

CALIFORNIA ENERGY COMMISSION

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June 16, 2008

Mr. Gary L. Palo – Business Director
FPL Energy, LLC
6 Belcourt Drive
New Port Beach, California 92660

DOCKET 08-AFC-2	
DATE	JUN 16 2008
RECD.	JUN 16 2008

Dear Mr. Palo:

**RE: BEACON SOLAR ENERGY PROJECT (08-AFC-2)
DATA REQUESTS 1 through 70**

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff requests the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 2) assess whether the facility will be constructed and operated in compliance with applicable regulations, 3) assess whether the project will result in significant environmental impacts, 4) assess whether the facilities will be constructed and operated in a safe, efficient and reliable manner, and 5) assess potential mitigation measures.

These data requests are being made in the technical areas of: Air Quality, Biological Resources, Cultural Resources, Socioeconomics, Soils, Transmission System Engineering, Waste Management, and Water Resources. With respect to the project's cut and fill activity and related PM 10 emissions, both the Sols and Air Quality Staff will be reviewing information requested in the Soils section discussing site grading. Written responses to the enclosed data requests are due to the Energy Commission staff on or before July 16, 2008, or at such later date as may be mutually agreed upon.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to the Committee and me within 20 days of receipt of this notice. The notification must contain the reasons for the inability to provide the information or the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions regarding the enclosed data requests, please call me at (916) 654-4206.

Sincerely,

Bill Pfanner
Energy Facility Siting Project Manager

Enclosure

cc: Docket (08-AFC-2)

PROOF OF SERVICE (REVISED 10/16/08) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 5/22/08

**BEACON SOLAR ENERGY PROJECT
(08-AFC-02)
Data Request**

Technical Area: Air Quality

Author: Geoff Lesh/Keith Golden

BACKGROUND

The AFC describes two uses for the two gas-fired boilers, but does not go into detail about the specifics of operations. Staff needs additional information about these boilers to ascertain when they would operate by calendar quarter and time of day to determine whether their emissions could contribute to a worsening of ozone and PM10 ambient air quality.

DATA REQUEST

1. a. Please describe the months of the year and the duration and number of hours of the day that the boilers would operate to provide freeze protection of the heat transfer fluid.
b. Please describe whether the boilers would startup and operate at full load for this procedure or whether partial load would be possible.
2. a. Please describe the months of the year and the duration and number of hours of the day that the boilers would operate to provide pre-warming for the daily startup.
b. Please describe whether the boilers would startup and operate at full load for this procedure or whether partial load would be possible.

BACKGROUND

The AFC describes two possible scenarios for interconnection of the Beacon Solar Energy Project to the electricity transmission grid. One connects to an existing substation, while the other involves construction of a new substation/switchyard. Staff needs additional information to analyze the potential air quality impacts from the construction and operation of the new substation.

DATA REQUEST

3. Please describe the size (in acres) of the new substation.
4. Please describe the construction equipment necessary and the duration of construction.
5. Please quantify the expected criteria pollutant emissions from the construction equipment identified in Soils Data Request 45.
6. Please quantify and show the calculations of the sulfur hexafluoride greenhouse gas release estimates from the substation switching equipment for the case in which the new substation would be required.

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BACKGROUND

The AFC described construction PM10 emissions control efforts that would include watering of soil prior to disturbance. The PM10 release estimates in the AFC assumed a soil moisture content of 15 percent for disturbed soil, without a discussion of whether this soil moisture content is representative or typical.

DATA REQUEST

7. Please provide data to justify the soil moisture content assumption of 15 percent taking into consideration the actual local soil characteristics and moisture levels.
8. Please describe the quantity of water and frequency of watering that would be required to establish and maintain the 15 percent soil moisture content and provide effective PM10 emission control.

BACKGROUND

Large volumes of soil must be moved and graded in the leveling of the site. Section 5.2.4.4 of the AFC states there will be sections of at most 60,701 square meters (approximately 14.9 acres) of ground that will be undergoing disturbance at any one time, until the entire site of approximately 2,000 acres is completed. Energy Commission staff needs to understand how the PM10 generated by construction activities will be managed and controlled on an ongoing basis during each phase of construction.

Because of the large volumes of soil that must be moved in leveling the site, fugitive dust control is paramount to staff during the construction phase of the project. Staff needs a better understanding of how fugitive dust will be controlled and monitored during the site preparation phase of the project construction.

Page 2-27 of the AFC describes that grading will be completed during the first nine months of the construction schedule. Appendix Table 7-A appears to confirm that scrapers and dozers will be used between Months 2 and 10. However, the water trucks and pulls appear to be used only between Months 2 and 6, a period of only five months.

DATA REQUEST

9. Please clarify whether all the site preparation work will be completed before the foundations and major equipment installation will take place. If that is so, please describe how fugitive dust control methods will be employed (including dust palliative materials that could be used) to stabilize the recently disturbed soils before the commencement of foundation work.

