROTOCOL

The California Energy Commission (CEC) requires Project surveys to follow appropriate protocols.[1] The AFC indicates desert tortoise surveys were conducted according to the U.S Fish and Wildlife Service's (USFWS) 1992 *Field Survey Protocol for a Non-Federal Action that may occur within the Range of the Desert Tortoise.*[2] Prior to surveys, Project biologists were trained in the 30-foot transect spacing methods required of this protocol.[3] Due to the size of the site, the applicant conducted sampling within a series of 80-acre plots dispersed throughout the Assessment Area. Each pair of biologists surveyed two 80-acre plots per day.[4] [5]

USFWS protocol recommends closer transect spacing (i.e., 10-foot) when topography obscures or reduces that surveyor's ability to see tortoise sign.[6] For example, the USFWS recommends 10-foot transect spacing on the foothills and slopes of mountains that contain rocks or boulders.[7] Although rocky slopes are present in portions of the tortoise survey area, the AFC does not discuss whether the closer transect spacing recommended by the USFWS was implemented.[8]

In addition to conducting systematic transects throughout the Project site, the USFWS protocol requires "Zone of Influence" surveys around the project site.[9] If the survey results do not include the Zone of Influence, the USFWS has stated it may not concur with the survey results.[10] USFWS protocol also requires that all desert tortoise data (including size of shelter sites, shells, and estimated size of live tortoises) be carefully, legibly, and completely recorded on datasheets.[11]

To determine the accuracy of the surveyor in locating desert tortoise sign during Presence-or-Absence Surveys for each project area, the USFWS recommends that the surveyor conduct an intensive survey in a portion of the project area following completion of the 100 percent survey. The quality or accuracy of the survey for the

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[1] CEC Siting Regulations Appendix B (g)(13)(D)(i).
[2] AFC, Master Section 5.6: Data Adequacy Worksheet.
[3] *Id.*
[4] AFC, p. 5.6-4.
[5] These represent conservative estimates based on information presented in the AFC and calculations made by CURE. If protocol survey guidelines were followed, this would equate to approximately 35 kilometers of desert tortoise transects a day if surveyors worked independently, and more than 70 kilometers of transects a day if surveyors worked together.
[6] US Fish and Wildlife Service. 1992. Field survey protocol for any non-federal action that may occur within the range of the desert tortoise. Available from: Fish and Wildlife Service, Ventura (CA).
[7] *Id.*
[8] AFC, Appendix Y: p. 3-2.
[9] US Fish and Wildlife Service. 1992. Field survey protocol for any non-federal action that may occur within the range of the desert tortoise. Available from: Fish and Wildlife Service, Ventura (CA).
[10] *Id.*
[11] *Id.*

project area is determined by comparing it with the results of the intensive survey. If there is a major difference in number of sign recorded between the two survey efforts, the project survey may not be deemed adequate by the USFWS.[12]

Data Requests

1. Please clarify why the *Non-Federal Action* protocol was the appropriate protocol to use for the Project rather than the *Field Survey Protocol for any Federal Action* when the Project involves a right-of-way permit from the BLM.
2. Please substantiate or clarify the applicant's desert tortoise survey techniques. In particular, please:
    a. Clarify how surveyors were able to survey 160 acres a day to protocol while implementing the 30-foot transect spacing requirement. In your response please explain how surveying at least 35 km/day provides a valid estimate of tortoise presence and abundance, given the average rate of 15 km/day observed by Nussear et al. (2008).
    b. Indicate how much of each 8-hour survey day was devoted to conducting protocol desert tortoise surveys (i.e., excluding travel time to and from each survey plot, lunch and other breaks, and time spent identifying other taxa).
    c. Provide any GPS data files that document the survey transects conducted within each desert tortoise survey plot.
    d. Indicate whether each team of biologists walked the same transect lines or separate transect lines.
3. Please explain why Zone of Influence surveys were not conducted for the Project.
4. Please explain why areas to the east and west of the Project site were surveyed, but not areas to the north and south.
5. Please provide the results (including map) of the intensive surveys conducted for the Project. If intensive surveys were not conducted, please provide a justification for why they were not conducted and describe how surveyor accuracy was evaluated.
6. Please clarify whether closer transect spacing was implemented at any location(s) within the survey area. If closer transects were implemented, please mark these locations on a map.
7. Please indicate whether any desert tortoises were handled during Project surveys. If tortoises were handled, please provide documentation of the section 10(a)(1)(A) permit(s) issued by the USFWS authorizing handling. If

[12] US Fish and Wildlife Service. 1992. Field survey protocol for any non-federal action that may occur within the range of the desert tortoise. Available from: Fish and Wildlife Service, Ventura (CA).

tortoises were not handled, please indicate how tortoise measurements provided on the survey data sheets were obtained.[13]

8. Please explain why the desert tortoise data sheets are missing survey information such as start time, stop time, and temperature.

9. Please explain why surveyors did not record all sign including size of shelter sites, shells, and estimated size of live tortoises.

II. QUALIFICATIONS OF SURVEYORS

As a general rule, the USFWS considers a qualified desert tortoise surveyor a biologist with a degree in biology (or related field). He/she must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises. This generally means a minimum of 60 days field experience searching for desert tortoises and tortoise sign.[14] Resumes provided in the AFC suggest many members of the applicant's survey team had no prior experience with desert tortoise surveys.[15]

Data Request

10. For each person that conducted desert tortoise surveys, please indicate the personnel that had a minimum of 60 days prior field experience searching for desert tortoises and tortoise sign.

11. For surveyors without 60 days prior field experience, provide a discussion of how surveyors were trained and any measures that were taken to ensure they obtained accurate survey results.

III. DATA COLLECTION

In conducting the surveys, the biologists used GPS units to record the locations of any tortoises or tortoise sign (e.g., burrows). Data were collected on the size and health of each tortoise, the condition of its burrow (if present), and habitat associated with each tortoise sighting.[16] Incidental observations of tortoise and sign were recorded during the field efforts.[17]

Data Requests

12. The applicant's desert tortoise survey data sheets indicate considerably more tortoise scats and inactive tortoise burrows were detected than were mapped in

[13] AFC, Appendix H of Appendix Y.
[14] US Fish and Wildlife Service. 1992. Field survey protocol for any non-federal action that may occur within the range of the desert tortoise. Available from: Fish and Wildlife Service, Ventura (CA).
[15] AFC, Appendix G of Appendix Y.
[16] *Id.*
[17] *Id.*

the AFC.[18] Please provide a corrected map that reflects all desert tortoises and tortoise signs that were detected during Project surveys.

13. Please discuss how the surveyors determined burrows were inactive.

14. Please explain which desert tortoise data sheets were completed during focused surveys and which ones were completed as a result of incidental observations.

15. Please discuss how tortoise health was assessed, including whether tortoises were examined for Upper Respiratory Tract Disease or any other illness.

16. Since the AFC contains very little of the data collected by the survey team (i.e., size and health of each tortoise, burrow condition, habitat associated with sighting), please provide these data or clarify why they were omitted from many of the data sheets.[19]

IV. SURVEY RESULTS AND DATA ANALYSIS

The AFC indicates a 33% sampling rate was applied to achieve 53 eighty-acre sample plots (totaling 4,240 acres) within the AFC Assessment Area.[20] Five live tortoises and one active tortoise burrow were detected in the AFC Assessment Area during the protocol surveys.[21] An additional 13 live tortoises and 8 active burrows were incidentally detected in the AFC Assessment Area during other field efforts.[22] Within the larger SES Assessment Area, 17 tortoises and 6 active burrows were detected during protocol surveys, and 24 tortoises and 13 active burrows were incidentally detected during other field efforts.[23] Within the BLM Area of Critical Environmental Concern (ACEC), 11 tortoises and 9 active burrows were detected during protocol surveys, and 5 tortoises and 1 active burrow were incidentally detected during other field efforts.[24]

There appears to be a statistically significant difference between the number of tortoises and tortoise signs the applicant detected through incidental effort and those detected through protocol surveys. For example, within the AFC Assessment Area 260% more tortoises and 800% more tortoise burrows were detected through incidental efforts than through protocol surveys.[25] This appears to be the type of major difference the USFWS cautions may deem surveys inadequate.

The AFC concluded the SES Assessment Area likely supports between 70 and 127 desert tortoises, and the adjacent BLM ACEC area likely supports between 61 and 111 desert tortoises.[26] These estimates incorporated the assumption that tortoise

[18] *Id.* and AFC Appendix Y: Figure 4.
[19] *See* AFC, Appendix H of Appendix Y.
[20] *Id.*
[21] AFC, p. 5.6-9.
[22] *Id.*
[23] *Id.*
[24] *Id.*
[25] AFC, p. 5.6-9.
[26] *Id.*

detection rate was between 55% and 68%, which was the rate observed in a study by Nussear et al. (2008) during which each surveyor walked an average linear distance of 15 kilometers in an 8.5-hour day.[27]

The USFWS considers the results of a Presence-or-Absence Survey, including the Zone of Influence, to be valid for no more than one year.[28] This time period of survey data reliability may be significantly reduced depending on project size, location, or proximity to other land disturbance.[29] Data presented in the AFC is over one year old (and some is over two years old).[30]

Data Requests

17. Please discuss the appropriateness of using the detection rate estimate provided by Nussear et al. (2008) considering the disparate level of effort per unit area between the two investigations (i.e., the applicant's and Nussear's).
18. Please discuss possible explanations for why there was a considerable difference in the number of tortoises and burrows detected through use of the two different survey methods (i.e., protocol versus incidental observation). In your response, please justify why the surveys should be deemed adequate despite the major differences that were observed.
19. Please discuss how the results of Project desert tortoise surveys will be applied to impact evaluation and proposed mitigation. If tortoise abundance or presumed absence will be applied, please discuss any concurrence from the USFWS that survey results more than one year old can be applied.
20. Please clarify the distinction between the "AFC Assessment Area" and the "SES Assessment Area", indicate whether either of these areas includes land within the BLM ACEC, and confirm that the two terms were accurately applied throughout the AFC.

