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October 15, 2009

DOCKET
08-AFC-13

DATE OCT 15 2009

RECD. OCT 15 2009

California Energy Commission
Attn: Docket No. 08AFC13
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

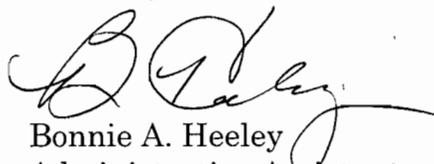
Re: 08AFC13- SES Solar One

Dear Docket Clerk:

Enclosed are an original and one copy of CURE Data Requests, Set 3 (Nos. 276-380). Please process the document, conform a copy and return the copy in the envelope provided.

Thank you for your assistance.

Sincerely,


Bonnie A. Heeley
Administrative Assistant

:bh
Enclosures

2309-022a

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Re: CALICO - SES SOLAR ONE PROJECT (08-AFC-13)
CURE Data Requests, Set 3 (Nos. 276-380)

Dear Ms. Bellows and Ms. Champion:

California Unions for Reliable Energy (CURE) submits this third set of data requests concerning hazardous material handling, project safety design, soil and water resources, project reliability, transmission, project scope, land use and biological impacts 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.

2309-020a

October 15, 2009
Page 2

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

**SES Solar One Power Plant
CUREs Data Requests, Set Three (No. 276-377)**

HAZARDOUS MATERIAL HANDLING

Background: STIRLING ENGINE WORKING FLUID

Stirling solar dishes do not convert sunlight directly into electricity but instead use concentrated sunlight to cause an enclosed compressed gas, the working fluid, to expand, driving an engine that turns a generator. In principle, a Stirling engine works by heating and cooling sealed gases through a method of transferring them back and forth between warm and cool heat exchangers. The Stirling engine encloses a fixed quantity of gas such as helium (“He”), hydrogen gas (“H₂”), nitrogen gas (“N₂”), or air.

According to the AFC, hydrogen, a flammable gas, will be used in the Power Conversion Unit of the Stirling Engine as a working fluid.¹ Hydrogen gas will leak more than other gases, particularly at high temperatures, due to its small size. Hydrogen is flammable and as a result must be handled carefully or it poses a safety hazard. Helium is inert, which removes all risk of flammability. Most technically advanced Stirling engines, like those developed for United States government labs, use helium as the working gas, because it functions close to the efficiency and power density of hydrogen with fewer of the material containment issues. Some engines use air or nitrogen gas as the working fluid. These gases minimize the problems of gas containment and supply.

Data Requests

- 276. Has the Applicant considered using helium or nitrogen gas instead of hydrogen gas as the working fluid in the Project’s Stirling engines? If yes, why was hydrogen gas chosen over helium/nitrogen?
- 277. What are the technical impediments (if any) to using helium as the working fluid in the Project’s Stirling engines instead of hydrogen gas?
- 278. What are the benefits and/or drawbacks of using hydrogen gas as the working fluid in the Project’s Stirling engines instead of the inherently safer helium?
- 279. Has the type of distribution system proposed for the Project that would be used to deliver hydrogen gas to the SunCatcher Power Conversion

¹ AFC p. 5.15-6

Units (“PCUs”) been used before? If yes, have there been any reported accidents?

280. The Applicant indicated that each SunCatcher PCUs is estimated to lose about 200 standard cubic feet (“scf”) of hydrogen gas per year. Does this estimate include the loss of hydrogen gas from the distribution system? If not, how much loss of hydrogen gas is expected from the distribution system?
281. How does the leak rate of hydrogen gas through the proposed distribution system compare with using compressed hydrogen gas bottles?
282. Please provide any modeling and risk analysis studies that have been performed to evaluate the potential impacts of transporting hydrogen for the Project.

PROJECT SAFETY DESIGN

Background: FIRE SYSTEMS

Fire suppression:

The Harvard-Station 46 in Newberry Springs would provide the primary fire protection, fire fighting, and emergency response service to the Solar One site.² The response to CEC Staff Data Request 43 indicates that it will take forty minutes on average for the fire department to arrive at the Site.

283. Please provide a copy of any written communication between the fire station and the applicant confirming that the fire department will provide the primary fire services.
284. Will the limited resources of the Harvard Fire Station meet the emergency response needs of this project? Will an onsite emergency response team be established?
285. Is the applicant considering any other emergency response service that would have a shorter response time?

² AFC p. 3-72.

SOIL AND WATER RESOURCES

Background: HISTORICAL MINING OPERATIONS

The AFC lists a number of mining operations that presently occur or have occurred on the Project site or in the vicinity.³ These include two mining operations within the Project boundaries and several others within two miles of the Project limits. Another mine processing operation was present on-site near the northeast site boundary. Wind can blow fine metal-bearing dust (from tailings piles and roads made of tailings) into the air, spreading the contamination to nearby non-mined areas.

- 286. Have the soils on the Project site been tested for contamination from mining?
- 287. Will protective measures be taken to ensure Project construction workers and operational employees will not be exposed to onsite soil contamination?

Background: WATER SUPPLY

In a letter to the Mojave Water Agency, Tessera Solar submitted a proposal to obtain the primary water supply for the Solar One project.⁴ Tessera has also been pursuing the use of BNSF water rights from the Mojave Basin. Due to the ongoing severe overdraft condition of the basin, the Mojave Basin has been the subject of ongoing adjudication by the Riverside County Superior Court with specific rights given to historical users of the water basin. This Judgment prohibits the export of water pumped from the Mojave Basin Area to areas outside of the adjudicated boundary.⁵ At the Data Response Workshop on September 16, 2009, Tessera indicated that it would most likely use recycled water from BNSF operations.

Data Requests

- 288. Has Tessera Solar entered into a contract to provide the primary water supply for the Solar One project? If so, please provide a copy of the contract.

³ AFC p. 5.3-12.

⁴ Letter from Tessera Solar to Kirby Brill, Mojave Water Agency, July 7, 2009.

⁵ Mojave Basin Area Adjudication, City of Barstow v. City of Adelanto, Riverside County Superior Court, Judgment After Trial, January 10, 1996, No. 208568.

289. Is Tessera seeking to export water to outside of the Mojave Basin for use in the Solar One Project? If so, please explain how this complies with the Judgment of the Riverside County Superior Court.
290. If BNSF water rights are transferred to Tessera, please explain:
- i. What was the previous use of the water by BNSF prior to the transfer?
 - ii. What subregion the water will be transferred from?
291. Please explain whether Tessera intends to seek approval of any water transfers outside of the basin from the Superior Court.
292. Please provide any documents in Tessera's possession concerning Tessera's attempts to obtain recycled water from BNSF for the Solar One project.
293. Please describe the location and process that generates the BNSF recycled water.
294. If Tessera is still proposing to use BNSF recycled water, please describe whether this water has been tested and what the primary constituents of the water are. Please also describe the type of treatment the water would undergo before and after transport to the Solar One Project site.
295. What is the BNSF recycled water currently used for?

PROJECT RELIABILITY

Background: PLANT EFFICIENCY AND RELIABILITY

At the Project Site Visit and Scoping Hearing on June 22, 2009, Tessera's Vice President for Development, Felicia Bellows, stated that the SunCatcher units used at the Project site are not currently in commercial operation anywhere in the world.⁶ Ms. Bellows also stated that there are only 10 test units operating at this time. In July, 2009, it was announced that the SunCatcher had been radically redesigned so that it is 5000 pounds lighter and has fewer pieces. Sandia scientist Chuck Andraka hailed it as a "crash course on redesign."⁷

Tessera Solar announced plans on August 19, 2009 to build a 1.5-megawatt solar power demonstration plant in Peoria, Arizona.⁸ It will be the first grid-tied application of the Stirling Energy System's SunCatcher technology. Tessera's CEO Bob Lukefahr called the 1.5 MW demonstration "a building block from which all our other projects will be built," and the "next step to commercialization."⁹

Describing the SunCatcher system, Dr. Barry Butler, a materials scientist and expert in solar technology, testified in the Sunrise Powerlink Proceeding that "an entire step wise development 1MW, 10MW, 100MW with installed cost, reliability and operation and maintenance costs assessed over a year of operation at each step is necessary to move from current prototypes to the large-scale commercial plants contemplated in the power purchase agreements between SDG&E and SES."¹⁰

Data Requests

296. What is the "mean time between failure" (MTBF) for the design that Felicia Bellows was discussing when she described 10 operating units?
297. What will the MTBF be for the new units? What evidence is this based upon?