DATA REQUEST

10. Please explain why water dispensing vehicles would not be used for approximately one-half of the grading activities. Please revise Tables 7-A through 7-K, if necessary, if this presumption is in error.

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11. a. Please describe in detail how the dust generated by the earth moving operations will be managed.
 - b. Describe in detail the number and type of water dispensing vehicles that will be employed during the grading of each 15-acre parcel.
 - c. Describe how and by what criteria a determination would be made for additional water dispensing to control fugitive dust.
12. Please describe at what wind speeds construction scraping and grading would be suspended due to the inability to adequately control fugitive dust emissions. Staff would very likely recommend a permit condition that would require such a suspension of grading in order to adequately control fugitive dust emissions.

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Data Request**

Technical Area: Biological Resources

Author: Susan Sanders

BACKGROUND

Updated Surveys. Section 5.3.2.4 of the AFC describes the biological resources surveys conducted in 2007, and notes that additional surveys need to be completed in 2008. The 2008 surveys will cover areas that were added to the project after completion of the 2007 field work. These new areas include the eastern portion of the gas pipeline alignment and along Neuralia Road and California City Road, an approximately 80-acre parcel in the north-central portion of the plant site, and a narrow strip of land along the north east boundary of the plant site. The floristic surveys will also be repeated due to a poor rainfall year in 2007 that did not allow for a presence or absence determination of some special status plant species.

DATA REQUEST

13. Please provide the results of the 2008 biological resource surveys for the entire project area and linear facilities.

BACKGROUND

Evaporation Ponds. The project will create three double-lined evaporation ponds each with a nominal surface area of 8.3 acres for a total of 25 acres. Table 5.3-9 on page 5.3-33 of the AFC summarizes the waste constituent discharge concentrations for these evaporation ponds, which is only the starting point for the needed analysis. The relevant information for evaluating potential impacts is the projected future concentrations of potentially toxic constituents. These constituents will increase over time as water evaporates and as they accumulate in aquatic invertebrates, and possibly could pose a threat to birds attracted to the ponds. Salinity (sodium concentrations) is of particular concern in light of the October 2007 Compliance Report for the SEGS VIII and IX Project Area, which reported 19 waterfowl deaths due to salt poisoning at the Harper Lake evaporation ponds in the summer of 2007 (Luz 2007). On page 5.3-43 of the mitigation section, the AFC notes that "evaporation ponds will be monitored, and the evaporation pond water will be tested periodically (e.g., for selenium) throughout the life of the solar plant." Staff needs more details on the proposed monitoring/remediation action plan to determine if this mitigation measure will adequately address potential impacts to migratory birds.

DATA REQUESTS

14. Please provide a more detailed and specific monitoring plan for the evaporation ponds, including:
 - a. a discussion of the frequency and nature of the monitoring;
 - b. the elements that will be monitored (e.g., sodium, selenium);
 - c. resident and migratory species that could be at risk;

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- d. remedial actions that could be taken if the ponds became a hazard for wildlife; and
 - e. the events that might trigger implementation of those remedial actions.
15. Please discuss how the evaporation ponds will be designed, built and operated to discourage wildlife use.

BACKGROUND

Raven Monitoring/Control Plan. The AFC addresses the increased risk of raven predation on desert tortoise and other native wildlife through the mitigation measure described on page 5.3-37 of the AFC, which states: “The project owner is supportive of funding a monitoring program to document potential nesting ravens. The details of the funding mechanism and monitoring will be coordinated with the United States Fish and Wildlife (USFWS), California Department of Fish and Game (CDFG) and Energy Commission prior to initiation of the Project.” Staff needs more details on the monitoring program, a proposed plan of action if raven populations prove to be increasing and posing a threat to desert tortoise and other wildlife, and a commitment to mitigation beyond supporting the funding of a monitoring program. This monitoring/control plan needs to be consistent with the plan recently adopted by USFWS to reduce common raven predation on the desert tortoise (USFWS 2008).

DATA REQUEST

16. Please provide a detailed raven monitoring and control plan that includes at least the following elements:
- a. a discussion of how the monitoring and control plan will be coordinated with CDFG and USFWS;
 - b. area to be covered by the plan;
 - c. use of perch-deterrent devices and locations of installation, and other pre-construction measures that might reduce raven presence and nesting activities;
 - d. a monitoring plan, including a discussion of survey methods and frequency, for establishing baseline data on pre-project raven numbers and activities and assessing post-project changes from this baseline;
 - e. remedial actions that could be taken (e.g., nest removal) if ravens are preying on desert tortoise and other wildlife; and
 - f. triggers for those remedial actions.