Background: DESERT TORTOISE IMPACT ASSESSMENT

I. <u>IMPACTS TO HABITAT</u>

The AFC concluded approximately 56% of the AFC Assessment Area and 11% of the 1000-foot buffer was occupied by desert tortoise.[31] However, these values do not appear to coincide with what is shown on maps within the AFC. In addition, although the

[27] Nussear, K.E., T.C. Esque, J.E. Heaton, M.E. Cablk, K.K. Drake, C. Valentin, J.L. Yee, P.A. Medica. 2008. Are Wildlife Detector Dogs Or People Better At Finding Desert Tortoises (*Gopherus agassizii*)? Herpetological Conservation and Biology 3(1): 103-115.
[28] US Fish and Wildlife Service. 1992. Field survey protocol for any federal action that may occur within the range of the desert tortoise. Available from: Fish and Wildlife Service, Ventura (CA).
[29] *Id.*
[30] AFC, Appendix A of Appendix Y.
[31] AFC, p. 5.6-9.

AFC concluded the majority of the AFC Assessment Area is considered suitable for desert tortoise, it does not map or otherwise specify where unsuitable habitat occurs, and it does not provide information on how habitat suitability was evaluated.[32]

Data Requests

21. Please provide additional details to explain how the occupancy estimates provided in the AFC were derived. Specifically, please clarify why the estimates provided do not coincide with what is shown on maps in the AFC.[33]

22. Please explain how desert tortoise habitat suitability was determined and quantify the modifier "majority" (in reference to the majority of the AFC Assessment Area being suitable habitat).[34]

23. Please quantify the amount of unsuitable desert tortoise habitat in the Assessment Area, indicate where this habitat occurs, and discuss how the habitat was deemed unsuitable.

II. ABUNDANCE ESTIMATES

Based on the sample plot survey coverage of 33% and an estimated detection rate of 55% to 68%, the applicant estimates the SES Assessment Area supports between 70 and 127 desert tortoises, and the BLM ACEC supports between 61 and 111 desert tortoises.[35] Survey data do not appear to support these estimates.

The applicant concluded a total of 18 live tortoises and 9 active burrows will be directly impacted as a result of the proposed Project.[36] According to the AFC: "This may represent between 18 and 33 tortoises based on estimations derived from the protocol survey data."[37] This statement is confusing and requires clarification. It's particularly unclear how the applicant's lower estimate would coincide with actual survey data (i.e., 18 tortoises were detected within the Project area),[38] when these data were known to represent a 33% sample only and not account for the estimated detection rate (which is known to be considerably less than 100%).

The applicant concluded indirect impacts may occur to an additional 13 live tortoises and 1 active burrow within the 1000-foot buffer zone.[39] This statement does not

[32] AFC, p 5.6-9.
[33] *See* AFC, Appendix Y: Figures 4 and 5.
[34] *Id*.
[35] *Id.*
[36] AFC, p. 5.6-22.
[37] *Id.*
[38] AFC, p. 5.6-9.
[39] AFC, p. 5.6-22.

account for potential impacts to tortoises outside of the 1000-foot buffer, and it does not reflect the fact that the applicant conducted a sample rather than a census.[40]

Data Requests

24. Please clarify how the applicant estimated between 18 and 33 tortoises[41] will be directly impacted by the Project and specify whether the presence of scats and carcasses were incorporated into the estimate.

25. In discussing impacts, the applicant stated: "Additional tortoises may occur in the remainder of the AFC Project Site, although presumably at lower densities than the survey cells where tortoise and tortoise sign were actually detected."[42] Please discuss the environmental conditions that would lead the applicant to presume tortoise densities would be higher in survey cells than outside of them, particularly if the survey cells were designed to represent a random sample.

26. Please provide a revised discussion of potential indirect impacts to tortoises that accounts for the sampling that was conducted and additional tortoises beyond the 1000-foot buffer.

Background: PROPOSED MITIGATION FOR IMPACTS TO THE DESERT TORTOISE

The AFC indicates impacts on desert tortoise and its habitat will be significant as a result of the Project. However, the applicant concluded these impacts "can be reduced to less than significant as a result of an effective biological resource mitigation program which includes a species relocation and/or reasonable habitat compensation plan."[43]

The AFC concluded Project impacts on special-status biological resources "have the potential to be significant in the absence of specific mitigation."[44] Although the applicant has proposed several measures to mitigate impacts to the desert tortoise, many of these mitigation measures lack the specificity required to evaluate their effectiveness.

The applicant proposes acreage-based compensatory mitigation using a formula provided in the West Mojave Plan.[45] The West Mojave Plan has established a mitigation ratio of 5:1 for impacts within a Habitat Conservation Area (such as the ACEC adjacent

[40] The protocol considers the zone of influence to be at least 2400 feet. See: US Fish and Wildlife Service. 1992. Field survey protocol for any federal action that may occur within the range of the desert tortoise. Available from: Fish and Wildlife Service, Ventura (CA).
[41] AFC, p. 5.6-22.
[42] *Id.*
[43] AFC, p. 5.6-25.
[44] *Id.*
[45] AFC, p. 5.6-26.

to the Project site).[46] The occupancy estimate values provided in the AFC suggest the Project Area supports even more tortoises than the adjacent ACEC.[47] Therefore, it would appear offsetting impacts to the species would require mitigation of at least 5:1.

Data Requests

27. In order to evaluate the applicant's proposal for an exclusion fence around the construction area in occupied desert tortoise habitat,[48] please explain how occupied desert tortoise habitat will be identified given portions of the Project area were not sampled, the detection rate is considerably less than 100%, and the dynamic nature of the organism (e.g., potential to colonize previously unoccupied areas).

28. In order to evaluate the applicant's proposal for roving biological monitors in active construction areas and for access road improvements in occupied desert tortoise habitat,[49] please clarify a) whether at least one biologist will be present to observe all construction activity, and b) how occupied desert tortoise habitat will be identified in areas subject to road improvements.

29. Please discuss how occupied desert tortoise habitat will be identified in areas requiring maintenance activities.

30. Please provide a proposed tortoise relocation plan that has a detailed discussion of 1) how disease (or other illness) will be identified and how transmission of disease will be minimized; 2) how tortoises will be handled and transported; 3) measures that will be taken if tortoises become overheated; 4) a proposed schedule for translocation efforts; 5) the specific habitat or other characteristics that will be assessed to determine the translocation site provides the best location for release; 6) proposed monitoring of the exclusion fence, including frequency and duration of monitoring; 7) actions that will be taken to monitor the fate of translocated tortoises, including preparation of monitoring reports; and 8) qualifications of the personnel that will conduct clearance surveys, health evaluations, habitat assessment (for relocation site), and post-translocation monitoring.

31. Please identify potential release sites for tortoises that are cleared from the Project area and discuss how these sites provide the same level of desert tortoise habitat suitability as the Project site, taking into consideration the AFC's map that depicts several additional projects proposed in the Project region.[50]

[46] Bureau of Land Management. 2005. Final environmental impact report and statement for the West Mojave plan: a habitat conservation plan and California desert conservation area plan amendment. Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.
[47] AFC, p. 5.6-9.
[48] AFC, p. 5.6-26.
[49] *Id.*
[50] AFC, Appendix Y: Figure 7.

32. Please discuss the health of tortoises observed in the Project area, taking into consideration that upper respiratory tract disease is thought to be present throughout the adjacent Ord-Rodman Desert Wildlife Management Area (DWMA),[51] and discuss how the adverse effects associated with moving healthy tortoises into an infected area will be mitigated.

33. Please clarify whether the applicant's proposed perimeter fence will preclude tortoises from re-entering the site, as stated in the AFC[52], or whether the existing culverts will allow for continued north-south movement through the site, as stated in the AFC.[53]

34. Considering the applicant proposes acreage-based compensatory mitigation using a formula provided in the West Mojave Plan,[54] which established a mitigation ratio of 5:1 for impacts within a Habitat Conservation Area (such as the ACEC adjacent to the Project site),[55] please provide the ratio the applicant proposes for compensatory mitigation so that the effectiveness of the applicant's proposed mitigation for desert tortoise impacts can be evaluated.

35. Please provide the following information regarding the applicant's proposal to monitor for the presence of ravens and other potential human-subsidized predators, and to implement a control plan if predator densities substantially increase in the vicinity of the facility:[56]

    a. Justify the implementation of a control plan only after predator densities have substantially increased.

    b. Discuss how implementation of a control plan after predator densities have substantially increased mitigates impacts to desert tortoise and other special-status species, given the low fecundity of the species and that substantial predation will likely already have occurred.

    c. Please provide the techniques that will be used to monitor ravens and other potential predators, including frequency of monitoring and means for determining densities have substantially increased (i.e., type of analysis).

    d. Please quantify "substantially" increase.

    e. Please quantify "vicinity" of the facility.

    f. Please specify the predators proposed for monitoring.

    g. Please discuss the techniques that may be implemented to control predators if control is deemed necessary.

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[51] U.S. Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon.
[52] *Id.*
[53] AFC, p. 5.6-24.
[54] AFC, p. 5.6-26.
[55] Bureau of Land Management. 2005. Final environmental impact report and statement for the West Mojave plan: a habitat conservation plan and California desert conservation area plan amendment. Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.
[56] AFC, p. 5.6-27.

h. Please discuss how the effectiveness of the predator monitoring and control program will be documented, including whether reports will be prepared for resource agency review. If reports will be prepared, specify the frequency and duration of report submittal.

36. Please clarify whether Project transmission poles and towers will include design features to reduce potential for raven nesting.

Background: IMPACTS TO THE BURROWING OWL

The AFC indicates focused surveys for burrowing owls were conducted in 2008.[57] According to the AFC, the AFC Assessment Area was surveyed on foot, and all areas were visible from the survey routes.[58] The AFC fails to provide any other information on how burrowing owl surveys were conducted (including whether surveys followed protocol guidelines). The list of survey dates and personnel provided in the AFC does not indicate any focused burrowing owl surveys were conducted.[59] Information on the specific survey techniques that were used to establish baseline abundance and distribution of owls in the Project area is needed to adequately evaluate proposed Project impacts.

The AFC indicates there were two separate observations of burrowing owls during the 2008 survey, and that further investigation would be required to determine whether these owls were migrants or residents since "no owl burrows were detected in the survey areas".[60] This statement appears misleading because burrowing owls commonly use rodent burrows[61], and the AFC indicates "rodent tracks and burrows were observed throughout the Project area".[62] The AFC does not indicate whether these (and other) burrows were examined for signs of owl use, or whether burrows were monitored according to the methods provided in the survey protocol.[63]

Data Requests

37. Please provide additional information on burrowing owls that were detected, including:

    a. Date(s) owls were detected and surveyor(s) making the detection.

    b. Information on how the two owls were detected and any subsequent efforts devoted to determining the status (e.g., residency and habitat use) of the owls.