⁶ Transcript for Site Visit, June 22, 2009, pp. 70-71.

⁷ *Next Generation of Solar Dishes use Less Steel*, Sue Major Holmes, Associated Press, July 20, 2009.

⁸ Tessera Solar Homepage: <http://www.tesseractosolar.com/north-america/press.htm>

⁹ *SRP, Tessera partner on grid-tied solar demonstration project*, Phoenix Business Journal, Patrick O'Grady, August 19, 2009.

¹⁰ *Phase I Direct Testimony of Dr. Barry Butler on behalf of Conservation Groups*, In the Matter of the Application of San Diego Gas & Electric Company (U 902-E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project, CPUC Application 06-08-010, June 1, 2007.

298. Will the redesigned SunCatcher units be used at the Solar One Project site?
299. How many hours of field testing have the redesigned units undergone?
300. What data does the applicant rely upon to validate that the SunCatcher technology is ready for commercial deployment at industrial scale?
301. How long will the applicant test the 1.5 MW demonstration units in Peoria, Arizona before being able to assess the SunCatcher grid-tied technology is reliable on a commercial scale?
302. What factors will the applicant use to evaluate whether the demonstration units in Peoria are successful?
303. If the redesigned SunCatcher technology will potentially be installed on the Project site, please provide documentation of any accelerated life tests that are planned or underway.

TRANSMISSION

Background: PROJECT INTERCONNECTION SCHEDULE

At the Project Scoping Hearing on June 22, 2009, Tessera's Project Manager, Camille Champion, stated that completion of the buildout of the full 850 megawatt project is projected by the fourth quarter of 2014.¹¹ Supplemental information provided by the applicant disclosed that in response to data requests from CURE, the applicant provided a Final Interconnection Facilities Study Report (FIFS) that disclosed that Southern California Edison estimates that the earliest possible interconnection date would be sometime in year 2015.¹² The FIFS also states that the estimated cost for interconnection upgrades is \$389-421 million.¹³ This cost estimate was only valid for 150 days and has expired.

In response to CURE data request 234, documentation was provided that included a letter from California ISO (CAISO) on March 2, 2006. In that letter, Stirling Energy Systems was told that it would be withdrawn from the ISO queue (involuntarily) if it did not provide certain information by March 16, 2006.

Data Requests

304. Please clarify whether the Project will be delayed because 2015 is the earliest possible interconnection date. How will this impact the Project schedule for Phase 1 of the Project?
305. How will the interconnect delay impact the Project schedule for Phase 2 of the Project?
306. Is the Applicant prepared to provide funding for the \$389-421 million cost of the required interconnection upgrades?
307. Is the Applicant prepared to fund any additional costs that may be part of subsequent interconnection cost estimates or actual costs?
308. Please provide a copy of the communication from SES to CAISO in response to the March 2, 2006 letter.

¹¹ Transcript for Site Visit, June 22, 2009, p. 27.

¹² SES Response to CURE Data Request 29, CAISO Report, November 6, 2008, p. 3 of 9.

¹³ *Id.*, p. 9 of 9.

Background: SCOPE OF PROJECT

The SIS says that adding SES One will cause overloads of the Lugo 1-2 transformers and Lugo-Pisgah #1 and #2 230 kV transmission lines under both N-0 and N-1 conditions.¹⁴ It concludes that eliminating these overloads will require converting the Pisgah substation to a 230/500 kV substation, adding two 230/500 kV transformers at Pisgah, and converting the Pisgah-Lugo #1 and #2 230 kV lines to a single 500 kV line, as well as looping an existing 500 kV line into the expanded Pisgah substation. In response to CURE's data request 237 and several others,¹⁵ SES says that "additional transmission questions can be directed to the CAISO or SCE."

309. Does the applicant intend to analyze and mitigate the environmental impacts associated with the transmission upgrades needed to mitigate the overload effects of the full SES One Project?

¹⁴ SIS, p. 27.

¹⁵ Also see responses to CURE's data requests 238-241, 244, 246-8, 250-252, 255, and 259-275.

LAND USE

Background: LAND AND WATER CONSERVATION FUNDS

According to the map provided by Tessera Solar in response to CEC/BLM data request #49, some of the land on the Project Site consists of lands purchased using the Land and Water Conservation Fund (LWCF) program. This program provides matching grants to States and local governments for the acquisition and development of public outdoor recreation areas and facilities. The program is intended to maintain a nationwide legacy of high quality recreation areas and facilities. Property acquired or developed with LWCF assistance shall be retained and used for public outdoor recreation. Any property so acquired and/or developed shall not be converted to other than public outdoor recreation uses without the approval of the National Park Service pursuant to Section 6(f)(3) of the LWCF Act.

Data Requests

310. Please describe how much land on the Solar One site is protected pursuant to the LWCF Act.
311. Please describe whether Tessera Solar intends to convert these lands to non-recreation uses. If so, please elaborate on what steps Tessera has taken or plans to take to convert this land.
312. Please describe any communications with government agencies concerning the conversion of the LWCF lands. Please enclose any such written communications.

BIOLOGICAL IMPACTS

Background: DESERT TORTOISE SURVEY METHODS AND VALIDITY OF BASELINE DATA

The AFC indicates the Project's desert tortoise surveys were conducted according to the USFWS Field Survey Protocol for a Non-federal Action.¹⁶ This protocol states:

To determine the accuracy of the surveyor in locating desert tortoise sign during Presence-or-Absence Surveys for each project area, the Fish and Wildlife Service recommends that the surveyor conduct an intensive survey in a portion of the project area following completion of the 100 percent survey. The size of the intensive survey area is 5 percent of the size of the project area. The intensive survey area would also receive 100 percent coverage using transects 10 feet wide rather than 30 feet or 5 feet wide rather than 10 feet wide. The location of the intensive survey would be plotted on the map and a comparison made between the sign recorded in this area during the 100 percent survey effort and the intensive survey effort. The quality or accuracy of the survey for the project area will be determined by comparing these two data sets for this area.¹⁷

CURE data request 5 asked the applicant to provide the results (including map) of the intensive surveys conducted for the Project. If intensive surveys were not conducted, CURE asked the applicant to provide a justification for why they were not conducted and to describe how surveyor accuracy was evaluated. The applicant responded to CURE's data request by stating "[s]urveys conducted for the Project are described in Section 5.6 and Appendix Y of the AFC. The results of those surveys are also provided therein. Maps of the surveys are also provided therein. These surveys were intensive."¹⁸

To clarify, CURE's data request refers to the "intensive surveys" discussed in the protocol that the AFC indicates was followed for desert tortoise surveys. The results of these intensive surveys (including a map showing their location) are not provided in the AFC.

Data Requests

313. If intensive surveys were conducted, please provide the results (including a map if available) of the intensive surveys conducted for the Project.

¹⁶ AFC, p. 5.6-4.

¹⁷ 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).

¹⁸ Applicant's response to CURE data request 5.

314. If intensive surveys were not conducted, please provide a justification for why they were not conducted and describe how surveyor accuracy was evaluated.