BACKGROUND

Rerouting Pine Tree Creek Washes. The dry Pine Tree Creek washes will be rerouted south and east of the project site, resulting in impacts to 8,150 linear feet of the western branch of the wash, and 6,200 feet of the eastern channel. Eliminating these

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dry channels will result in impacts to 57.8 acres of Mojave desert wash scrub, including 13.7 acres of State jurisdictional waters. According to Appendix L of the AFC, the new drainage replacing the Pine Tree Creek washes will be a trapezoidal channel having 3:1 side slopes with a minimum bottom width of 345 feet and minimum depth of 8 feet. Page 5.3-37 of the AFC notes that impacts to the washes would be mitigated at a 1:1 ratio through revegetation in the new channel and enhancement of the western wash outside of the plant site.

Appendix L provides considerable analysis and detail as to how this new channel will adequately convey anticipated flood flows (as much as 20,000 cubic feet/second) but neither the AFC nor Appendix L offers any information on the anticipated biological values of this new channel. Staff needs a description of how this engineered drainage might replace the biological and hydrological functions of the natural drainage beyond conveying floodwaters. This information is needed so staff can assess whether the proposed replacement channel adequately mitigates for the significant loss of the Pine Tree Creek wash within the project area.

DATA REQUEST

17. Please describe how the newly-created channel would eventually replicate the functions and wildlife values of a natural desert wash. This analysis should include a conceptual revegetation plan, a discussion of how the new channel could recreate natural soil characteristics (biological soil crust, permeability), microtopography (microcatchments for moisture, seeds), hydrology, and geomorphology.

BACKGROUND

Specifics on Compensation Proposal. Table 5.3-10 on page 5.3-38 of the AFC provides a table summarizing mitigation ratios and acreage for impacts to desert tortoise, Mohave ground squirrel, and burrowing owl, and states on page 5.3-41 that mitigation will be accomplished either by land acquisition acceptable to USFWS, CDFG, and the Energy Commission, or an assessed financial contribution calculated based on the final construction footprint. Staff needs sufficient information about the proposed offsite purchase of in-kind habitat and funding for acquisition/management to determine if it is feasible to accomplish this mitigation, and if it is adequate to offset the anticipated impacts to special status wildlife species. Final acreages for compensation lands have not yet been worked out with the USFWS and CDFG, but potential mitigation sites can nevertheless be identified, and a general discussion of enhancement and endowment costs and long-term monitoring provided.

DATA REQUEST

18. Please provide information on the location and characteristics of the lands proposed for compensatory mitigation, the associated enhancement and endowment costs, and the long-term monitoring plan for these compensation lands. The discussion of offsite compensation habitat should reflect close coordination with the CDFG and USFWS.

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BACKGROUND

Summary of Temporary and Permanent Impacts by Habitat Type. Tables 5.3.4, 5.3-7, and 5.3-8 from the AFC provide summaries of impact acreages. These summaries and tables use inconsistent terminology that refer variously to vegetation communities, cover types, desert tortoise and Mohave ground squirrel habitat, or plant communities. It would be useful to provide a table that included all habitat types for the entire project area, including linear features, and which summarized all temporary and permanent impacts of the project. This table should adopt a uniform terminology for habitat or cover types.

DATA REQUEST

19. Please provide a summary table that lists temporary and permanent acreage impacts to each habitat for the entire project, including linear facilities. This table could be similar to Table 5.3-8, but should use the same habitats as depicted in Figure 7 of Appendix F.

BACKGROUND

Impact Analysis and Mitigation for Western Burrowing Owls. The discussion on page 5.3-22 of the AFC suggests that the project area supports an unusually high population of burrowing owls. This species is typically scarce in California's southern deserts (Shuford and Gardali 2008; see reference list immediately following this section). Table 5.3-10 of the AFC indicates that the project will directly affect three pairs of burrowing owls within the project site, which the AFC characterizes as less than significant with implementation of mitigation measures (measures for avoiding direct impacts to eggs and young and compensatory mitigation of 19.5 - 58.5 acres).

Mitigation recommendation WBO-3 on page 5.3-42 does not provide enough information to determine if this measure will avoid significant impacts to burrowing owls. This measure states: "WBOs within the temporary or permanent impact areas and a 160-foot buffer will be excluded from active burrows during the non-breeding season (September 1 – January 31) and encouraged to passively relocate to suitable, unoccupied habitat at least 160 feet outside of the exclusion area." It is not clear how burrowing owls will be encouraged to relocate to unoccupied habitat. Surveys suggest that suitable habitat outside of the project boundaries is already occupied. Enhancement measures include supplementing offsite burrows "at a 2:1 replacement ratio of enhanced natural, unoccupied burrows or artificial burrows.....a minimum of 6.5 acres of foraging habitat for WBO will be preserved for each pair impacted" (WBO-3, page 5.3-42). If burrows are not the limiting factor for burrowing owl populations in the project area, increasing the number of burrows will not enhance habitat for them or encourage their relocation. Also, there is no information in the AFC to determine if 6.5 acres is adequate to support a pair of breeding burrowing owls in this habitat, or how this or any other acreage would be preserved for use as burrowing owl foraging habitat.