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[57] AFC, p. 5.6-4.
[58] AFC, Appendix Y: p. 2-3.
[59] AFC, Appendix Y: Appendix A-Survey Dates and Field Personnel.
[60] AFC, p. 5.6-11.
[61] California Wildlife Habitat Relationships System. 2005. California Department of Fish and Game. California Interagency Wildlife Task Group. CWHR version 8.1 personal computer program. Sacramento (CA).
[62] AFC, p. 5.6-7.
[63] The California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available online at: http://www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf

c. Behavior of the owls.[64]

38. Please provide the following specific techniques that were used to document burrowing owl use of the Project area and surrounding buffer zone:

    a. Indicate how burrowing owl surveys met the CEC siting requirement, which states surveys must follow appropriate protocols during the appropriate season(s), and agencies with jurisdiction should be consulted for protocol guidance.[65]

    b. Discuss any focused survey efforts (i.e., non-incidental) that were devoted to locating owls and owl sign. Please include the dates these efforts were conducted and the personnel that were involved.

    c. Indicate whether burrowing owl surveys were conducted during the hours around sunrise and sunset, as required by the survey protocol.[66]

    d. Indicate whether burrows were mapped in accordance with the survey protocol.[67] If the answer is yes, please provide a map showing burrow concentrations.

    e. Indicate the techniques that were used to determine whether burrows were being used (or had been used) by an owl.

    f. Specify whether all burrows were examined for signs of owl use. If not all burrows were examined, please discuss the characteristics of the burrows that were examined.

    g. Indicate whether potential owl burrows were monitored on four separate days as required by the survey protocol.[68] If the answer is yes, please provide information on these monitoring efforts (e.g., dates, times, locations).

    h. Indicate how much of the Project area and surrounding buffer were surveyed for burrowing owls (i.e., did surveys provide 100% coverage or did they represent a sample).

39. If Project surveys did not adhere to protocol survey guidelines, please either provide information on the survey guidance issued by California Department of Fish and Game (CDFG), or provide a schedule for conducting protocol surveys such that there is sufficient time to evaluate Project impacts to owls and establish compensatory mitigation.

40. Please indicate whether the applicant's proposed mitigation will conform to the guidelines issued by the California Burrowing Owl Consortium and those presented in the West Mojave Plan. To substantiate the response, please:

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[64] *Id.*
[65] AFC, Master Section 5.6: Data Adequacy Worksheet.
[66] The California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available online at: http://www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf.
[67] *Id.*
[68] *Id.*

a. Confirm that compensation habitat will provide suitable burrowing owl habitat (as defined in the *Burrowing Owl Survey Protocol*), will meet CDFG approval, and will be managed to maintain suitable burrowing owl habitat.[69]

b. Confirm that the applicant will provide compensatory burrowing owl habitat based on recommended ratios (i.e., 6.5 to 19.5 acres of foraging habitat per pair or individual bird), and that the compensation habitat will be placed in a conservation easement.[70]

c. Provide a proposed burrowing owl mitigation monitoring plan that includes success criteria and triggers for additional mitigation if success criteria are not met.[71]

41. Please discuss the success of past burrowing owl mitigation programs implemented by URS and provide copies of monitoring reports that demonstrate the long-term success of passively relocating owls to artificial burrows in a desert ecosystem (similar to what is being proposed for SES Solar Two).

Background: RARE PLANT SURVEY METHODS AND VALIDITY OF BASELINE DATA

The AFC provides very little information on the methods the applicant used to conduct rare plant surveys.[72] CEC siting regulations require that the applicant conduct biological resources surveys using appropriate field survey protocols during the appropriate season(s).[73] In addition, lead agencies generally require protocol-level surveys to ensure CEQA and/or NEPA requirements are met. The West Mojave Plan requires botanical surveys that conform to CDFG protocol survey guidelines.[74]

At least eight plant species that were documented as occurring on the Project site are in the same genus as rare plants that have been identified as having the potential to occur.[75] In at least two cases (*Escobaria vivipara* and *Camissonia boothii* ssp. *condenseta*, and ssp. *desertorum*), distinction of the non-listed species from the listed one requires careful identification to the subspecies level through detailed observation of minute characteristics of the plants.[76] *Escobaria vivipara* var. *rosea* is a California

[69] *Id.*
[70] *Id.*
[71] *Id.*
[72] *See* AFC, p. 5.6-3.
[73] California Energy Commission. 2007. Appendix B *of* Rules of practice and procedure & power plant site certification regulations. Document No. CEC-140-2007-003. Also see the updated Appendix B from July 2008 at http://www.energy.ca.gov/2008publications/CEC-140-2008-003/CEC-140-2008-003.PDF
[74] Bureau of Land Management. Final environmental impact report and statement for the West Mojave Plan: a habitat conservation plan and California desert conservation area plan amendment. Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.
[75] *See* AFC Appendix B and Appendix D of Appendix Y.
[76] Hickman, J. C., editor. 1993. The Jepson Manual: Higher Plants of California. Berkeley, CA. University of California Press.

Native Plant Society (CNPS) List 2 species with the potential to occur on the Project site[77]. *E. vivipara* was documented as occurring on the Project site but was apparently not identified to the level necessary to determine whether it was the variety listed as a special-status species.[78]

Data Requests

42. Please indicate whether one or more reference sites were visited as recommended by survey protocols.[79] If a reference site was visited, please provide a description of the reference site(s) visited and phenological development of the target special-status plants, with an assessment of any conditions differing from the Project site that may have affected their identification.

43. Please discuss the actual phenological development of all the target species[80] at the time Project surveys were conducted.

44. Please identify the survey techniques that were implemented within each survey cell, including protocol-required assurance of thorough coverage of potential impact areas and, if survey transects were used, an indication of transect spacing.

45. Please justify the applicant's rare plant survey effort (i.e., 480 acres/day per team of two biologists)[81] and discuss why the time per unit area spent surveying was appropriate for determining potential Project impacts.

46. As required by established protocols, please provide precise information on the locations (e.g., survey cell numbers) focused special-status plant surveys were conducted, by date.

47. Please discuss whether the *E. vivipara* plant(s) documented as occurring on the Project site could have been the *rosea* variety, which is a CNPS List 2 species. If the *rosea* variety was eliminated from consideration, please provide the deterministic characteristics that were used to make the determination.

48. Please discuss what characteristics were used to distinguish *Calochortus plummerae* (a rare plant) and *C. kennedyi* (reported occurring onsite).

49. Please discuss what characteristics were used to distinguish *Camissonia boothii* ssp. *condenseta* and *C. boothii* ssp. *desertorum* (reported occurring onsite) from *C. boothii ssp. boothii* (a rare plant).

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[77] AFC, Appendix B of Appendix Y.
[78] AFC, Appendix Y: p. D-3.
[79] California Department of Fish and Game. 2000. Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities. (Revision of 1983 Guidelines.) Sacramento, CA.
[80] *See* AFC, Appendix B of Appendix Y.
[81] AFC, p. 5.6-3.

50. Given that only one surveyor has listed experience identifying *C. boothii* ssp. *boothii*, please describe training provided to allow accurate differentiation among similar species and subspecies of *Camissonia* plants, and other plants present in the same genus and family.

51. Booth's evening primrose is the common name attributed to the rare plant *Camissonia boothii ssp. boothii*.[82] Please explain the labeling presented in the AFC, which attributes the name Booth's evening primrose to *C. boothii* ssp. *condenseta*.[83]

52. For the dates 11 and 12 March 2008, the applicant lists Michelle Balk as one of the Project surveyors.[84] However, Ms. Balk was also reported to be surveying the Solar Two Project site (Imperial County) on those days.[85] Please clarify the site Ms. Balk was surveying on the dates in question and confirm the other individuals listed in the AFC were present on the Solar One site on the dates listed in AFC Appendix A of Appendix Y.

Background: RARE PLANT IMPACT ASSESSMENT

The AFC suggests that a team of two URS biologists were able to document all plants on 480 acres per 8-hour day.[86] The AFC's impact assessment incorrectly treats these surveys as a census (i.e., documentation of each individual plant) rather than a sample. As a result, the AFC likely underestimates Project impacts to rare plant species.

Several rare plant species were documented as occurring in the Project area.[87] Several additional species have the potential to occur based on their geographic range and the general and microhabitat conditions present in the Project site and surrounding buffer.[88] Although the AFC acknowledges the Project would have significant impacts on some of these species, it fails to discuss the local, regional, and rangewide significance of these impacts. Some of the special-status plant species that occur on the site are extremely rare in California due to their limited distribution and/or low abundance. This includes small-flowered androstephium (*Androstephium breviflorum*) and white-margined beardtongue (*Penstemon albomarginatus*), both of which were documented as occurring on the Project site.

Data Request

53. Please provide an estimate of the percentage of the Assessment Area that was thoroughly surveyed for rare plants in 2008 (i.e., the size of the sample).

[82] California Native Plant Society. 2009. Inventory of Rare and Endangered Plants (online edition, v7-09b). California Native Plant Society. Sacramento, CA. Accessed 8 Jun 2009 from http://www.cnps.org/inventory.
[83] AFC, Appendix D of Appendix Y.
[84] AFC, Appendix A of Appendix Y.
[85] AFC for Solar Two, Biological Resources Technical Report, p. 8.
[86] AFC, p. 5.6-3.
[87] AFC, Appendix B of Appendix Y.
[88] *Id.*

54. If less than 100% of the Assessment Area was inspected by surveyors for rare plants in 2008, please discuss why survey data were not treated as a sample from which to generate an estimate of number of plants that would be impacted (as was done for the desert tortoise).

55. If 100% of the Assessment Area was inspected by surveyors for rare plants in 2008, please discuss how two biologists were able to detect all plants (some of which are known to be very small) within 480 acres in an 8-hour day.

I. IMPACTS TO SMALL-FLOWERED ANDROSTEPHIUM

There are 82 records of small-flowered androstephium listed in the California Natural Diversity Database (CNDDB).[89] Approximately 75% of the occurrences these records represent are within the Project site or cumulative impact area.[90] Many of the remaining occurrences are threatened by off-road vehicle use and proposed expansion of Fort Irwin.[91]

Data Requests

56. Please clarify whether the observations of small-flowered androstephium reported in the AFC represent individual plants or populations. If observations represent more than one plant, please provide information on the abundance and distribution of the species at each location where it was detected.