Background: FIELD METHODS AND SAMPLING ORDER

The applicant responded to CURE data request 2(d) by stating pairs of biologists walked parallel transects through each desert tortoise survey plot. However, in response to CURE data request 6, the applicant stated “[t]he tortoise survey was a sample plot survey protocol, not linear transect.”¹⁹ The sample plot survey protocol referenced by the applicant entails ten-meter (~30-ft) wide belt transects.²⁰ Furthermore, the protocol indicates that if probabilistic sampling is used, “each transect should be chosen either systematically or randomly ensuring that the entire action area has an equal probability of being included in the sample. Transects should be completed in a random order, oriented in a logistically convenient pattern (e.g., lines, squares, or triangles). Any sampling design other than simple systematic or random sampling must be approved by USFWS (e.g., stratification).”²¹ In reference to these guidelines, the applicant has stated “[t]he assessment area was surveyed systematically as shown in the figures in Section 5.6 of the AFC.”²² The figures in Section 5.6 of the AFC do not show how transects (or survey blocks) were completed in “a random order” as indicated in the protocol.

Data Requests

315. Please clarify whether belt (or line) transects were used to conduct desert tortoise surveys.
316. If the answer is yes, please clarify whether closer transect spacing was implemented at any location(s) within the survey area and mark these locations on a map. Please also discuss how each transect was chosen either systematically or randomly, and provide the order in which transects were completed.
- a. If the answer is no, please discuss how each survey block was systematically searched and provide the order in which survey blocks were completed.

¹⁹ Applicant’s response to CURE data request 6.

²⁰ US Fish and Wildlife Service. 2009. Preparing for any action that may occur within the range of the Mojave desert tortoise (*Gopherus agassizii*). Available from: Fish and Wildlife Service, Ventura (CA).

²¹ *Id.*

²² Applicant’s response to CURE data request 6.

Background: SURVEYOR EXPERIENCE

The USFWS desert tortoise survey protocol implemented by the applicant recommends surveyors have a minimum of 60 days field experience searching for desert tortoises and tortoise sign.²³ CURE data request 10 asked the applicant to indicate the survey personnel that had this minimum level of experience. CURE data request 11 asked the applicant to discuss how surveyors without 60 days prior field experience were trained, and any measures that were taken to ensure less experienced personnel obtained accurate survey results.

The applicant's response to these data requests was "[m]ost of the URS staff were trained and had 60 days or more of previous tortoise survey experience. Less experienced staff with less than 60 days experience were paired with more experienced staffers. See resumes of field staff."²⁴ The resumes provided by the applicant do not indicate which personnel had 60 days or more of previous tortoise survey experience; rather, they suggest many of the surveyors had no prior desert tortoise survey experience.²⁵ Furthermore, the applicant's response does not answer CURE's question on how less experienced personnel were trained, and the measures that were taken to ensure less experienced personnel obtained accurate survey results. Additionally, the applicant's statement appears to conflict with its response to CURE data request 2(d), which indicated pairs of biologists walked parallel transects through each plot (i.e., one individual per transect line).

Data Requests

317. Please specify each person that had a minimum of 60 days prior field experience searching for desert tortoises and tortoise sign.
318. For surveyors without 60 days of prior field experience, provide a discussion of how surveyors were trained and any measures that were taken to ensure they obtained accurate survey results.
319. Please distinguish the personnel that surveyed independently from those that were paired with more experienced staff.

Background: DATA COLLECTION AND REPORTING

The applicant's desert tortoise survey data sheets indicate considerably more tortoise scats and inactive tortoise burrows were detected than indicated on the map in the AFC.²⁶ In response to CURE data request 12, the applicant stated "[a]ll

²³ AFC, p. 5.6-4.

²⁴ Applicant's response to CURE data requests 10 and 11.

²⁵ AFC, Appendix G of Appendix Y.

²⁶ AFC, Appendix G of Appendix Y and Figure 4 of Appendix Y.

tortoise sign recorded with GPS units are shown in Section 5.6 of the AFC document.”

Many of the data sheets provided in the AFC do not distinguish whether they were completed during focused surveys or as a result of incidental observations. As a result, CURE data request 14 asked the applicant to explain which desert tortoise data sheets were completed during focused surveys and which ones were completed as a result of incidental observations. The applicant responded by stating “[i]ncidental observations were not always recorded on data sheets, as it was not required. The data sheets in Appendix A of the Biological Resources Technical Report (Appendix Y of the AFC) are not differentiated between incidental observation and desert tortoise observed during focused surveys.”²⁷

Data Requests

320. Please clarify whether some of the desert tortoise signs detected in the field were recorded on the data sheets (i.e., the ones that were provided in the AFC), but were not recorded with a GPS unit and were not depicted on the occurrence map provided in the AFC.²⁸ If all desert tortoise signs were depicted on the map provided in the AFC, please explain why data depicted on the map are inconsistent with data on the data sheets.
321. Please clarify whether data on all “incidental observations” of desert tortoises and their sign were provided in the AFC, specifically, in Section 5.6.1.2 (*Existing Conditions*) and on Figure 5.6-4 (*Special Status Species Detected*). If the answer is yes, please discuss how data that were not recorded on data sheets were recorded such that they could be accurately applied to the desert tortoise abundance estimates provided in the AFC.²⁹ If the answer is no, please justify the validity of the abundance estimates provided in the AFC given they did not account for all detections (of desert tortoise).
322. Please clarify whether the applicant knows which data sheets are associated with the focused surveys and which ones are associated with incidental observations. If the answer is yes, please label the data sheets accordingly.

²⁷ Applicant’s response to CURE data request 12.

²⁸ See AFC: Figure 4 of Appendix Y.

²⁹ See desert tortoise abundance estimates provided in AFC, p. 5.6-9.

Background: SURVEY RESULTS AND APPLICATION

In response to CURE data request 19, the applicant stated “[t]he agencies have accepted the surveys as being valid and have stated that no additional survey effort is necessary.”

Data Requests

323. Please specify the agencies that have accepted the desert tortoise surveys as being valid and that have stated no additional survey effort is necessary. In your response, please cite the individuals that have made these determinations.
324. Please provide any documentation in the applicant’s possession that demonstrates that no additional survey efforts are needed.

Background: DESERT TORTOISE IMPACT ASSESSMENT

The applicant has stated mitigation for impacts to the desert tortoise will be based on the acreage of suitable habitat impacted.³⁰ The AFC states the majority of the AFC Assessment Area is considered suitable for desert tortoise.³¹ In response to CURE data request 19 the applicant stated “[t]he entire site is considered mostly suitable for tortoise occupation with regard to habitat.”³² It remains unclear how much of the Project area the applicant considers suitable desert tortoise habitat, and thus the acreage value that will be used to calculate habitat compensation. CURE data request 22 asked the applicant to explain how desert tortoise habitat suitability was determined and to quantify the modifier “majority” (in reference to the majority of the AFC Assessment Area being suitable habitat). The applicant’s response to CURE’s data request 22 does not correspond with the questions.

Data Requests

325. Please clarify the acreage value that will be used to determine desert tortoise habitat compensation.
326. If portions of the Project site and temporary access road will be impacted but not included in habitat compensation calculations, please discuss how these portions of the Project were deemed unsuitable for desert tortoise.

³⁰ Applicant’s response to CURE data request 19.

³¹ AFC, p. 5.6-9.

³² Applicant’s response to CURE data request 19.

Background: PROPOSED MITIGATION FOR IMPACTS TO THE DESERT TORTOISE

The applicant's proposed mitigation for the desert tortoise includes having a biological monitor present during maintenance activities that occur in occupied desert tortoise habitat located outside of the perimeter fence. If maintenance activities will occur in occupied habitat outside the fence, clearance surveys followed by exclusionary fencing may be required.³³ CURE data request 29 asked the applicant to discuss how occupied desert tortoise habitat will be identified in areas requiring maintenance activities. The applicant responded by stating "[m]aintenance activities will be conducted according to requirements, if any, determined in coordination with the resource agencies."

Data Request

327. Please clarify whether the applicant's mitigation for proposed maintenance activities outside of the perimeter fence hinges solely on the requirements of the resource agencies, or whether the applicant continues to propose the mitigation measures outlined in the AFC. If the latter, please discuss how occupied desert tortoise habitat will be identified in areas requiring maintenance activities.