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DATA REQUEST

20. Please provide a more comprehensive and detailed burrowing owl avoidance and mitigation plan which reflects site-specific conditions at the project area, and which provides enough information to evaluate its potential for success. This plan should reflect close coordination with CDFG and USFWS.

BACKGROUND

Cumulative Impact Analysis for Burrowing Owls. The cumulative impact analysis also does not offer enough information to evaluate significance of the project on regional populations of burrowing owls. No analysis is provided as to the effect of construction disturbance and loss of over 2,000 acres of foraging habitat on the burrowing owls occupying lands surrounding the project area. Burrowing owls have been known to forage up to 2.5 km from their nests (Haug et al. 1993) so it is likely that some of the owls adjacent to the project area rely on this site for food. The cumulative impact analysis does not appropriately assess the potential impacts of this loss to the regional population of burrowing owls, although information elsewhere in the AFC (see page 43 of Appendix F) suggests that the project area may support a substantial portion of the regional population.

The cumulative impact analysis (page 5.6-35) concludes that project impacts to burrowing owls are less than significant because loss of the currently disturbed and degraded habitat within the project area is not likely to further reduce the amount of available habitat for special status species such as burrowing owl. However, the site currently supports a considerable number of burrowing owls and the project will certainly reduce the habitat available to them. The cumulative impact analysis also states that the only other large projects in the area (the Pine Tree Wind Development Project and the Los Angeles Department of Water and Power (LADWP) Barren Ridge-Castaic Transmission Project) have no incremental effect because they fully mitigated for the loss of burrowing owl habitat with compensatory mitigation. No information is provided on that compensatory mitigation to confirm that burrowing owls were specifically addressed in the federal Biological Opinions and state Incidental Take Permits that were secured for those projects.

DATA REQUEST

21. a. Please provide a revised cumulative impact analysis that specifically addresses the cumulative effects of the project on the regional population of burrowing owls. Please include information on the compensatory mitigation provided by the Pine Tree Wind Development Project and the LADWP Barren Ridge-Castaic Transmission Project.
- b. Describe how the mitigation for these two projects reduces the incremental impacts of the projects on the regional burrowing owl population.

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BACKGROUND

Impacts to Other Special Status Species: The AFC does not provide a cumulative impact analysis for several special status species known to occur at the site, including loggerhead shrike, northern harrier, and American badger. More information is needed to assess the direct and indirect impacts of construction on these species, including loss of foraging and breeding habitat.

Other special status species not fully addressed in the AFC could potentially be affected by the proposed project. A stable breeding population of snowy plovers occurs nearby at Koehn Lake and Harper Lake (Molina and Garrett 2004). This species could be attracted to the evaporation ponds that will be created at the project site, and an impact analysis should be provided. Desert kit fox are also known to occur at the site. This is a Fully Protected species, and avoidance and minimization measures will need to be implemented to avoid crushing/entombing desert kit fox in their burrows. Similar measures will be needed for American badgers.

DATA REQUESTS

22. Please provide a thorough analysis of direct, indirect, and cumulative impacts of the project on loggerhead shrike, northern harrier, snowy plover, desert kit fox, and American badger.
23. Please provide avoidance/minimization measures for desert kit fox and American badger.

BACKGROUND

Facility Closure. Section 3.2, page 3-2 of the AFC describes permanent facility closure plans, which will include procedures designed to ensure environmental protection and compliance with applicable LORS. Page 3-2 of the AFC states that: "Because it is not possible to predict at present the conditions that will exist at the time decommissioning decisions must be made, decommissioning details will be developed and provided to the CEC when the time for permanent closure is closer and more information is available." While the specific details of decommissioning activities are appropriately deferred to a later date, staff needs general information now as to how the decommissioning plan will ensure environmental protection for biological resources.

DATA REQUESTS

24. Please describe the goals and general elements of a closure plan that would provide environmental protection for special status species and other biological resources.
25. Please include a description of the funding and legal mechanisms needed to achieve the stated goals of the closure plan with respect to biological resources, both at the end of operations or in the event of unanticipated circumstances, such as a bankruptcy.

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REFERENCES

Haug, E. A., B. A. Millsamp, and M. S. Martell. 1993. Burrowing Owl (*Speotyto cunicularia*), in the Birds of North America (A. Poole and F. Gill, eds.), no. 61. Acad. Nat. Sci., Philadelphia.

Luz Solar Partners VIII & IX Ltd. 2007. Biological Resources Mitigation Implementation Plan Third Quarter 2007 Compliance Report for the SEGS VIII and IX Project Area, Harper Lake, California. October 19, 2007. Submitted to California Energy Commission.

Molina, K. C and K. L. Garrett. 2004. Snowy Plover – Species Account. Final Environmental Impact Report and Statement for the West Mojave Plan. U.S. Dept of Interior, Bureau of Land Management. Moreno Valley, California. December 2004.