57. Please indicate (or estimate if necessary) how many occurrences of small-flowered androstephium will be directly or indirectly impacted by the Project.

58. Please discuss the local, regional, and rangewide significance of Project impacts on small-flowered androstephium.

II. IMPACTS TO WHITE-MARGINED BEARDTONGUE

There are 19 records of white-margined beardtongue in the CNDDB.[92] Eighteen of the occurrences these records represent are within the Project site or cumulative impact area.[93] The remaining occurrence is for a location where the species has not been seen since 1941.

The West Mojave Plan reports the distribution of white-margined beardtongue in the western Mojave as restricted, but occurring in a large four-mile long wash near

[89] Department of Fish and Game, Biogeographic Data Branch. 2009. California Natural Diversity Database. Version 3.1.0. Updated 02 May 2009.
[90] *Id.*
[91] *Id.*
[92] *Id.*
[93] *Id.*

Pisgah Crater and Lavic Lake, extending southwest from Sleeping Beauty Peak, crossing Interstate 40, and terminating in a flat spreading basin south of the freeway.[94] Several hundred plants have been documented as occurring in this location[95], which is within the Project's cumulative impact area.

Data Requests

59. Please clarify whether the observations of white-margined beardtongue reported in the AFC represent individual plants or populations. If observations represent more than one plant, please provide information on the abundance and distribution of the species at each location where it was detected.

60. Please indicate (or estimate if necessary) how many occurrences of white-margined beardtongue will be directly or indirectly impacted by the Project.

61. Please discuss the local, regional, and rangewide significance of Project impacts on white-margined beardtongue.

III. IMPACTS TO EMORY'S CRUCIFIXION-THORN AND UTAH VINE MILKWEED

The AFC concludes the Project area contains one Emory's crucifixion-thorn (*Castela emoryi*) and one Utah vine milkweed (*Cynanchum utahense*)[96], and although Project impacts on these species would be adverse, the AFC characterizes them as less than significant.[97]

Between 1919 and 1997 several botanists documented the occurrence of a relatively large population of Emory's crucifixion-thorn along at least a mile of a desert wash located approximately eight miles west of Ludlow and east of Hector Mine Road.[98] This location is within the middle of the Project site. According to the West Mojave Plan, the population reported to be in the Project site is the only significant population of crucifixion-thorn within the West Mojave Plan Area.[99] The West Mojave Plan recommends that this population be located and monitored, and that all crucifixion-thorn plants be conserved.[100]

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[94] MacKay PJ. 2005. White-margined beardtongue [species account]. *In* Bureau of Land Management. Final environmental impact report and statement for the West Mojave Plan: a habitat conservation plan and California desert conservation area plan amendment. Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.
[95] *Id.*
[96] AFC, p. 5.6-21, 22.
[97] *Id.*
[98] Sanders AC. 2005. Crucifixion thorn [species account]. *In* Bureau of Land Management. Final environmental impact report and statement for the West Mojave Plan: a habitat conservation plan and California desert conservation area plan amendment. Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.
[99] *Id.*
[100] *Id.*

Data Requests

62. Please clarify whether the crucifixion-thorn and Utah vine milkweed plants detected will be directly or indirectly impacted by the Project.

63. Please provide a justification for the AFC's conclusion that impacts to Emory's crucifixion-thorn and Utah vine milkweed would be less than significant.

64. Please provide information on the size (e.g., height and diameter) of the crucifixion-thorn plant that was detected during Project surveys.

65. Please discuss whether Project surveyors were aware of the relatively large population of crucifixion-thorn that has historically been documented as occurring within the Project area. If surveyors were aware of this information, please discuss any extra effort that was devoted to locating the population.

Background: PROPOSED MITIGATION FOR IMPACTS TO RARE PLANTS

The applicant's proposed mitigation measures for Project impacts to rare plant species known to occur on the site are 1) collecting seeds and cuttings during the appropriate season prior to site disturbance, and 2) compensatory desert tortoise habitat.[101] Under CEQA, the applicant first must make an attempt to avoid impacts to listed resources. In general, mitigation measures besides avoidance do not fully mitigate for significant impacts to rare plants and their habitats for three reasons[102]:

1. They allow net losses of rare plant populations and habitat.
2. Most rare plants are restricted to their known locations because they have specialized, poorly understood, habitat requirements. Creating the exact environmental conditions that these plants require may not be possible.
3. The methodology for transplanting most rare plants is untested and therefore unreliable. As a result, most past transplanting projects have ultimately failed.

California Native Plant Society guidance explicitly states losses of plant populations considered "significant" under CEQA cannot be mitigated to less-than-significant levels using *ex situ* conservation techniques.[103] Consequently, the AFC must identify avoidance and minimization measures as the first approach to mitigation.

After avoidance, if unavoidable impacts will still occur, an applicant must provide additional mitigation measures that are based on scientific principles or facts, and that

[101] AFC, p. 5.6-29.
[102] California Native Plant Society. 1998. Policy on Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants. Available at: http://www.cnps.org/cnps/archive/mitigation.php.
[103] California Native Plant Society. 1992. Policy on appropriate application of *ex situ* conservation techniques. Available at: http://www.cnps.org/cnps/archive/ex_situ.pdf

have been demonstrated successful for the species that will be impacted. Many past attempts to translocate rare plant species have failed.[104] For example, attempts to propagate white-margined beardtongue (*Penstemon albomarginatus*) from cuttings have been unsuccessful, as have attempts at transplantation.[105] White-margined beardtongue is one of the species the applicant proposes to relocate through implementation of these techniques.

Data Requests

66. Please discuss the applicant's attempts to avoid and minimize Project impacts to the rare plants known to occur in the Project area.

67. Please discuss the basis for the applicant's conclusion that compensatory mitigation for tortoise habitat will also benefit rare plants, including how the proposed mitigation will provide for the specialized habitat requirements of the rare plants on the Project site.[106]

68. Please provide a detailed rare plant mitigation plan tailored to the four species that would be impacted by the Project.[107] [108] Please include:

    a. The proposed timeline for collecting seeds and cuttings, propagation, and establishment of new plants at the relocation site.

    b. Methods that will be used to propagate each species.

    c. The proposed relocation site and specific microhabitat conditions that will be assessed to determine whether the site is suitable for each target species.

    d. Methods that will be implemented to prevent genetic contamination of plants at the relocation site.

    e. Success criteria, the timeline for their achievement, and triggers for additional mitigation.

    f. Mitigation monitoring plan, including the data that will be collected and the frequency of reporting.

    g. Management measures that will be implemented to protect plantings from anthropogenic disturbance.

69. Please provide any information that the applicant is aware of to suggest collection of seeds and cuttings for propagation and relocation has been successful for each of the four target species.

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[104] California Native Plant Society. 1998. Statement opposing transplantation as mitigation for impacts to rare plants. Available at: http://www.cnps.org/cnps/archive/transplanting2.php.
[105] Scogin, R. 1989. Studies of *Penstemon albomarginatus* in California. Report for Rancho Santa Ana Botanic Garden, Claremont, California.
[106] AFC, p. 5.6-29.
[107] California Public Resource Code § 21081.6 (c).
[108] California Native Plant Society. 1998. Policy on Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants. Available at: http://www.cnps.org/cnps/archive/mitigation.php.

70. Please discuss how mitigation listed under BIO-8 will be applicable for white-margined beardtongue species, when previous attempts to propagate white-margined beardtongue by cuttings or transplantation have proven unsuccessful. [109]

Background: SITE ASSESSMENT

The AFC states the biological resources assessment conducted for the Project included a "database review of the California Natural Diversity Database and U.S. Fish and Wildlife Service".[110] The AFC does not indicate whether the applicant contacted the BLM, California Native Plant Society, local experts, or other organizations, agencies, or individuals with potential knowledge of biological resources in the Assessment Area.

The AFC states: "In compliance with CEC regulations, habitat within a one-mile buffer surrounding the AFC Assessment Area was also qualitatively assessed for biological resources."[111] However, the AFC does not provide the results of this assessment for areas north and south of the site.

Data Requests

71. Please specify the USFWS database that was used as part of the Project biological resources assessment.

72. Please indicate any individuals (e.g., local experts), agencies (e.g., BLM) or organizations (e.g., California Native Plant Society) that were contacted to obtain information potentially useful to the site assessment.

73. Please specify the CEC regulation referenced in Appendix Y, p. 2-3 of the AFC to justify assessing habitat within a one-mile buffer, discuss how the habitat was "qualitatively" assessed, and provide information on habitat(s) within the one-mile buffer to the north and south of the site.

Background: IMPACTS TO THE MOJAVE FRINGE-TOED LIZARD

According to the AFC, the applicant mapped suitable habitat for the Mojave fringe-toed lizard (MFTL) within the SES Assessment Area and BLM ACEC.[112] Areas of suitable habitat were then surveyed to determine presence of the species. The applicant concluded the AFC Assessment Area supports one patch of MFTL habitat that is occupied by the species, and that additional patches of occupied habitat are located within the adjacent ACEC.[113]

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[109] Scogin, R. 1989. Studies of *Penstemon albomarginatus* in California. Report for Rancho Santa Ana Botanic Garden, Claremont, California.
[110] AFC, p. 5.6-2.
[111] AFC, Appendix Y: p. 2-3.
[112] AFC, p. 5.6-4.
[113] AFC, Appendix Y: p. 3-5.

The AFC states the occupied patch of MFTL habitat within the site will be avoided during construction and operation of the Project[114], but later states MFTL habitat will be avoided to the extent "practicable".[115] Disturbance of vegetation surrounding MFTL habitat and fencing of the larger project site would isolate the onsite patch of MFTL habitat from other habitat patches located west and east of the Project area.[116]

Sand dune ecosystems, including their source sand and sand corridors, are necessary for the long-term survivorship of aeolian sand specialists, such as fringe-toed lizards.[117] Specific habitat requirements for the Coachella Valley fringe-toed lizard include access to shaded sand for thermoregulatory burrowing[118]. This requirement is thought to apply to the MFTL as well.[119] In addition to sand dune habitat and associated shade plants, management efforts designed to maintain MFTLs should incorporate areas for source sand and sand corridors.[120] The AFC must specify whether the applicant intends to maintain the occupied patch of MFTL habitat on the Project site, and if so, how the physical processes necessary for the long-term maintenance of the habitat will be sustained.