BACKGROUND: IMPACTS TO THE BURROWING OWL

Two burrowing owls were detected on-site during the applicant's 2008 surveys.³⁴ The applicant concluded further investigation would be required to determine whether these owls were migrants or residents,³⁵ and that if these birds were residents, impacts would be considered significant.³⁶ The applicant has proposed pre-construction surveys to determine occupancy of burrowing owls on the site prior to vegetation clearing.³⁷ Although this measure may be useful in avoiding take of owls, it does not account for the information needed to finalize the impact assessment and ensure adequate mitigation (which may include compensation, construction of artificial burrows, and post-relocation monitoring).

The AFC indicated focused surveys were conducted for the burrowing owl.³⁸ However, the applicant has subsequently stated "[p]rotocol surveys [for burrowing owls] were determined to be unnecessary because of the extensive coverage provided by other focused surveys conducted onsite during 2007 and 2008."³⁹ The response

³³ AFC, p. 5.6-27.

³⁴ AFC, p. 5.6-23.

³⁵ AFC, p. 5.6-11.

³⁶ AFC, p. 5.6-23.

³⁷ Applicant's response to CURE data request 37.

³⁸ AFC, p. 5.6-4.

³⁹ Applicant's response to CURE data request 38.

appears to conflict with information provided in the AFC, and suggests focused surveys for the burrowing owl were in-fact not conducted. Through its data requests, CURE has attempted to determine the methods that were used to document the baseline distribution, presence, and abundance of burrowing owls on the Project site. Many of the questions posed in CURE's data requests and related to the burrowing owl were not answered. As a result, it remains impossible to evaluate the appropriateness of the applicant's effort in establishing baseline conditions, the validity of the survey data, the impact the Project would have on burrowing owls, and the applicant's ability to meet CEQA requirements through mitigation that has been proposed.

The applicant has indicated pre-construction burrowing owl surveys will follow the Burrowing Owl Consortium pre-construction survey protocol.⁴⁰ The Burrowing Owl Consortium survey protocol does not provide methods for pre-construction surveys; it simply states, "[a] preconstruction survey may be required by project-specific mitigations no more than 30 days prior to ground disturbing activity."⁴¹ Thus, the pre-construction survey methods the applicant would use to ensure take avoidance for the burrowing owl need to be specified in the AFC.

Data Requests

328. Please indicate the season of the year pre-construction burrowing owl surveys will be conducted.
329. Please discuss how the applicant intends to determine owl residency status, and thus the significance of Project impacts on burrowing owls.
330. Please clarify the applicant's statement that focused surveys were conducted for the burrowing owl by:
 - a. Discussing any focused survey efforts (i.e., non-incidentals) that were devoted to locating owls and owl sign. Please include the dates these efforts were conducted and the personnel that were involved.
 - b. Indicating whether burrowing owl surveys were conducted during the hours around sunrise and sunset, as outlined in the survey protocol.⁴²
 - c. Indicating whether burrows were mapped in accordance with the survey protocol.⁴³ If the answer is yes, please provide a map showing burrow concentrations.

⁴⁰ *Id.*

⁴¹ The California Burrowing Owl Consortium. 1993. Burrowing Owl Survey Protocol and Mitigation Guidelines. Available online at: www.dfg.ca.gov/wildlife/species/docs/boconsortium.pdf.

⁴² *Id.*

⁴³ *Id.*

- d. Indicating the techniques that were used to determine whether burrows were being used (or had been used) by an owl.
 - e. Specifying whether all burrows were examined for signs of owl use.
 - f. Indicating whether potential owl burrows were monitored to determine owl use. If the answer is yes, please provide the dates, times, and locations of the monitoring efforts.
 - g. Indicating 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).
 - h. Indicating whether burrowing owl surveys were conducted outside of the Project boundary, including along the proposed transmission line extension route and around the Pisgah Substation.
331. Please clarify how the proposed pre-construction surveys will follow the Burrowing Owl Consortium protocol by discussing the specific components of the protocol that will be followed.
332. Please provide documentation of any correspondence with CDFG on the need to conduct protocol surveys for the burrowing owl.

Background: RARE PLANT SURVEY METHODS AND VALIDITY OF BASELINE DATA

Because the AFC provides very little information on the methods the applicant used to conduct rare plant surveys,⁴⁴ and because the reliability of the results is highly dependent on the methods used, CURE issued several data requests asking the applicant to describe its survey techniques. The applicant responded to CURE’s data requests by stating a systematic sampling approach was used to assure an unbiased sample survey was conducted across the entire site.⁴⁵ Aside from stating the entire AFC Assessment Area was divided up into 240-acre cells and that a team of two biologists surveyed two cells per day, the applicant has not provided information on how systematic sampling was conducted.⁴⁶ Instead, the applicant has stated there are no required protocols for focused special-status plant surveys required by the CEC, CDFG, BLM, or USFWS, and that CURE’s request for precise information (e.g., locations and dates) on the surveys is not available and is not necessary for the AFC process.⁴⁷

There are three, regulatory guidelines that apply to the applicant’s rare plant surveys:

⁴⁴ See AFC, p. 5.6-3.

⁴⁵ Applicant’s response to CURE data request 45.

⁴⁶ Applicant’s response to CURE data request 44.

⁴⁷ Applicant’s response to CURE data request 46.

- CEC siting regulations require the applicant to conduct biological resources surveys using appropriate field survey protocols during the appropriate season(s), and that State and federal agencies with jurisdiction be consulted for field survey protocol guidance prior to surveys if a protocol exists.⁴⁸ Survey protocols for rare plants have been established by the CDFG, USFWS, and California Native Plant Society.^{49 50 51}
- The West Mojave Plan requires botanical surveys that conform to CDFG protocol survey guidelines.⁵²
- Lead agencies generally require protocol-level surveys to ensure CEQA and/or NEPA requirements are met.

If the applicant is going to comply with the conditions set forth in the West Mojave Plan, its botanical surveys need to follow the CDFG survey protocol. The protocol states botanical surveys should be “conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas.”⁵³ To date, the applicant has not provided information to substantiate systematic field techniques covering all potential impact areas were implemented.

The applicant’s division of the site into 240-acre cells (for surveying) has little relevance unless information on the sampling scheme is provided. There are numerous sampling designs (e.g., simple random, systematic, and stratified random among others) used in natural resource investigations, with choice of the most appropriate design dependent on study objectives (among many other factors). For example, one design might be used to detect 90% of the special-status plant species

⁴⁸ 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>

⁴⁹ 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.

⁵⁰ United States Fish and Wildlife Service. 2000. Guidelines for conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants. United States Fish and Wildlife Service, Washington D.C.

⁵¹ 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>.

⁵² 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.

⁵³ Item 4d of 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.

that occur on the site, whereas another would be used to detect 90% of the individual plants that occur (of which some may be special-status). The applicant's statement that a team of two biologists surveyed two cells per day further confounds the issue. This is because most plant species do not occur uniformly across the landscape, and the amount of work accomplished in a plant survey is known to vary with terrain, density of the vegetation, varying levels of species detectability, and the time required to identify plants and record results.

The applicant has indicated rare plant surveys were not conducted across 100% of the site, but instead the site was sampled.⁵⁴ Sampling is used to obtain an estimate of the entire area being sampled. As a simple example, suppose sampling is conducted throughout a site such that 25% of the entire site is surveyed (or sampled). Through the sampling effort, surveyors detect 10 individuals of Species X. Assuming the samples were representative, the surveyors could infer 40 individuals of Species X were present in the site. In many cases the statistical analysis associated with sampling is more complex. Sampling does not represent a census (i.e., a total count) as suggested in the AFC. For example, the applicant cannot conclude the site contains only one crucifixion thorn and only one Utah vine milkweed plant—and that impacts to such few plants would be less than significant—without having conducted either a census or used sampling data to make a population estimate.⁵⁵ Furthermore, it's unclear how the applicant can conclude regionally significant populations of rare plants, if present, would have been detected by sampling, especially given the knowledge that most plant species are not uniformly distributed across the landscape.