Shuford, W. D., and Gardali, T., editors. 2008. California Bird Species of Special Concern: A ranked assessment of species, subspecies, and distinct populations of birds of immediate conservation concern in California. Studies of Western Birds 1. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento.

USFWS. 2008. Final Environmental Assessment to Implement a Desert Tortoise Recovery Plan Task: Reduce Common Raven Predation on the Desert Tortoise. March 2008.

**BEACON SOLAR ENERGY PROJECT
(08-AFC-02)
Data Request**

Technical Area: Cultural Resources

Authors: Michael McGuirt, Dorothy Torres, and Michael Lerch

Any information that identifies the locations of archaeological sites must be submitted under confidential cover.

BACKGROUND

Energy Commission siting regulations require the solicitation of information from the Native American Heritage Commission on Native American sacred sites and of contact information for Native Americans interested in the project vicinity (20 CCR Chapter 5 (§§ 1701–2031), Appendix B(g)(2)(D)). Contact was made by EDAW with the Native American Heritage Commission (NAHC) on November 5, 2007, and the NAHC responded on November 8, 2007, with a list of seven Native American groups and individuals with known interest in the project area. People on this list were then contacted by EDAW on November 20, 2007 (Table 4, *Beacon Solar Energy Project Archaeological Resources Report, Kern County, California* (Apple and Glenny 2008)). They were contacted again on February 29, 2008 (Attachment 3, Archaeological Resources Report), with a request that they respond by December 7, 2007. As of the date of the Archaeological Resources Report, no responses from the Native Americans who were contacted had been received.

DATA REQUEST

26. To allow staff to more fully consider Native American concerns, please provide copies of any correspondence or records of any telephone calls documenting responses from Native American contacts that have been received since March 2008.

27. Please provide copies of any new correspondence as it is received.

BACKGROUND

Energy Commission siting regulations require the identification of cultural resources that any local historical or archaeological society, or museum recognize (20 CCR Chapter 5 (§§ 1701–2031), Appendix B(g)(2)(B)). Contact was made by EDAW with seven local historical societies or museum on November 29, 2007 (Table 5, Archaeological Resources Report) and on March 5, 2008 (Attachment 3, Archaeological Resources Report), with a request that they respond by December 14, 2007. As of the March 2008 dates of the Archaeological Resources Report and the *Beacon Solar Energy Project Historic Architectural Resources Report, Kern County, California* (Hirsch 2008), one response from the Historical Society of the Upper Mojave Desert had been received.

DATA REQUEST

28. To allow staff to more fully consider the concerns of local historical and archaeological societies, and museums, please provide copies of any correspondence or records of any telephone calls documenting responses from contacts that have been received since March 2008.

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BACKGROUND

The Historic Architectural Resources Report indicates (p. 17) that part of the archival research involved review of various topographic maps of the project area dated from 1923, 1943, 1947, 1951, and 1956. Historic aerial photographs were searched for at several repositories, although apparently none were found.

DATA REQUEST

29. To enable staff to complete its review of historic structures in the project area, please provide copies of the topographic maps that were examined, as well as any aerial photographs of the area that may be available.

BACKGROUND

The archaeological survey of the project area and associated linear corridors identified 39 prehistoric sites and 59 prehistoric isolates, along with 6 dual-component sites (pp. 31 and 32, Archaeological Resources Report). Of these, 14 sites with prehistoric components are identified as “potentially eligible” for listing in the California Register of Historical Resources (California Register) (Table 6, Archaeological Resources Report). Proposals for the archaeological excavation of the prehistoric components of 7 of those sites were agreed to in a conference call between Energy Commission staff and representatives of the applicant on February 28, 2008 (February 28, 2008 Report of Conversation, TN 46670), and recommendations to investigate 10 of the sites with prehistoric components are made in the Archaeological Resources Report (Table 8).

DATA REQUEST

30. To enable staff to complete its review of the project’s potential to affect California Register-eligible prehistoric site components, please provide the results of the excavation program agreed to on February 28, 2008 (February 28, 2008 Report of Conversation, TN 46670).
31. Please clarify why the evaluations of the prehistoric components at the remaining 7 sites considered “potentially eligible” for listing in the California Register (Table 6) do not appear to have been concluded.

BACKGROUND

The pedestrian survey of the project area and associated linear corridors identified 14 historic period archaeological sites, along with 6 dual-component sites (pp. 31 and 32, Archaeological Resources Report). Of these, 6 sites are identified as potentially eligible for listing in the California Register (Table 6, Archaeological Resources Report). Proposals for the archaeological excavation of the historic components of 3 of those sites were agreed to in a conference call between Energy Commission staff and representatives of the applicant on February 28, 2008 (February 28, 2008 Record of Conversation), and recommendations to investigate 2 of the sites with historic components are made in the Archaeological Resources Report (Table 8).

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DATA REQUEST

32. To enable staff to complete its review of the project's potential to affect California Register-eligible historic site components, please provide the results of the excavation program agreed upon on February 28, 2008.