Data Requests

74. Please discuss the methods that were implemented to map MFTL habitat, including the minimum mapping unit that was used and justification for selecting the minimum mapping unit.

75. Please indicate the total number of hours that were allocated to surveying the MFTL habitat within the Project site (i.e., not within the ACEC).

76. Please provide information on the sizes (i.e., acres) of the six MFTL habitat patches referenced in the AFC.[121]

77. Please clarify whether the applicant intends to avoid direct impacts to MFTL habitat, or only intends to avoid if practicable.

78. The AFC indicates there are "sand dune areas" on the Project site.[122] Please clarify whether the Project site contains a single sand dune area or potentially multiple sand dune areas.

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[114] AFC, Appendix Y: p. 4-3.
[115] AFC, Appendix Y: p. 4-1.
[116] AFC, Appendix Y: p. 4-3.
[117] Barrows, C. 1996. An ecological model for the protection of a dune ecosystem. Conserv. Biol. 10(3):888-891.
[118] Muth, A. 1991. Population biology of the Coachella Valley fringe-toed lizard. Final Report, Contract 86/87 C2056 and 87/88 C2056, Am.1. California Department of Fish and Game, Inland Fisheries Division, Sacramento, California.
[119] Hollingsworth BD, and KR Beaman. 2005. Mojave fringe-toed lizard. Species account *in* Final environmental impact report and statement for the West Mojave Plan: a habitat conservation plan and California desert conservation area plan amendment. Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.
[120] *Id.*
[121] AFC, p. 5.6-10.
[122] AFC, p. 5.6-17.

79. If multiple sand dune areas exist, please clarify how all but one was determined to be unsuitable habitat for the MFTL.

80. Please discuss the presence of shade plants associated with MFTL habitat and indicate whether these plants will be impacted by the Project.

81. Please indicate whether sand corridors currently provide connectivity among the various MFTL habitat patches that were mentioned in the AFC.

82. If sand corridors exist, please discuss potential Project impacts to these corridors.

83. Please discuss the potential Project impacts that would arise from isolating the on-site MFTL population from the other habitat patches located east and west of the Project area.

84. Please discuss potential Project impacts on the physical processes necessary for the long-term maintenance of the FTHL habitat both within the Project assessment area and adjacent ACEC.

85. Please identify the source of sand that has generated MFTL habitat within the Project site and Pisgah ACEC.

86. Please provide details on the temporary enclosure fence being proposed for the MFTL habitat patch within the Project site, including how long the fence will be in place, how the fence will affect MFTL access to resources, and whether the fence will incorporate a buffer zone to ensure any errant lizards are not excluded from their habitat.

87. Please provide an example of desert tortoise habitat that would also benefit the MFTL, as indicated by mitigation proposed in the AFC,[123] taking into consideration that desert tortoises require suitable substrates for burrowing, nesting, and overwintering,[124] that soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse,[125] and that loose wind-blown sand habitat, upon which the MFTL is dependent, may not provide suitable burrow habitat for the desert tortoise.

Background: IMPACTS TO NELSON'S BIGHORN SHEEP

Approximately 458.3 acres of suitable habitat reported as being used by bighorn sheep occurs at the northeast boundary of the AFC assessment area, and an additional 404.5 acres of suitable habitat occurs within the 1000-foot buffer zone.[126] The AFC indicates no Nelson's bighorn sheep were observed during Project surveys. The AFC does not explain how habitat suitability was determined, or why flats (which are also used by bighorn) within the Project area were not considered suitable habitat.

[123] AFC, p. 5.6-27.
[124] U.S. Fish and Wildlife Service. 2008. Draft revised recovery plan for the Mojave population of the desert tortoise (*Gopherus agassizii*). U.S. Fish and Wildlife Service, California and Nevada Region, Sacramento (CA). 209 pp.
[125] *Id.*
[126] AFC, p. 5.6-13.

The AFC indicates the Project will affect suitable bighorn sheep habitat[127], but it does not discuss the significance of the impact. Additionally, although the AFC acknowledges the Project's contribution to a potentially significant cumulative impact to bighorn sheep habitat and movement[128], it does not include a discussion of mitigation designed to offset the impacts. Maintaining connectivity among habitat such that bighorn sheep are able to move freely and maintain metapopulation dynamics is critical to the long-term viability of the species.[129] The AFC does not address this issue or provide information on how metapopulation dynamics will be maintained.

The AFC indicates watering stations are scattered throughout the Project site.[130] The AFC did not discuss the status of these watering stations and whether they provide a potential water source for bighorn sheep (and other wildlife). If bighorn sheep have become accustomed to obtaining water from onsite watering stations, removal of the watering stations may have a significant indirect impact on the fitness of the local population.

Bighorn sheep were detected on the SES Solar Two Project site.[131] The sheep that were detected were considerably far away from any rocky slopes or other escape cover, and the recovery plan for sheep in the Peninsular Ranges indicates flat lands (e.g., alluvial fans and washes) are crucial to the viability of bighorn sheep populations.[132]

Data Requests

88. Please describe the specific techniques used to survey the assessment area for bighorn sheep, including whether survey personnel were trained in the identification of sheep scat, tracks, bedding sites, and signs of browse.

89. If personnel were trained in identification of bighorn sheep identification, please discuss any focused efforts devoted to identifying sheep sign.

90. Please indicate how habitat suitability for bighorn sheep was determined and why the majority of the assessment area is not considered suitable.

91. Please discuss the potential direct, indirect, and cumulative Project impacts on bighorn sheep habitat and movement in the Project region. The discussion should include (but not be limited to):

    a. Information on how bighorn sheep metapopulation dynamics will be maintained after the Project site has been fenced (indirect impact) and if all projects proposed for the region are approved (cumulative

[127] AFC, p. 5.6-23.
[128] AFC, p. 5.6-25.
[129] U.S. Fish and Wildlife Service. 2000. Recovery plan for bighorn sheep in the Peninsular Ranges, California. U.S. Fish and Wildlife Service, Portland, OR. xv+251 pp.
[130] AFC, p. 5.6-3.
[131] SES Solar Two: Applicant's response to CURE data request 44.
[132] *Id.*

impact).

b. Information on any mitigation being proposed to offset potentially significant impacts other than the mitigation provided in the AFC (i.e., besides provision of an onsite monitor during construction and allowing sheep conservationists access to the Cady Mountains via Hector Road).

92. Please provide information on the onsite watering stations, including:

a. Whether any of the watering stations provide or retain water;

b. A map of the locations of any watering stations that provide or retain water;

c. A discussion of the indirect impacts removal of the stations will have on bighorn sheep and other wildlife;

d. A description of any extra survey effort devoted to monitoring the watering stations to determine their value to bighorn sheep or other wildlife.

93. Please indicate the data that were used to map bighorn sheep habitat on Figure 5.6-6 of the AFC.

94. Please discuss the sources of information that were sought to obtain information on bighorn sheep use of the Assessment Area.

95. Please provide information on the bighorn sheep management efforts in the Cady Mountains, referenced in the AFC[133], and discuss the Project's impacts on such efforts.

96. Please discuss the population status of the local bighorn sheep herd(s) and provide information on the applicant's personal communication with G. Thomas that was referred to in the AFC.[134]

Background: IMPACTS TO POTENTIAL JURISDICTIONAL WATERS

I. SITE ASSESSMENT

The AFC indicates two individuals spent two days surveying the site for potential jurisdictional waters (total hours spent surveying was not reported).[135] To conduct the surveys, the applicant stated that areas subject to jurisdiction pursuant to Section 1600 of the California Fish and Game Code were delineated, and that major drainages on-site were evaluated to determine whether or not they would be considered under state or federal jurisdiction.[136] The AFC does not indicate which portions of the Project area were examined for potential jurisdictional waters, or whether areas potentially supporting

[133] AFC, p. 5.6-13.
[134] *Id.*
[135] AFC, Appendix A of Appendix Y.
[136] AFC, p. 5.6-14.

playas were evaluated.

Data Requests

97. Please provide the locations of the areas the AFC indicates were delineated to determine jurisdiction under the California Fish and Game Code.

98. Please provide a map that shows the areas that were searched and the features (e.g., drainages) that were assessed to determine the occurrence of potentially jurisdictional waters. Since Matt Moore is listed as one of the two individuals responsible for assessing the occurrence of jurisdictional waters at the site[137] and Mr. Moore's resume does not indicate prior experience conducting wetland delineations, please provide information regarding Mr. Moore's experience conducting wetland delineations.

II. CHANNELS, STREAMS, AND WASHES

The AFC concluded the Project site does not contain channels[138], streams or washes.[139] However, the AFC makes several references to washes being present within the Project site. For example, the AFC states "the site is traversed by a number of ephemeral washes"[140], site layout will be based on avoiding major washes[141], and that paved roadways will have dips to convey runoff into existing washes.[142] The AFC's conclusion that washes are not present on the site is also contradicted by several members of the applicant's desert tortoise survey team, who reported detecting tortoises in washes.[143]

The majority of the Project Site is within an alluvial fan emanating from the Cady Mountains.[144] Guidance issued by the Army Corps of Engineers states "alluvial fans in arid areas will include some channels subject to Section 404 of the Clean Water Act."[145]

Data Requests

99. Please resolve inconsistencies in the AFC by clarifying:

    a. Where the Project will be designed to avoid major washes and roadways and to have dips to convey runoff into washes, as referenced

[137] AFC, Appendix A of Appendix Y.
[138] AFC, p. 5.6-17.
[139] AFC, p. 5.6-16.
[140] AFC, p. 5.5-3.
[141] AFC, p. 5.6-19.
[142] AFC, p. 5.6-20.
[143] *See* AFC, Appendix H of Appendix Y.
[144] AFC, p. 5.4-2.
[145] US Army Corps of Engineers, South Pacific Division. 2001. Final summary report: Guidelines for jurisdictional determinations for waters of the United States in the arid southwest. US Army Corps of Engineers, San Francisco.

in the AFC;.

b. The functions and locations of the culverts that are present in the Project area, as referenced in the AFC;

c. Where localized channel grading will occur "to improve channel function," as referenced in the AFC;[146] and

d. Why the Project site is not considered to contain washes even though numerous washes are depicted and labeled on the associated USGS topographic maps.

100. Since the SES Solar Two Project, the applicant indicated washes within the SES Solar Two project site were mapped as floodplains,[147] and floodplains are mapped as occurring on the Solar One Project site,[148] please clarify whether the floodplains on the Solar One site are also intended to represent washes, as was done for the SES Solar Two Project.