Data Requests

333. Please provide the sampling scheme used to survey for rare plants. Specifically,
 - a. Provide the sampling design that was used (e.g., simple random, systematic, stratified random, etc.).
 - b. Provide the amount of area inside and outside of the Project site that was included in the sample (i.e., the sample size, or the area that was physically inspected for rare plants).
 - c. Provide the sampling methods that were used in the field to ensure systematic and thorough coverage of potential impact areas.
 - i. Were line transects used? If yes, please provide information on the locations of the lines, the length of lines, the spacing between lines, and the number of biologists that walked each line.

⁵⁴ Applicant's response to CURE data request 54.

⁵⁵ AFC, p. 5.6-21, 5.6-22. Applicant's response to CURE data request 63.

- ii. Were sampling plots used? If yes, please provide information on how plots were established (e.g., random), the size of plots, the total number of plots, their locations, and the number of biologists that inspected each plot.
- 334. The CEC siting regulation presented in Appendix B (g) (13) (B) (i) requires detailed maps that show where biological resource surveys were conducted.⁵⁶ Please clarify whether this regulation applies to the Project. If so, please provide the maps.
- 335. CEC siting regulations require the applicant to conduct biological resources surveys using appropriate field survey protocols during the appropriate season(s), and that State and federal agencies with jurisdiction be consulted for field survey protocol guidance prior to surveys if a protocol exists.⁵⁷ Please clarify whether this regulation applies to the Project.
- 336. The West Mojave Plan requires botanical surveys that conform to CDFG protocol survey guidelines.⁵⁸ Please clarify whether the Project is required to meet the conditions set forth in the West Mojave Plan.
- 337. Please justify the abundance numbers the AFC provided for the four rare plant species detected on the site given the site was sampled, not censused.
- 338. Please provide a response to CURE data request 65, which asked the applicant to 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: RARE PLANT IMPACT ASSESSMENT

CURE data request 58 asked the applicant to discuss the local, regional, and rangewide significance of Project impacts on small-flowered androstephium. The applicant responded by stating “[i]n the immediate area the BLM has designated the Pisgah Area of Critical Environmental Concern (ACEC). There are as many small-flowered androstephium inside this ACEC. This species occurs throughout the

⁵⁶ AFC, Section 5.6: Data Adequacy Worksheet.

⁵⁷ 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>

⁵⁸ 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.

desert province, but is largely concentrated in the Mojave Desert. This Project impacts a small area within the greater range of this species and nearby occurrences have been conserved through the creation of the ACEC adjacent to the Project site.”

Approximately 70% of the known occurrences of small-flowered androstephium are within the Project site or immediate surrounding area.⁵⁹ Whereas it is true that there are many occurrences of small-flowered androstephium in the Pisgah ACEC, the applicant’s response fails to acknowledge most of the occurrences (as well as occurrence northwest of the Project site) are threatened by proposed development.⁶⁰

CURE data request 61 asked the applicant to discuss the local, regional, and rangewide significance of Project impacts on white-margined beardtongue. The applicant responded by stating “[t]he West Mojave Plan (WMP) addresses impacts on BLM land in the greater area as well as in the Project area. According to the WMP, this species is a disjunct group with a very limited range within California, all within the West Mojave. The WMP includes the planned acquisition of one private parcel where this plant occurs within the adjacent Pisgah ACEC. The Pisgah ACEC was established specifically to conserve populations of white-margined beardtongue and other rare species.” The applicant’s response does not address the data request. Furthermore, the applicant’s response fails to acknowledge most occurrences of this species are in or immediately adjacent to the Project site, and even occurrences within the Pisgah ACEC are threatened by proposed development.⁶¹

Data Requests

339. Please confirm that the applicant will not be making any effort to avoid and minimize Project impacts to the rare plants known to occur in the Project area as suggested in the applicant’s response to CURE data request 66.
340. Please discuss the local, regional, and rangewide significance of Project impacts on small-flowered androstephium.
341. Please discuss the cumulative impacts of the Project on small-flowered androstephium. In your response, please indicate the number of known occurrences of small-flowered androstephium that will remain if all projects proposed for the region are approved.⁶²

⁵⁹ Department of Fish and Game, Biogeographic Data Branch. 2009. California Natural Diversity Database. Version 3.1.0. Updated 01 Aug 2009.

⁶⁰ See AFC, Figure 5.6-7.

⁶¹ *Id.*

⁶² Proposed projects are shown on Figure 5.6-7 of the AFC.

342. Please discuss the cumulative impacts of the Project on white-margined beardtongue. In your response, please indicate the number of known occurrences of white-margined beardtongue that will remain if all projects proposed for the region are approved.
343. Please provide a revised “Regional Context” map (similar to AFC Figure 5.6-7) that includes current information on proposed development projects.⁶³

Background: SITE ASSESSMENT

CURE data request 73 asked the applicant to specify the CEC regulation referenced on page 2-3 of Appendix Y in the AFC. The AFC suggests this regulation requires a qualitative assessment of habitat within a one-mile buffer of the AFC Assessment Area. The data request asked the applicant to discuss how habitat was “qualitatively” assessed and to provide information on habitat(s) to the north and south of the Assessment Area, and within the referenced one-mile buffer. The applicant’s response stated “[t]he discussion related to the 1-mile buffer is from the CEC Rules of Practice and Procedure. Habitat was quality assessed through the use of aerial photography and direct observation of some of these areas.” This response does not specify the CEC regulation and it does not provide the requested information on habitat(s) to the north and south of the site.

Data Requests

344. Please provide a copy or citation for the specific CEC regulation referenced in Appendix Y, p. 2-3 of the AFC.
345. Please provide a map of the habitat(s) to the north and south of the Project site up to the 1-mile buffer.

Background: IMPACTS TO THE MOJAVE FRINGE-TOED LIZARD

The applicant has stated “[i]t is possible that the proposed facility may indirectly affect the quality of MFTL habitat by impeding, slowing, or redirecting the transport of sand to the existing MFTL habitat. This potential impact can be monitored over time to determine whether such an impact actually occurs.”⁶⁴

⁶³ During the 16 September 2009 Issues Resolution Workshop the applicant indicated the Regional Context map provided in the AFC was no longer accurate and that an updated version was reasonably available to the applicant.

⁶⁴ Applicant’s response to CURE data request 84.

Data Request

346. Please clarify whether the applicant will monitor the effect of the Project on MFTL habitat. If monitoring will be conducted, please:
- a. Discuss the specific techniques that will be used to monitor MFTL habitat.
 - b. Identify which of the on- and off-site MFTL habitats that were identified in the AFC will be monitored.
 - c. Provide the frequency and duration of proposed monitoring.
 - d. Provide the criteria that will be used to determine whether the Project is having an adverse effect on MFTL habitat.
 - e. Discuss the mitigation that will be implemented if monitoring reveals the Project is having an adverse effect on MFTL habitat.

Background: IMPACTS TO NELSON'S BIGHORN SHEEP

The applicant has stated that approximately 458.3 acres of habitat suitable for bighorn sheep will be affected in the AFC Assessment Area and 404.5 acres will be affected in the 1000-foot buffer of the AFC Assessment Area as a result of the proposed Project.⁶⁵ Classifying habitat can be extremely subjective. Consequently, CURE data request 90 asked the applicant to indicate how habitat suitability for bighorn sheep was determined and why the majority of the Assessment Area is not considered suitable. The applicant responded by stating “[b]ighorn sheep habitat suitability was provided by Gary Thomas of the Society for the Conservation of Bighorn Sheep in 2008.”⁶⁶ The applicant’s response does not address how habitat suitability was determined. Among other reasons, this information is needed to determine how subjective (versus objective) the determination was, the qualifications of the individual making the determination, the data that were used to make the determination, and the amount of effort that was devoted to delineating suitable habitat.