BACKGROUND

Subsections 2.5.1 and 2.5.6 of the AFC enumerate the various components of the generating facility for the proposed project and provide a limited set of construction specifications for them. The given construction specifications impart a general sense of the areal extent of the proposed generating facility over the surface of the project area, but provide no information on the depth of the ground disturbance that the construction of the facility would entail. Staff needs information on the maximum depth of the ground disturbance that would result from construction of the generating facility, to be able to assess the potential to substantially and adversely change the significance of historical resources that may lie buried in the project area.

DATA REQUEST

33. Please provide a table that enumerates the maximum depth that one would reasonably anticipate needing to construct each of the components of the generating facility enumerated in subsection 2.5.1 of the AFC.

BACKGROUND

The construction of the Beacon Solar Energy Project would entail large scale modifications to the topography of the overall project area and relatively deep ground disturbance to construct individual project components. Subsection 2.5.6.6 notes that the proposed re-route of Pine Tree Creek would involve the creation of approximately 14,000 linear feet of new stream channel that would average 8 feet in depth and vary from 345 to 2,900 feet in width (approximately 1,400,000 cubic yards of earthwork for average channel depth and 345 foot channel width). Subsection 2.5.6.6 later explains that the construction of the project would include the mass grading of the project area for a total volume of approximately 5,160,000 cubic yards. Subsection 2.6 describes the construction of the natural gas pipeline that would fuel the generating facility. The specifications for the proposed 17.6-mile pipeline trench are given as being approximately 4 feet in width and 4 to 10 feet in depth (approximately 55,000 cubic yards of excavation for a 4-foot wide trench 4 feet deep). The construction of the proposed project would result, minimally, in the movement of 6,600,000 cubic yards of earth, in addition to the presently unknown volume of earth that the construction of the generating facility would require.

The Cultural Resources section of the AFC, section 5.4, and the Archaeological Resources Report provide no information on the potential for the construction of the project to truncate archaeological deposits that may lie buried beneath the surface of the project area. Archaeological deposits there may be associated with the Quaternary alluvial and lake bed units known to underlie the project area (pp. 5.9-5 and 5.9-6, AFC). These deposits may be too deep to present surface manifestations, and may yet

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be within reach of construction impacts. Staff needs finer resolution information on the age, the structure, and the character of the geologic units beneath the surface of the project area, to be able to evaluate the project's potential to substantially and adversely change the significance of historical resources that may lie buried in the project area.

DATA REQUEST

34. Please provide a discussion of the historical geomorphology of the project site to better evidence a consideration of the potential there for buried archaeological deposits. The discussion should describe the development of the alluvial landforms and the lake bed deposits on which the project area is proposed with a focus on the character of local depositional regimes since the Late Pleistocene era. The basis for the discussion should be data on the geomorphology, sedimentology, pedology, and stratigraphy of the project area or the near vicinity. The source of these data may be a combination, as necessary, of extant literature or primary field research.

BACKGROUND

The construction of the project may produce a stark visual intrusion in the portion of Fremont Valley southwest of the Koehn Lake playa and southeast of the southern terminus of the Sierra Nevada Mountains. The Cultural Resources section of the AFC, section 5.4, and the Archaeological Resources Report do not consider whether the project has the potential to affect Native American traditional use areas that may be in sight of the proposed facility, principally any such areas that may be present in the adjacent mountains. Staff needs additional information to evaluate the proposed project's potential to adversely impact potentially significant ethnographic resources.

DATA REQUEST

35. Please provide a discussion, on the basis of extant literature and Native American informants, of known traditional use areas such as rock art sites, shrines, or gathering places that are in sight of the project and that may be subject to the project's visual intrusion., If no such areas exist in sight of the project, please provide a discussion to that affect.

**BEACON SOLAR ENERGY Project
(08-AFC-02)
Data Request**

Technical Area: Socioeconomics

Author: Marie McLean

BACKGROUND

As indicated on Page 5.11-6 of the Application for Certification (AFC), Housing, 12 hotels and motels are available in the vicinity in which construction workers could stay.

DATA REQUEST

36. Please indicate the total number of rooms available in those 12 hotels and the estimated number of construction workers that may be expected to use those rooms.

BACKGROUND

As indicated on Page 5.11-10 of the AFC, Fire Protection, fire protection services would be provided by the Kern County Fire Department, Station 12 and Station 14. If hazardous materials were involved, Station 66, the nearest station to the project site, would provide services. Station 66 is located in Bakersfield, 70 miles west of the project site.

DATA REQUEST

37. Please provide the average response time to the project site by Station 12, Station 14, and Station 66.

BACKGROUND

As indicated on Page 5.11-10 of the AFC, Fire Protection, through dispatch services provided by the Kern County Fire Department, the California City Fire Department would provide emergency medical services to the project site.

DATA REQUEST

38. Please provide the average response time to the project site by the California City Fire Department.

BACKGROUND

As indicated on Page 5.11-24 of the AFC, Employment and Economy, the construction payroll has been estimated at \$165 million. However, the operational payroll was not included in the AFC.