101. Please clarify how erosion was measured and over what time period to support the AFC's determination that "The path of shallow concentrated flow during more extreme rain events on the site does not exhibit erosion in most years".[149] Please provide the source of data that was used and the method that was applied to model results in concluding: "Flow of water on-site does not occur in most years" [150] and "[n]o surface flows are expected through the 5-year storm event".[151] Please clarify how "shallow concentrated flow"[152] constitutes an "undefined drainage feature". [153]

102. Please clarify how "the site layout will maintain pre-development drainage patterns"[154] if "blading will occur to remove localized rises and depressions".[155]

103. Please clarify why the applicant's determination appears to conflict with guidance issued by the Army Corps of Engineers, which states alluvial fans in arid areas will include some channels subject to Section 404 of the Clean Water Act.

104. Please provide photographs that illustrate representative drainage patterns occurring on the Project site, including photographs of areas upslope of culverts, and indicate (on a map or with geographic coordinates) where all photographs were taken.

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[146] AFC, p. 5.6-20.
[147] *See* p. 3 of Applicant's response to BLM minimum requirement comments for the Solar Two Project. Available in: Supplemental Information in Response to CEC Data Adequacy Requests and BLM Minimum Requirement Comments (dated Sep 2008).
[148] AFC, Figure 5.5-4.
[149] AFC, p. 5.6-16.
[150] AFC, p. 5.6-17.
[151] *Id.*
[152] *Id.*
[153] *Id.*
[154] AFC, Appendix Y: p. 4-1.
[155] *Id.*

III. PLAYAS

The AFC concluded no lakes are present on-site.[156] A playa is the flat-floored bottom of an undrained desert basin that at times becomes a shallow lake.[157] Playas are regulated by the Army Corps of Engineers under the Clean Water Act.[158] Delineating playas can be problematic, and there are differences in both the rules and characteristics available for differentiating wetlands and playas.[159] It's unclear whether the Project survey team acknowledged these differences when assessing potentially jurisdictional water within the site.

The Project area possesses topography conducive to playa formation (i.e., ephemeral drainages leading to a flat-floored, undrained basin). The Project area also appears to receive adequate precipitation for playa formation. According to the AFC, the average annual precipitation is approximately five inches in the area of the Project Site.[160] For playas in the western Mojave Desert, Lichvar et al. (2002) determined playas receiving an annual precipitation threshold of 3.26 inches would pond with a frequency of 0.51 (i.e., every other year).[161] Playas receiving 4.94 inches of precipitation were inundated for an average of 14 weeks.[162]

Data Request

105. Please clarify whether any of the Universal Transverse Mercator (UTM) coordinates for the locations listed below are within the AFC Assessment Area or SES Assessment Area.[163]

    a. 545565, 3852567
    b. 545617, 3852516
    c. 545724, 3852569
    d. 545865, 3851012
    e. 546247, 3850792
    f. 545325, 3852615
    g. 550191, 3850638

[156] AFC, p. 5.6-18.
[157] Lichvar G, G Gustina, R Bolus. 2002. Duration and frequency of ponded water on arid southwestern playas. Army Corps of Engineers, Wetlands Regulatory Assistance Program. U.S. Army Research and Development Center, Vicksburg (MS): Publication ERDC TN-WRAP-02-02.
[158] *Id.*
[159] *Id.*
[160] AFC, p. 5.5-4.
[161] Lichvar G, G Gustina, R Bolus. 2002. Duration and frequency of ponded water on arid southwestern playas. Army Corps of Engineers, Wetlands Regulatory Assistance Program. U.S. Army Research and Development Center, Vicksburg (MS): Publication ERDC TN-WRAP-02-02.
[162] *Id.*
[163] All coordinates are for UTM Zone 11 S and are through use of the WGS84 datum

106. If any of the locations referenced in data request 105 a through g are within an area that will be directly or indirectly affected by the Project, please provide any information available on the features located at the respective location, including information on the vegetation surrounding the feature.

107. Please provide copies of any field notes associated with evaluation of jurisdictional water at the locations referenced in data request 105 a through g.

IV. WETLAND INDICATORS

The AFC indicates the Project Area does not contain wetland vegetation.[164] This conclusion appears to conflict with wetland indicator status information provided by the USFWS. The subsequent table identifies potential wetland indicator plants that were documented as occurring on the Project site.[165]

Scientific name	Wetland indicator status[166] [167]
Allenrolfea occidentalis	FACW+
Atriplex fruticulosa	FACW
Atriplex spinifera	FAC
Chilopsis linearis	FACW*
Machaeranthera arida	FAC-
Tamarix aphylla	FACW-
T. ramosissima	FAC

Legend
FACW = Usually occurs in wetlands (estimated probability 67%-99%)
FAC = Equally likely to occur in wetlands or non-wetlands (estimated probability 34%-66%)
"+" = Frequently toward the higher end of the category (i.e., 99%)
"-" = Frequently toward the lower end of the category (i.e., 34%)
"*" = Assignment based on limited information

Data Requests

108. Please provide information on the distribution and abundance of the potential wetland indicator plants documented as occurring on the Project site and discuss the source of information that was used to conclude these plants do not represent riparian or hydrophytic vegetation.[168]

[164] AFC, p. 5.6-14.
[165] AFC, Appendix Y: Appendix D-Plant species list.
[166] Natural Resource Conservation Service. Plants Database [online]. Accessed 25 May 2009. Available at: http://plants.usda.gov/wetland.html.
[167] Plant status for Region 0 (California).
[168] AFC, p. 5.6-16.

109. Please indicate whether any other indicators of an ordinary high water mark were evaluated, besides presence of a natural scour line impressed on the bank, recent bank erosion, destruction of native terrestrial vegetation, and the presence of litter and debris.[169] [170]

Background: IMPACTS TO WILDLIFE CORRIDORS

Currently the site allows largely unrestricted wildlife movement throughout the area.[171] If approved as currently proposed, the Project would constitute a significant barrier to terrestrial wildlife attempting to move to and from the various wilderness areas and ACECs surrounding the Project site.[172] These wilderness areas and ACECs currently act as preserves for numerous species, and the ability to move among them may be critical to population viability, especially for species known to depend on metapopulation dynamics (e.g., bighorn sheep).

The AFC concluded the Project will pose less of a constraint to mammal species because they can use the foothills and existing roads or trails as travel corridors.[173] The AFC also concluded existing culverts will allow for continued north-south movement through the site.[174] However, roads are known to have an adverse effect on many wildlife species, both directly (e.g., road kills) and indirectly (habitat degradation).[175] Thus, they may function as a habitat "sink" to species forced to use them in an attempt to move through the site. Foothills also may not be appropriate corridors for species that require specific habitat conditions. For example, suitable habitat for badgers is characterized by dry, friable soil (in which they dig burrows used for cover). The rocky conditions that occur in the foothills are likely unsuitable for the badger and other species that rely on the substrates and vegetative cover present in the Project area.

Data Requests

110. Please clarify the type(s) of analysis that was used to estimate Project impacts to wildlife corridors.

111. Please identify the terrestrial wildlife species occurring in the Project region that will be able to use the foothills as a travel corridor.

112. Please discuss the significance of direct Project impacts on wildlife movement.

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[169] AFC, p. 5.6-17.
[170] US Army Corps of Engineers, South Pacific Division. 2001. Final summary report: Guidelines for jurisdictional determinations for waters of the United States in the arid southwest. US Army Corps of Engineers, San Francisco.
[171] AFC, p. 5.6-13.
[172] *See* AFC, Figure 5.6-7.
[173] AFC, p. 5.6-24.
[174] *Id.*
[175] Boarman WI. 2002. Threats to Desert Tortoise Populations: A Critical Review of the Literature. U.S. Geological Survey, Western Ecological Research Center. Sacramento (CA): 86 p.

113. Please describe the expected level of disturbance (e.g., noise and siting of Suncatchers) around each culvert and discuss how any identified disturbance might influence culvert use.

Background: MITIGATION FOR WILDLIFE MOVEMENT

To mitigate impacts to wildlife movement the applicant has proposed: 1) locating the perimeter fence so that it does not block wildlife access to drainage culverts, and 2) maintaining east-west movement along the northern boundary of the project site.[176] Without fencing to funnel animals, the effectiveness of culverts in allowing north-south movement will rely on an animal's ability to find a culvert to both enter and exit the site. Animals attempting to move east-west will encounter the perimeter fence, then be forced to move north or south in an attempt to get around it. It appears the perimeter fence would then direct them to either the perimeter road along the site's northern boundary, the railroad tracks, or Interstate 40.[177] All of these features represent potentially significant sources of mortality, or may deter animals altogether due to noise or lack of suitable habitat (thus effectively blocking any east-west movement).[178] Further, it appears that any animals attempting to move in an east-west direction north of the site will have to pass through the Cady Mountains.[179] This does not represent a viable corridor for many species, and it will be energetically demanding for other species that attempt to use it.

Data Requests

114. Please provide a map or other information that clarifies the applicant's proposed mitigation, including the locations of the following:

    a. Existing roads and trails that the applicant has concluded will constitute north-south travel corridors.

    b. Existing culverts that won't be fenced.

    c. Potential wildlife movement routes that would be available if the Project and other proposed projects in the region are approved.

    d. The location of the applicant's proposed east-west corridor along the site's northern boundary.

    e. The location of Project fencing in relation to the access road that will be located along the site's northern boundary.

    f. Any east-west corridors through the site besides roads and the railroad tracks.

115. Please provide information on the existing corridors that will not be fenced, and that are expected to serve as passageways for wildlife. Specifically,

[176] AFC, p. 5.6-29.
[177] AFC, Figure 3-3.
[178] Boarman WI. 2002. Threats to Desert Tortoise Populations: A Critical Review of the Literature. U.S. Geological Survey, Western Ecological Research Center. Sacramento (CA): 86 p.
[179] AFC, Figure 3-10b.

indicate each culvert's height, width, and length. If existing culverts are various sizes, please identify the size of each one on the map.

116. Please provide documentation describing how culverts provide larger connectivity around large construction sites.

117. Please describe the vegetation surrounding each culvert and discuss whether the vegetation will be disturbed (e.g., trimmed or removed) by Project activities.

118. Please clarify whether fencing will be installed to encourage culvert use.

119. Please indicate the species expected to use culverts, and provide any species-specific information documenting culvert use.