The applicant has yet to provide information on the direct, indirect, and cumulative Project impacts on bighorn sheep habitat, or any mitigation designed to compensate for bighorn sheep habitat loss.⁶⁷

⁶⁵ AFC, p. 5.6-13.

⁶⁶ Applicant’s response to CURE data request 90.

⁶⁷ See Applicant’s response to CURE data request 91.

Data Requests

347. Please discuss how Mr. Thomas determined bighorn sheep habitat suitability within the Project study area.
 - a. Indicate and justify the criteria that were used to define habitat suitability.
 - b. Indicate the data that were used to determine habitat suitability.
 - c. Discuss the field efforts that were used to collect and/or validate data on habitat characteristics.
 - d. Provide any data on bighorn sheep occurrence in the Project study area used in delineating suitable habitat, and/or that are available from the BLM, CDFG, USFWS, bighorn sheep conservation societies, local experts, or wildlife researchers.
 - e. Please provide a resume or curriculum vitae for Mr. Thomas.
348. Please clarify whether any other individuals or agencies were consulted for information on bighorn sheep occurrence within the Project study area.
349. Please provide the bighorn sheep sighting information referenced in the applicant's response to CURE data request 88.
350. Please discuss the significance of direct, indirect, and cumulative Project impacts on bighorn sheep.
351. Please discuss the applicant's proposed mitigation for Project impacts to bighorn sheep habitat.

Background: IMPACTS TO WILDLIFE CORRIDORS

CURE data request 110 asked the applicant to clarify the types of analysis that was used to estimate Project impacts to wildlife corridors. The applicant responded by stating “[t]here is an open corridor north of the Project site which allows unrestricted movement east-west and another open corridor east of the Project site which allows movement north-south. The Project site and surrounding vicinity is unrestricted and conducive to movement of wildlife throughout the area.” CURE’s data request referred to the type of analysis that was used, not the presence of corridors. The presence of remnant corridors following Project construction does not necessarily mean impacts will be less than significant. Wildlife use of corridors is considerably more complicated than the presence of a pathway between two points. For example, the remnant corridor(s) may not have the vegetative conditions required of particular species, or they may be exposed to

conditions that preclude use (e.g., noise disturbance). As a result, a valid inference on corridor use typically requires some level of analysis, such as the modeling that is being conducted for the Carrizo Energy Solar Farm licensing case.⁶⁸

The applicant has not adequately demonstrated the presence of an “open corridor north of the Project site which allows unrestricted movement east-west and another open corridor east of the Project site which allows movement north-south.” The cumulative impacts map provided in the AFC depicts numerous wind and solar projects proposed in the vicinity of the Project.⁶⁹ Characteristics of these projects (including fencing) are likely to impede wildlife movement. Assuming this is true, wildlife would have to travel many miles to find an unimpeded travel route around the proposed projects. According to the map provided by the applicant, if proposed projects are approved, the nearest north-south corridor east of the Project site will be at least 10 miles away, and the nearest east-west corridor north of the Project site will be approximately 3 miles away. Furthermore, given the majority of the Project site will be fenced, it is unclear how the applicant can conclude “the Project site and surrounding vicinity is unrestricted and conducive to movement of wildlife throughout the area.”⁷⁰

Data Requests

352. Please provide a discussion of the analysis that was used to estimate Project impacts to wildlife corridors.
353. Please provide a map that shows the corridors east and north of the Project site referenced by the applicant.

Background: IMPACTS TO SENSITIVE BIRD SPECIES

CURE data request 131 asked the applicant to specify whether any of the California horned larks that were detected in the Project area were nesting. The applicant responded by stating “[t]he horned larks that were detected in the Project area are not the sensitive coastal subspecies; as such, the determination of whether or not the California horned larks detected were nesting or not was not noted or necessary.”⁷¹

There are several subspecies of horned larks. The subspecies “California horned lark” (*Eremophila alpestris actia*) is listed as a California Department of

⁶⁸ See <http://www.energy.ca.gov/sitingcases/carrizo/documents/index.html#other>

⁶⁹ AFC, Figure 5.6-7.

⁷⁰ See Applicant’s response to CURE data request 110.

⁷¹ Applicant’s response to CURE data request 131.

Fish and Game Watch List Species.⁷² The AFC reported this subspecies as occurring consistently throughout the assessment areas during the 2007 and 2008 surveys.⁷³

The applicant concluded potential impacts on several 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.⁷⁴ The AFC provides a map of only habitat northwest and southeast of the Project site,⁷⁵ and most of the land in those areas is planned for development.⁷⁶ As a result, CURE asked the applicant to justify its impact assessment by quantifying the amount of suitable habitat (for sensitive bird species) that would remain in the region after the Project is built, and if all projects proposed for the region are approved.⁷⁷ The applicant responded by stating CURE's request was "beyond the reasonable scope of this assessment; however, information regarding this request may be found at the Solar Energy Development Programmatic EIS Information Center at <http://solareis.anl.gov/>."⁷⁸ The applicant's statements are mutually exclusive. That is, if quantifying the amount of suitable habitat that will remain for the target species is beyond the reasonable scope of the applicant's assessment, then the applicant cannot conclude impacts will be less than significant due to the extensive amount of suitable habitat in the region. Therefore, the applicant needs to provide information that justifies its conclusion, else revise its impact assessment such that it does not rely on unknown information (i.e., speculation). Information related to CURE's request is not readily available at the Solar Energy Development Programmatic EIS Information Center as stipulated by the applicant.

Data Requests

354. Please clarify whether the California horned lark was detected in the assessment area. If California horned lark were detected, please indicate whether this species exhibited any breeding activity. If they were not detected, please clarify why the AFC indicates the California horned lark is one of the special-status species detected within the assessment area.
355. Please quantify the "extensive amount of suitable habitat" that will remain for special-status bird species within the Project area after the Project is built, and if all projects proposed for the region are approved.

⁷² California Department of Fish and Game, Biogeographic Data Branch. July 2009. Special Animals. Available at: <http://www.dfg.ca.gov/wildlife/nongame/>.

⁷³ See AFC, p 5.6-10, 5.6-7, 5.6-23, and Appendix E of Appendix Y.

⁷⁴ AFC, p. 5.6-23.

⁷⁵ See AFC, Figure 5.6-2.

⁷⁶ AFC, Figure 5.6-7.

⁷⁷ CURE data request 132.

⁷⁸ Applicant's response to CURE data request 132.

356. Please also provide a map of the suitable habitat that remain for special-status bird species within the Project area after the Project is built, and if all projects proposed for the region are approved.
357. If the applicant is unable to provide the requested information, please provide a revised impact assessment that does not rely on unknown information.

Background: AVIAN COLLISION HAZARDS

Studies on avian collisions with power lines have determined there are three categories of factors that influence collision risk: those related to avian species, those related to the environment, and those related to the configuration and location of lines.⁷⁹ 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.⁸⁰ CURE data request 141 asked the applicant to discuss site-specific environmental factors and line-related factors influencing avian collision risk. The applicant responded by stating this issue is addressed in Section 5.6 and Appendix Y of the AFC.⁸¹ Information on site-specific environmental factors and line-related factors influencing avian collision risk is not present in the AFC as stipulated by the applicant.

Data Request

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

Background: WILDLIFE MORTALITY FROM EVAPORATION PONDS

The AFC identified the Project evaporation ponds as a potential hazard to wildlife.⁸² Specifically, water in the ponds has the potential to become toxic, and if animals ingest it, they may become sick or die. Addressing the potential hazard of Project evaporation ponds can include both proactive and reactive measures. Proactive measures can include design features such as covers (for birds) or fencing (for terrestrial species) that prevent wildlife from accessing the ponds. CURE data request 145 asked the applicant to discuss the design features that would be implemented to reduce the potential for wildlife mortality at Project evaporation

⁷⁹ The Edison Electric Institute's Avian Power Line Interaction Committee and U.S. Fish and Wildlife Service. 2005. Avian Protection Plan (APP) Guidelines.