DATA REQUEST

39. Please provide the amount of the operational payroll.

BACKGROUND

As indicated on page 5.11-25 of the AFC, Employment and Economy, during the construction phase of the project, the project's indirect income was estimated to be \$55

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million and the induced income, \$69 million. However, the amount of the indirect and induced income for the operation of the project was not included in the AFC.

DATA REQUEST

40. Please provide the estimated amount for the indirect and induced income per year for the operational life of the project.

BACKGROUND

As indicated on Page 5.11-25 of the AFC, Employment and Economy, the number of indirect jobs created by the construction of the project was estimated to be 118 workers and the number of induced jobs, 180 workers. However, an estimate of the number of indirect and induced jobs from the operation of the project was not included.

DATA REQUEST

41. Please provide the estimated number of indirect and induced jobs resulting from the operation of the project.

BACKGROUND

As indicated on Page 5.11-30 of the AFC, Cumulative Impacts, two projects have been identified in the area, the Pine Tree Wind Development Project and the Barren Ridge-Castaic Transmission Project. Both are projects of the Los Angeles Department of Water and Power (LADWP). According to LADWP, construction on the Barren Ridge-Castaic Transmission Project is expected to begin in late 2010 and will continue through the first quarter of 2014. Consequently, the socioeconomic impacts of the transmission project's construction would overlap with the Beacon Solar Energy Project's construction.

In addition, according to LADWP, construction on the Pine Tree Wind Development Project began in early 2008; and the plant will be operational by early 2010. According to the Socioeconomics section of *Findings of No Significant Impact – FONSI (40 CFR 1508.13)*, prepared by the Bureau of Land Management for the project, LADWP has agreements with a number of motels in the area to temporarily house workers.

DATA REQUEST

42. Please assess the impact of those two projects, including the temporary housing agreements for Pine Tree Wind Development, on the availability of temporary housing for workers on the Beacon Solar Energy Project.

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Data Request**

Technical Area: Soils

Author: Casey Weaver

BACKGROUND

The Beacon site is traversed by a dry wash named Pine Tree Creek. Pine Tree Creek conveys water only following substantial rain events occurring in the Transverse Range located to the southwest of the site. The maximum flow recorded from Pine Tree Creek was 7,500 cubic feet per second (cfs) in 1978. It is estimated that during the 100 year storm, flow in Pine Tree Creek could approach 20,000 cubic feet per second. To accommodate the planned use of the site, the applicant is proposing to reroute a reach of the creek around the south eastern corner of the property. The proposed realignment involves intercepting the northward trending flow into a trapezoidal shaped channel, immediately redirecting the flow from its initial northerly course to a direction due east, then directing the flow back to due north, requiring a 90 degree turn.

DATA REQUEST

43. The redirecting of Pine Tree Creek through two 90 degree turns may result in significant erosion during high flow and flood events. Please provide the rationale for selecting this potentially problematic alignment.
44. Please provide design information showing this configuration is suitable for the anticipated flows. Please discuss other alternate alignments that were considered.

BACKGROUND

Mass grading is proposed for the entire site. As much as 5.16 million cubic yards of soil will be moved. This grading will eliminate the topographic expression of the Cantil fault (25 feet high fault scarp) by cutting the upthrown side of the fault (south side) and placing the cut soils onto the downthrown (north) side of the fault. This grading will result in a planar surface sloping 1 to 1.5 percent to the northeast. It is estimated that five to ten million gallons of water will be used each day for 110 days (3,375.8 acre feet) to suppress dust generation and to aid with soil moisture conditioning required for adequate soil compaction.

DATA REQUEST

45. Please provide plans or maps that clearly show:
 - a. the existing (predevelopment) site conditions;
 - b. the conceptual grading plan that identifies all cut and fill areas;
 - c. the sequence of grading from initial clearing and grubbing to final grade;
 - 1) which areas of the site will be developed first, according to the above sequencing;
 - 2) how long each 15-acre section will take to be graded;

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- d. whether complex areas, such as Pine Tree Creek, will require more extensive cutting and filling and more overall time for grading;
- e. the construction phase erosion control measures proposed to mitigate erosion/sedimentation hazards; and
- f. the post construction drainage plan.

BACKGROUND

Site development will include mass grading with large cuts and deep fills. Soils suitable for compaction will be temporarily stored at designated locations. Material unsuitable for compaction will be stockpiled and disposed of at a suitable location.

In the draft Drainage Erosion Sediment Control Plan, it is indicated that the equipment laydown area will occupy an area 400 feet by 1,000 feet, construction material laydown area will occupy an area 400 feet by 800 feet, a parking area will accommodate 40 pieces of construction equipment, another parking area will accommodate 400 vehicles, and various temporary structures will be situated on the site.