120. For wildlife attempting to move east-west, please discuss how the applicant will prevent animals from being funneled onto access roads, the railroad tracks, or I-40. In addition, please clarify whether these would be the only east-west travel corridors for species adverse to rocky terrain.

121. Please indicate whether the Project will meet with the objectives established by the Desert Tortoise Supergroup, specifically the maintenance of movement corridors between DWMAs, with corridors being at least two miles wide.[180]

Background: CUMULATIVE IMPACTS

Numerous projects are proposed for the Project region.[181] Approval of some or all of these projects would have a significant cumulative impact on biological resources.[182] Although the AFC acknowledges significant cumulative impacts, the applicant does not include measures to mitigate them.

Several Desert Wildlife Management Areas (DWMA) and Areas of Critical Environmental Concern (ACEC) are located in the Project vicinity.[183] The AFC states that because the Project is outside of these areas, it "would not contribute significantly to a cumulatively significant impact at a regional scale."[184] Desert tortoise populations are exposed to multiple threats. The cumulative, interactive, and synergistic impacts of these threats are often manifested through indirect impacts that reduce survivorship and fecundity.[185] As a result, the Desert Tortoise Recovery Plan Assessment recommended significant modification to the Recovery Plan's perspective on threats by strongly emphasizing the importance of cumulative, interactive, and synergistic threats to desert

[180] Desert Tortoise Supergroup. 1999. Chapter Two *in* West Mojave Plan: Draft Evaluation Report (Working Draft). Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.
[181] AFC, Table 5.18-3.
[182] AFC, p. 5.6-25.
[183] AFC, Appendix Y: Figure 7.
[184] AFC, Appendix Y: p. 4-6.
[185] *Id.*

tortoise populations throughout the Mojave desert.[186]

Data Requests

122. Please provide a discussion of the Project's contribution to cumulative impacts on "allowable ground disturbance" established by the West Mojave Plan.

123. Please discuss the regional significance of cumulative impacts on desert tortoise and other sensitive biological resources, and how mitigation will offset significant impacts.

124. The AFC states no special-status species will be affected by the access road; therefore the temporary impacts of the access road would not contribute to cumulative effects of the Project.[187] Please justify this conclusion given desert tortoises were documented as occurring on roads within the Project area.[188]

Background: IMPACTS TO THE AMERICAN BADGER

The AFC states impacts to the American badger are anticipated to be significant due to the permanent loss of 8,230 acres of potential habitat.[189] An American badger was documented as occurring on the Project site.[190] Therefore, the site is occupied habitat (as opposed to potential habitat). Mitigation proposed for impacts to the American badger includes "measures…to minimize impacts on badgers that are encountered" and use of a biologist to monitor active badger burrows.[191] However, the AFC does not provide any information on how active badger burrows will be located, or how the applicant will accommodate the potential for badgers to dig new dens each night.[192]

Data Requests:

125. Please clarify the measures that will be taken to minimize impacts on badgers.

126. Please specify the techniques (including number of biologists) that will be implemented to locate active badger dens prior to Project construction.

127. Please specify the timing of pre-construction badger surveys in relation to site grading or other activities that would potentially entomb a badger in its den.

128. If pre-construction surveys will not be conducted immediately before grading

[186] *Id.*
[187] AFC, p. 5.6-26.
[188] AFC, Appendix H of Appendix Y.
[189] AFC, p. 5.6-23.
[190] *Id.*
[191] AFC, p. 5.6-28.
[192] Messick, JP, and MG Hornocker. 1981. Ecology of the badger in southwestern Idaho. Wildl. Monogr. No.76. 53pp.

or other activities that would potentially entomb a badger in its den, discuss how the potential for badgers to dig new dens each night will be accounted for.

Background: IMPACTS TO THE FLAT-TAILED HORNED LIZARD

The AFC indicates potential direct impacts to the flat-tailed horned lizard and its habitat as a result of the Project.[193] The flat-tailed horned lizard has been proposed for listing as an endangered species under the Federal Endangered Species Act. Flat-tailed horned lizard occurrence on the Project site would represent an expansion in the species' known range, and the species would require special consideration in the AFC.

Data Request

129. Please clarify occurrence of the flat-tailed horned lizard on the Project site.

Background: IMPACTS TO OTHER SENSITIVE BIRD SPECIES

The AFC indicates disturbance to the California horned lark, Bendire's thrasher, golden eagle, and Swainson's hawk are possible as a result of the proposed Project.[194] The AFC concluded impacts on these special-status bird species would be adverse, but less than significant due to the extensive amount of suitable habitat in the region and Project vicinity.[195]

Data Requests

130. Please discuss the attempts that were made to document nesting of special-status bird species in the Project area.
131. Please indicate whether any of the California horned larks that were detected in the Project area were nesting.
132. Please quantify the "extensive amount of suitable habitat" that will remain for the species listed after the Project is built, and if all projects proposed for the region are approved.
133. Please provide a discussion of direct, indirect, and cumulative impacts on special-status bird species that depend on the site for forage during migration.

Background: IMPACTS TO NESTING BIRD SPECIES

Migratory birds have the potential to nest within the Project site. The Migratory Bird Treaty Act (Act) prohibits the "take" of migratory birds and their active nests containing eggs or young. Clearance surveys, as currently proposed in the AFC, are not practical and do not constitute mitigation for nesting birds. Furthermore, clearance surveys would

[193] AFC, p. 5.18-17.
[194] AFC, Appendix Y: p. 4-4.
[195] *Id.*

violate the Act by contributing to nest abandonment, increased mortality to young, or loss of eggs.

Research indicates locating landbird nests is extremely time consuming and labor intensive, and to do so effectively involves observing behavioral cues in addition to visual searches.[196] [197] As a result, compliance with the Act requires Staff to either limit Project ground disturbance activities to the non-breeding season, or enforce rigorous nest searching techniques based on research in comparable habitats. Recognizing it is impossible to locate all nests within a large project area, some State and Federal agencies have elected to conduct ground disturbance activities only during the non-breeding season when compliance with the Act can be ensured.

Data Requests

134. Please clarify the months in which both initial and routine vegetation clearing activities will be conducted.

135. Since the Migratory Bird Treaty Act prohibits disturbance to nests of migratory birds making a clearance survey unacceptable, please clarify how the Project will comply with the Migratory Bird Treaty Act if disturbance activities are conducted during the nesting season.

136. Please provide information on any bird nests that were detected during Project surveys.

Background: IMPACTS TO OTHER SENSITIVE REPTILE SPECIES

The AFC identified the high potential for the chuckwalla to occur in the Project area, and moderate potential for the rosy boa to occur.[198] The AFC does not provide any discussion on potential Project impacts to, or mitigation for, these species.

Data Requests

137. Please provide an assessment of potential direct, indirect, and cumulative Project impacts to the chuckwalla and rosy boa.

138. Please discuss any proposed mitigation for potential Project impacts to the chuckwalla and rosy boa.

139. Please discuss the attempts the applicant made to document the presence of the chuckwalla and rosy boa within the Project area.

[196] DeSante, D.F. and G.R. Geupel. 1987. Landbird productivity in central coastal California: the relationship to annual rainfall and a reproductive failure in 1986. Condor 89:636-653.
[197] Martin TE, Geupel GR. 1993. Nest-Monitoring Plots: Methods for Locating Nests and Monitoring Success. J. Field Ornithol., 64(4):507-519.
[198] AFC, Appendix Y: p. B-4.

Background: COLLISION HAZARDS

The AFC indicates the receivers that are associated with the reflector bays may be used as perching sites for songbirds and raptors, but the receivers are not expected to present a substantial collision hazard.[199] Furthermore, the AFC states that the 500-foot extension of the transmission line outside of the Project Site will not pose a collision hazard due to low use by special-status species deemed most at risk for collision with transmission lines.

Avian collision with structures and power lines is a significant and ongoing problem in the United States. Collision with structures kills an estimated 550 million birds a year and power lines kill another estimated 130 million per year.[200] Avian mortality factors in power line collision have been summarized as the following:

> *Factors that influence collision risk can be divided into three categories: those related to avian species, those related to the environment, and those related to the configuration and location of lines. Species-related factors include habitat use, body size, flight behavior, age, sex, and flocking behavior. Heavy-bodied, less agile birds or birds within large flocks may lack the ability to quickly negotiate obstacles, making them more likely to collide with overhead lines. Likewise, inexperienced birds as well as those distracted by territorial or courtship activities may collide with lines. Environmental factors influencing collision risk include the effects of weather and time of day on line visibility, surrounding land use practices that may attract birds, and human activities that may flush birds into lines. Line-related factors influencing collision risk include the configuration and location of the line and line placement with respect to other structures or topographic features. Collisions often occur with the overhead static wire, which may be less visible than the other wires due to its smaller diameter.*[201]

The AFC's assessment needs to address these three categories of factors before potential Project-related collision hazards can inferred.

The AFC's conclusion that the transmission line will not pose a collision hazard due to low use by special-status species deemed most at risk for collision with transmission lines is confusing and does not address the collision hazard for individuals not attempting to "use" it. Raptors and passerines, which are known to occur in the Project area, are especially susceptible to collisions with powerlines.[202] This includes

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[199] AFC, p. 5.6-24.

[200] Erickson WP, GD Johnson, and DP Young. 2005. A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191.

[201] The Edison Electric Institute's Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service. 2005. Avian Protection Plan (APP) Guidelines.

[202] Erickson WP, GD Johnson, and DP Young. 2005. A Summary and Comparison of Bird Mortality from Anthropogenic Causes with an Emphasis on Collisions. USDA Forest Service Gen. Tech. Rep. PSW-GTR-191.

horned larks, which constituted the majority of observed carcasses in one study.[203]

Data Requests

140. Please clarify whether the assessment of potential collision hazards incorporated bird species unlikely to attempt to perch on Project structures and transmission lines.

141. Please discuss site-specific environmental factors and line-related factors influencing the collision risk.

142. Please discuss any Project-specific design measures that will be implemented to mitigate potential avian collision hazards with Project structures and the proposed transmission line.

Background: WILDLIFE MORTALITY FROM EVAPORATION PONDS

The AFC identified salt toxicosis from Project evaporation ponds as a potential hazard to wildlife.[204] However, the applicant concluded impacts are not expected to be significant because waterfowl are uncommon or absent in the Project vicinity, and resident birds and small wildlife species obtain their water from food and thus would not ingest large amounts of the highly saline water from the evaporation ponds.[205] The AFC states an initial monitoring program of pond water is recommended. However, it doesn't specify whether the applicant will implement such a program, or whether any specific mortality minimization features have been incorporated into the design of the proposed ponds.