⁸⁰ *Id.*

⁸¹ Applicant's response to CURE data request 141.

⁸² AFC, p. 5.6-24, 5.6-25.

ponds. The applicant's response that "pond covers *may be* implemented and designed to minimize attraction of predator and scavenger species if deemed an issue during operational monitoring" is reactive and lacks certainty.⁸³ To clarify, the intent of CURE data request 145 was to determine whether there would be any proactive measures to prevent wildlife mortality at the evaporation ponds.

CURE data request 146 asked the applicant to clarify whether an evaporation pond monitoring program will be implemented. The applicant responded by stating trace element concentrations of the evaporation pond water *should be* monitored quarterly to determine if there is a concern regarding wildlife access to the pond water. Because the applicant's response lacks certainty, it does not answer CURE's data request.

Data Requests

359. Please clarify whether the applicant intends to implement any proactive design measures (i.e., upon completion of construction) at the evaporation ponds to reduce potential for wildlife mortality.
360. Please indicate the slope of the banks in the Project evaporation ponds.
361. Please indicate whether an evaporation pond monitoring program will be implemented.

Background: COMPLIANCE WITH LORS

CURE data request 158 asked the applicant to provide information, that according to the AFC, is required by the California Energy Commission (CEC) siting process. Specifically, CURE asked the applicant to:

- a. provide 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;
- b. provide information on all proposed off-site habitat mitigation and habitat improvement or compensation, and an identification of contacts for compensation habitat and management;
- c. provide a discussion of compliance and monitoring programs to ensure the effectiveness of impact avoidance and mitigation measures incorporated into the project; and,
- d. submit copies of any preliminary correspondence between the project applicant and state and federal resource agencies regarding whether federal or state permits will be required for the proposed project.⁸⁴

⁸³ Applicant's response to CURE data request 145.

⁸⁴ See AFC Section 5.6, Data Adequacy Worksheet.

The applicant responded to data request 158(a) by stating maps of sufficient scale and detail are provided in the AFC. The maps provided in the AFC are at an extremely small scale, with the largest having a scale of 1:48,000.⁸⁵ Whereas CURE understands the burden of providing maps at a scale of 1:6000, the maps provided by the applicant are not at a scale that enables clear depiction of Project features in relation to biological resources (e.g., it is difficult to determine whether special-status species occurrences were inside or outside of the Project boundary). Furthermore, the applicant has yet to provide any maps that show the precise locations of the biological resource surveys (e.g., the locations biologists searched, not the general area sampled). Finally, during the 16 September 2009 Issues Resolution Workshop the applicant stated the proposed Satellite Services Complex had been moved (or perhaps eliminated). A revised map reflecting this and potentially other changes to Project features has not been issued.

In response to data request 158(b), the applicant stated specific off-site habitat mitigation and habitat improvement or compensation required for the Project, if any, has not been identified at this time, and no contacts for compensation habitat and management have been identified.

In response to data request 158(c), the applicant stated “[m]itigation measures are described in Section 5.6 and Appendix Y of the AFC. Additional measures and requirements, including potential monitoring, may be developed through the CEC and BLM permit processes and will be disclosed if and when they are developed.” Section 5.6 and Appendix Y of the AFC do not provide a discussion of *compliance and monitoring programs* for the following subject areas:

- Desert tortoise relocation⁸⁶
- Burrowing owl
- Mojave fringe-toed lizard
- Wildlife movement
- Special-status plants
- Avian collision hazards

In response to data request 158(d), the applicant stated “[n]o preliminary correspondence regarding the need for Federal or State permits is available. Federal permits are separate from the CEC process.” According to the AFC, the applicant has contacted the resource agencies and provision of the correspondence is a CEC siting regulation.

⁸⁵ See AFC, Figure 5.6-1 through 5.6-7.

⁸⁶ The applicant suggests a program for direct mortality only. The applicant has not proposed a compliance and monitoring program for indirect Project impacts to the tortoise, including tortoises that are relocated.

Data Requests

362. Please provide a map that shows the precise areas within each survey grid where each distinct (e.g., special-status plants, desert tortoise, burrowing owl) biological resource survey was conducted.
363. Please provide a map that clearly depicts the locations of special-status species occurrences in relation to Project features (e.g., boundaries).
364. Please update the map or provide a new map that reflects changes in Project features (including utility lines) since the AFC was issued.
365. Please discuss the status of the applicant's attempts to identify off-site habitat mitigation, and if available, the location(s) of the proposed mitigation lands.
366. Please provide a discussion of *compliance and monitoring* programs for desert tortoise relocation, and for Project impacts to burrowing owl, Mojave fringe-toed lizard, wildlife movement, special-status plants, and avian collision hazards.
367. Please provide copies of any written correspondence between the applicant and state and federal resources agencies regarding the need for federal or state permits. For verbal correspondence, please provide the name of the individual contacted and the results of the conversation.

Background: REVEGETATION FOLLOWING DISTURBANCE

CURE data request 228 asked the applicant to discuss any attempts that will be made to revegetate areas temporarily impacted by ground disturbance during the construction phase, and on the Project site once the Project is decommissioned. The applicant responded by stating mitigation measures, including revegetation of areas temporarily disturbed, are discussed in Section 5.6 and Appendix Y of the AFC. The AFC has no such discussion. Furthermore, the applicant has indicated its decommissioning plan will discuss alternatives other than complete restoration to the original condition.⁸⁷

Data Request

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

⁸⁷ AFC, p. 3-81.

Background: RAVEN CONTROL PLAN

The AFC identified the potential for the Project to benefit common raven populations, which in-turn could have adverse effects on the desert tortoise, Mojave-fringe-toed lizard, and other special-status species.⁸⁸ As a result, the applicant has prepared a Raven Management Plan (Plan). The applicant's Plan indicates the Project site will be surrounded by a security fence that will be designed and maintained to exclude coyotes and foxes from entering the site.⁸⁹ However, the applicant has also indicated existing culverts will not be fenced,⁹⁰ and these culverts will allow movement of wildlife (including large mammals) through the Project site.⁹¹

The Plan indicates adaptive management will be required if existing raven management measures are not effective in controlling significant raven predation of the desert tortoise and Mojave fringe-toed lizard.⁹² However, the Plan does not define what the applicant considers "significant" or how "significant predation" will be determined. The Plan further indicates the project owner will consult with the CDFG, BLM, and the USFWS prior to implementing adaptive management changes.⁹³ There may be a financial disincentive for the project owner to implement adaptive management. Therefore, the Plan should provide a more definitive mechanism for determining whether adaptive management is necessary.

One of the stated objectives of the Plan is to determine raven abundance, distribution, nest site locations, and behavior exhibited in the Project area prior to, during, and for a minimum of two years following completion of Project facilities.⁹⁴ However, the applicant's proposed monitoring methods are not consistent with this objective. Specifically, the applicant does not plan to start raven monitoring until Phase I of the Project is complete, thus precluding attainment of baseline (i.e., "prior to") data⁹⁵ and effectiveness monitoring through all site construction phases (as stated in the Plan).⁹⁶

The Applicant proposes to discontinue the survey and reporting requirements after two years if it can be determined that the Project design, operation, and raven

⁸⁸ AFC, p. 5.6-25.

⁸⁹ Raven Monitoring and Control Plan for the SES Solar One Site in San Bernardino County, California: p. 7-1.

⁹⁰ Applicant's response to CURE data request 114(b).

⁹¹ Applicant's response to CURE data request 116.

⁹² Raven Monitoring and Control Plan for the SES Solar One Site in San Bernardino County, California: p. 7-5.

⁹³ *Id.*

⁹⁴ *Id.*, p. 8-1.

⁹⁵ *Id.*

⁹⁶ *Id.* p. 7-5.

management plan have been successful.⁹⁷ However, the Plan does not provide any specific success criteria, thus leaving the success of the Plan (and thus ability to discontinue surveys and reporting) completely arbitrary and subject to bias.

Debris basins for surface runoff retention will be added throughout the Project Site.⁹⁸ These basins will cumulatively total approximately 285 acres.⁹⁹ Supplemental water sources benefit raven populations, and although the Plan discusses preventing raven access to Project evaporation ponds and water used for cleaning and dust suppression, it provides no discussion on how ravens will be excluded from the debris basins.

Data Requests

369. Please indicate how coyotes, foxes, and any other target predator species will be managed within the site, and clarify how these predators will be excluded from the site while still allowing other wildlife to move through the site.
370. Please define what the applicant considers “significant” raven predation and discuss how the applicant will determine whether significant raven predation of the desert tortoise and Mojave fringe-toed lizard is occurring. In your response, provide the criteria by which significance will be determined.
371. If the applicant has developed an unbiased mechanism for determining whether adaptive management is necessary, please describe the mechanism.
372. Please discuss how baseline (i.e., pre-Project) data on raven abundance, distribution, nest site locations, and behavior will be obtained. If these data have already been collected, please provide them along with the methods that were used.
373. Please provide the specific criteria that will be used to determine that the Plan has been successful and surveys and reporting can be discontinued.
374. Please discuss how ravens will be prevented from accessing water in Project debris basins.

⁹⁷ *Id.*

⁹⁸ AFC, p. 3-51.

⁹⁹ AFC, Table 3-17.

Background: IMPACTS FROM TRANSMISSION LINES AND SUBSTATION UPGRADES

As a result of the Project, modifications will need to be made to the Pisgah, Eldorado, and Lugo substations.^{100 101} In addition, upgrades will need to be made to 65 miles of the Southern California Edison (SCE) Lugo-Pisgah No. 2 transmission line.¹⁰² Finally, approximately 12 to 15 220kV transmission line structures (90 to 110 feet tall) with concrete foundations would be required to make the interconnection from the Solar One Substation to the SCE Pisgah Substation.¹⁰³

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The AFC does not discuss baseline biological resource conditions associated with these features, their potential impacts, or the measures that will be implemented for impact avoidance and mitigation.¹⁰⁵ Consequently, CURE included several data requests (e.g., numbers 122, 155, 164) related to impacts and mitigation associated with the transmission line extension, upgrades to the Lugo-Pisgah No. 2 transmission line, and upgrades to existing substations.

Data Requests

375. Please clarify whether the following features (or actions) are considered part of the SES Solar One Project:
- Expansion of the Pisgah Substation
 - Upgrades to the Eldorado and Lugo substations
 - Upgrades to the Lugo-Pisgah No. 2 transmission line
 - Installation of 12 to 15 transmission line structures to connect the Solar One Substation to the SCE Pisgah Substation

If any of these features (or actions) are considered part of the Project, please:

- a. provide a discussion of the associated baseline biological resource conditions;
- b. discuss the surveys that were conducted to document baseline conditions;

¹⁰⁰ AFC, p. 3-3.

¹⁰¹ AFC, p. 5.6-1.

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ AFC, p. 3-29.

¹⁰⁵ Other than stating impacts on biological resources are anticipated to be minimal and not cumulatively significant, and that the transmission line outside of the Project Site will not pose a significant collision hazard. See AFC, p. 5.6-24 through 5.6-26.

- c. quantify the amount of ground disturbance that will occur;
- d. provide an analysis of potential direct and indirect impacts to sensitive biological resources; and,
- e. discuss the measures that will be implemented for impact avoidance and mitigation.

376. Please clarify whether the transmission line that will be installed outside of the Project Site (to connect the Solar One Substation to the SCE Pisgah Substation) will be 500-feet long as indicated in AFC Section 5.6,¹⁰⁶ or 0.14 mile (739 feet) long as indicated in AFC Section 3.0.¹⁰⁷

Background: DESERT TORTOISE RELOCATION PLANS

According to the AFC, a tortoise relocation program shall be developed and approved by BLM and the wildlife agencies to minimize the direct mortality of tortoise during construction and operation.¹⁰⁸ In response to CURE Data Request 30, the applicant stated that “[r]elocation protocols will likely be similar to those of the Fort Irwin relocation project. Relocation efforts at Fort Irwin have been suspended due to the high mortality rate of relocated desert tortoises.¹⁰⁹

Data Request

377. Please comment on whether the applicant still anticipates modeling tortoise mitigation efforts on the relocation model developed in the Fort Irwin project?
378. Please provide the status of the tortoise relocation plan and indicate whether any fundamental parts of the plan have changed since the AFC was released.

Background: IMPACTS OF SUNCATCHER WASHING

The Project site lies within the Mojave Desert, which is the driest desert in the continental United States.¹¹⁰ Precipitation occurs primarily between October and March and ranges from 2.23 to 2.5 inches per year.¹¹¹ Temperatures range

¹⁰⁶ See AFC, p. 5.6-24.

¹⁰⁷ AFC, p. 3-29.

¹⁰⁸ AFC 5.6-26.

¹⁰⁹ Army suspends relocation of Ft. Irwin tortoises, Louis Sahagun, LA Times, October 11, 2008.

¹¹⁰ AFC, p. 5.6-5.

¹¹¹ *Id.*

from 40 to 110 degrees Fahrenheit.¹¹² Low elevation regions of the Mojave Desert are characterized by creosote bush and other drought-tolerant species.¹¹³

Suncatcher units will require repeated washing for the life of the Project, including a monthly routine wash and a periodic “scrub” wash.¹¹⁴ Vegetation in desert areas strongly reflects availability of water and evaporative demand for water.¹¹⁵ Given the extremely arid site conditions, water used to wash Suncatchers is likely to influence the vegetation surrounding them. In addition, vehicles used in washing the Suncatchers will compact the soil. Compacted soils have a lower infiltration rate and are subject to water ponding. Because water is a limiting resource in the desert, any available water is likely to attract wildlife. This includes desert tortoises, which have shown to be attracted to puddles that form on roadways during rainstorms.¹¹⁶ Desert tortoises may also be attracted to the consistent food source associated with the flush of vegetation resulting from Suncatcher wash water.

The AFC indicates mirror washing will occur at night¹¹⁷, and that most of the water used to clean the mirror surface will evaporate before reaching the ground surface. The applicant also expects incidental wash water reaching the ground surface to evaporate quickly.¹¹⁸ Given mirror washing will involve high-pressure spraying, and temperatures at night in the desert can be quite cold, these assumptions appear unlikely.

Data Requests

379. Please discuss how the applicant will avoid direct take (e.g., crushing under vehicles) of tortoises and other wildlife that may be attracted to mirror wash water or the artificially abundant vegetation, particularly at night when visibility is low.
380. Please provide the underlying data used to support the assumptions that most mirror wash water will evaporate before reaching the ground, and that if it reaches the ground it will evaporate quickly (despite compacted soil conditions).

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ AFC, p. 3-37 and 5.5-7.

¹¹⁵ U.S. Fish and Wildlife Service. 1994. Desert Tortoise (Mojave Population) Recovery Plan. U.S. Fish and Wildlife Service, Portland, Oregon.

¹¹⁶ National Park Service, Mojave National Preserve [internet]. 2006. Desert Tortoise. Available at: <http://www.nps.gov/moja/naturescience/desert-tortoise.htm>.

¹¹⁷ Applicant's response to CEC and BLM data requests 1-48, 81, 109-112.

¹¹⁸ AFC, p. 5.5-10.

DECLARATION OF SERVICE

I, Bonnie Heeley, declare that on October 15, 2009, I served and filed copies of the attached CALIFORNIA UNIONS FOR RELIABLE ENERGY DATA REQUESTS, SET THREE, dated October 15, 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 15th day of October, 2009.

_____/s/_____
Bonnie Heeley

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