The Project site is within the Pacific Flyway. During wet years, playas can become shallow lakes that provide important habitat for waterbirds.[206] Playas are present in the Project region and perhaps on the Project site.

That some species can obtain water from their food does not mean they won't drink water if it is available. For example, desert tortoises and bighorn sheep will drink water if it is available, horned larks drink freely from waterholes, and Townsend's big-earned bats drink water.[207]

Data Requests

143. Please provide support for the AFC's statement that waterfowl are uncommon or absent in the Project vicinity.

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[203] *Id.*
[204] AFC, p. 5.6-24.
[205] AFC, p. 5.6-25.
[206] Sibley DA. 2001. The Sibley guide to bird life & behavior. New York: Alfred A. Knopf Inc.
[207] California Wildlife Habitat Relationships System. 2005. California Department of Fish and Game. California Interagency Wildlife Task Group. CWHR version 8.1 personal computer program. Sacramento (CA).

144. Please describe the management strategies that will be implemented to prevent ravens and other potential predators of special-status species from using Project evaporation ponds.

145. Please discuss the design features that will minimize potential wildlife mortality at the proposed evaporation ponds.

146. Please clarify whether the applicant will implement an evaporation pond monitoring program. If a monitoring program will be implemented, please:

    a. Indicate data that will be collected, including the specific water quality and wildlife use elements.

    b. Indicate the proposed frequency and duration of monitoring.

    c. Provide proposed success criteria and triggers for adaptive management.

Background: INVASIVE WEED CONTROL

The AFC indicates that a weed management plan that is consistent with the Mojave Weed Management Area Memorandum of Understanding (MOU) will be developed.[208] The MOU referenced in the AFC outlines several tasks applicable to all signatories, and specific tasks for each signatory. Besides provision of a list of target species and assignment of responsibilities, the MOU does not contain a weed management plan.

Data Requests

147. Please provide information on the current abundance and distribution of invasive weeds in the AFC Assessment Area (i.e., baseline conditions).

148. Please clarify which tasks outlined in the MOU the applicant intends to conduct.

149. Please provide a weed management plan for the Project.[209] The plan should contain:

    a. A discussion of the specific measures that will be implemented to prevent, control, and eradicate invasive plant species.

    b. Identification of the geographic area covered by the plan.

    c. Monitoring techniques, frequency, and duration.

    d. Success criteria and triggers for additional mitigation.

    e. Proposed reporting requirements.

Background: COMPLIANCE WITH LORS

The AFC states the BLM is implementing two habitat management plans that have

[208] AFC, p. 5.6-29.
[209] *Id.*

jurisdiction over the Project vicinity. These are the California Desert Conservation Area Plan, and the Flat-tailed Horned Lizard Rangewide Management Strategy.[210] According to the AFC, the Project is consistent with both of these BLM planning documents.[211] Additionally, the AFC indicates Project impacts would cause significant cumulative effects at a regional scale if they are inconsistent with the federally approved West Mojave Plan.[212]

The West Mojave Plan provides conservation measures to minimize and mitigate the take for each species for which take has been authorized under the Plan. It does not appear that the Project complies with these conservation measures.

The Plan establishes incidental take of white-margined beardtongue for maintenance of existing facilities within the BLM utility corridor and on private land within the species' range. Incidental take is limited to 50 acres of occupied and potential habitat.[213] The Plan calls for the conservation of all known occurrences of the species within washes south of the Cady Mountains.

Data Requests

150. Please specify how the Project and its contribution to cumulative impacts is consistent with thresholds set by the West Mojave Plan (Plan).

151. Please clarify whether flat-tailed horned lizards occur (or have the potential to occur) on the Project site and the corresponding relationship between the Project area and the Flat-tailed Horned Lizard Rangewide Management Strategy.

152. Please discuss how the Project will comply with the Plan's direction to conserve all known occurrences of crucifixion thorn on public land.[214]

153. Please provide information on the amount of incidental take that has already occurred under the Plan and discuss how the Project will meet the white-margined beardtongue conservation requirement established by the Plan.

154. Please discuss the Project's compliance with the burrowing owl conservation measures presented in the Plan.

155. Please clarify how much of the Pisgah ACEC will be impacted by installation of Project features and whether the Project will comply with the Plan's protection of Joshua trees, yucca and cacti.

156. Please clarify whether the Project will comply with the Plan's requirement for

[210] AFC, p. 5.6-32.
[211] *Id.*
[212] AFC, p. 5.6-26.
[213] *Id.*
[214] Final environmental impact report and statement for the West Mojave Plan: a habitat conservation plan and California desert conservation area plan amendment. Moreno Valley (CA): U.S. Dept. of the Interior, Bureau of Land Management, California Desert District.

raptor-safe electrical distribution lines associated with new construction.[215]

157. Please clarify how the Project will comply with the Plan's objective of protecting occupied Mojave fringe-toed lizard habitat.[216]

158. As required by CEC siting regulations, please provide:

a. Detailed maps at a scale of 1:6000 that show the proposed Project site and related facilities, biological resources, and associated areas where biological surveys were conducted.[217]

b. A discussion of all proposed off-site habitat mitigation and habitat improvement or compensation, and an identification of contacts for compensation habitat and management.[218]

c. A discussion of proposed compliance and monitoring programs that will be implemented to ensure the effectiveness of impact avoidance and mitigation measures incorporated into the Project.[219]

d. Copies of any preliminary correspondence between the applicant and state and federal resources agencies regarding the need for federal or state permits.[220]

Background: IMPACTS TO BAT SPECIES

The Pisgah ACEC contains lava tubes, some of which are used as bat roosts.[221] Bat roosts are afforded protection under the Plan. Applicants seeking discretionary permits for projects which would disturb natural caves, cliff faces, mine features, abandoned buildings or bridges would be required, as a condition of those permits, to conduct surveys to determine use of these features by bats.[222] Although the AFC indicates the Townsend's big-eared bat was detected in the Project area[223], it provides no information on the methods that were used to establish the presence of bat roosts, and it lacks any discussion on impacts to (or mitigation for), potentially occurring bat species covered by the Plan.

Data Requests

159. Please discuss any attempts the applicant made to identify bat roosts within the Project area.

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[215] *Id.*
[216] *Id.*
[217] California Energy Commission. 2007. Appendix B *of* Rules of practice and procedure & power plant site certification regulations. Document No. CEC-140-2007-003. Also see the updated Appendix B from July 2008 at http://www.energy.ca.gov/2008publications/CEC-140-2008-003/CEC-140-2008-003.PDF
[218] *Id.*
[219] *Id.*
[220] *Id.*
[221] *Id.*
[222] *Id.*
[223] AFC, Appendix B of Appendix Y.

160. Please provide information on bat roosts documented as occurring within the Pisgah ACEC or elsewhere in the Project vicinity.

161. Please provide information on features within the site that may serve as bat roosts (e.g., buildings, mine features, cliff faces), indicate whether these features will be directly or indirectly affected by the Project, and indicate whether the applicant will conduct a survey to document presence of bat roosts within the Project area.

Background: IMPACTS OF SUNCATCHER INSTALLATION

Vegetation within the immediate vicinity of the SunCatchers will be regularly trimmed and much of the vegetation between rows of SunCatchers will be allowed to regenerate naturally.[224] This may result in an increased potential for invasive plant establishment.[225] Although the AFC discusses this potential adverse impact, it does not discuss other potentially adverse impacts associated with Suncatcher installation and maintanence.

Data Requests

162. Please provide any studies that have been conducted on the effect of Suncatchers on the surrounding microclimate (or microhabitat) or on species composition, abundance, and diversity.

163. Please discuss how runoff from water used to wash Suncatchers, and shade created by the Suncatchers are expected to influence vegetation and habitat surrounding them.

164. Please clarify what percentage of the Project site and transmission line corridor will be disturbed by Project activities.

Background: OMITTED DATA IN THE AFC

The AFC lacks several items necessary for thorough Project review.

Data Requests

165. Please provide resumes for the following Project surveyors:

a. Brooke McDonald

b. Claudia Solorzano

c. Dave Erikson

d. Jill Seed

[224] AFC, p. 5.6-20.
[225] AFC, p. 5.6-21.

e. Kelly Sleeth

f. Rick Bailey

g. Sage Jensen

h. Brooke McDonald

i. Marc Baker

j. Peggy Wood (missing pages)

224. Please provide a map at a scale that clearly depicts the topography within the direct, indirect, and cumulative impacts areas.

225. Please provide a map of the Project site that indicates the UTM coordinates of Project boundaries.

226. Please provide information on the anticipated amount of Project-related ground disturbance within the BLM ACEC.

227. Please provide legible maps and legends for AFC Figures 5.5-3 and 5.5-4.

228. Please discuss any attempts that will be made to revegetate areas temporarily impacted by ground disturbance during the construction phase, and the Project site once the Project is decommissioned.

DECLARATION OF SERVICE

I, Bonnie Heeley, declare that on June 26, 2009, I served and filed copies of the attached CALIFORNIA UNIONS FOR RELIABLE ENERGY DATA REQUESTS, SET ONE, dated June 26, 2009. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service listed, located on the web page for this project at: http://www.energy.ca.gov/sitingcases/solarone/SOLARONE_POS.PDF. The document has been sent (1) electronically and (2) via U.S. Mail by depositing in the US Mail at South San Francisco, California, with first-class postage thereon fully prepaid and addressed as provided on the attached Proof of Service list to those addresses NOT marked "email preferred." It was sent for filing to the Energy Commission by sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address shown on the attached Proof of Service list.

I declare under penalty of perjury that the foregoing is true and correct. Executed at South San Francisco, CA this 26th day of June, 2009.

_____/s/_____
Bonnie Heeley

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Christopher Meyer Project Manager California Energy Commission 1516 Ninth Street Sacramento, CA 95814 cmeyer@energy.state.ca.us	Public Adviser California Energy Commission 1516 Ninth Street Sacramento, CA 95814 publicadviser@energy.state.ca.us	California Energy Commission Attn: docket No. 08-AFC-13 1516 Ninth Street, MS-4 Sacramento, CA 95814-5512 docket@energy.state.ca.us