DATA REQUEST

- 46. Please provide a map that clearly shows where soils suitable for compaction will be stored and provide a description of how these soils will be protected from erosion.
- 47. a. Please provide an appropriately scaled map that clearly shows where materials that are unsuitable for compaction will be stored and provide a description of how these materials will be protected from erosion.
 - b. Please explain the rationale for determining when these unsuitable materials will be removed from the site.
 - c. Explain the methods expected to be used to load and transport these materials from the site.
- 48. Please provide the construction schedule/sequence for preparing these areas for their proposed use.

BACKGROUND

The project proposes using natural gas as fuel for the boilers used for freeze protection. Natural gas will be conveyed to the plant via underground pipelines. The underground natural gas pipeline is proposed to cross California City Boulevard in downtown California City.

The AFC did not provide discussion on how the underground pipeline will be installed beneath this roadway.

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DATA REQUEST

49. Please provide a description of the methodology proposed for subsurface crossing of underground pipelines beneath roadways. The description should provide the excavation method, and address soils handling and erosion control, and provide a contingency should groundwater be encountered.

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Data Request**

Technical Area: Transmission System Engineering

Author: Sudath Arachchige and Mark Hesters

INTRODUCTION

Staff needs to determine the system reliability impacts of the project interconnection and to identify the interconnection facilities including downstream facilities needed to support the reliable interconnection of the proposed Beacon Solar Energy Project (Beacon). The interconnection must comply with the Utility Reliability and Planning Criteria, North American Electric Reliability Council (NERC) Planning Standards, NERC/Western Electricity Coordinating Council (WECC) Planning Standards, and California Independent System Operator (California ISO) Planning Standards. In addition the California Environmental Quality Act (CEQA) requires the identification and description of the “Direct and indirect significant effects of the project on the environment.” For the compliance with planning and reliability standards and the identification of indirect or downstream transmission impacts, staff relies on the System Impact Study (SIS) and Facilities Study (FS) as well as review of these studies by the agencies responsible for insuring the adjacent interconnecting grid meets reliability standards, in this case, the Los Angeles Department of Water and Power (LADWP), Southern California Edison Company (SCE) and/or California ISO. The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause the transmission to violate reliability requirements the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include modification and construction of downstream transmission facilities. CEQA requires environmental analysis of any downstream facilities for potential indirect impacts of the proposed project.

BACKGROUND

Staff requires the SIS and FS to identify potential downstream transmission facilities that may be required due to interconnection of the Beacon project to the California ISO grid and to determine the interconnection would comply with the NERC/WSCC and/or Utility Reliability and Planning Criteria.

DATA REQUESTS

50. Please submit a complete SIS report in coordination with LADWP, SCE, and approved by the California ISO, for interconnection of the Beacon project at a nominal output of 250MW. The study should include a power flow, short circuit and transient stability analyses with a mitigation plan for any identified reliability criteria violations. In the report list all major assumptions in the base cases including major path flows, major generations including queue generation and loads in the area systems. Also identify the reliability and planning criteria utilized to determine the reliability criteria violations.

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51. Please provide power flow diagrams with and without the Beacon project for base cases. Power flow diagrams should also be provided for all overloads or voltage criteria violations under normal system (N-0) or contingency (N-1 & N-2) conditions
52. Please provide electronic copies of *.sav, *.drw, *.dyd and *.swt GE PSLF files and EPCL contingency files in a CD (if available).
53. Please provide the expected date, after contacting the California ISO, when the final interconnection approval letter from the California ISO would be issued.

**BEACON SOLAR ENERGY Project
(08-AFC-02)
Data Request**

Technical Area: Waste Management

Author: Ellie Townsend-Hough

BACKGROUND

Three Phase I Environmental Site Assessments (ESAs) were provided to staff in Appendix I. The Phase I ESA for the Fremont Valley Ranch reported on 2,273 acres of largely vacant land that was disturbed from past agricultural activity, which occurred up to the early 1980s. The other ESAs describe 80-acre and 14.39-acre parcels. The Fremont Valley Ranch ESA lists several recognized environmental concerns. The ESA notes that abandoned wells, buildings, and underground tanks are currently in place on the Fremont Valley Ranch. The Beacon Solar Energy Project (BSEP) Application for Certification (AFC) states the project will not use the entire Fremont Valley Ranch and the recognized environmental concerns are not part of the project (Section 5.16.2.3). To complete its Waste Management analysis, staff needs information that outlines the boundaries of the proposed project in relationship to the three Phase I ESAs in Appendix I, and information verifying that the locations of any recognized environmental conditions are outside the proposed project site.

DATA REQUEST

54. Please provide one map that delineates the Fremont Valley Ranch and the 80-acre and 14.39-acre parcels. Please indicate on the map which portions of each property are included as part of the BSEP site.
55. Please provide a map of the Fremont Valley Ranch. Please identify on the map the recognized environmental conditions, include buildings, irrigation wells and underground storage tanks.

BACKGROUND

Section 2.6.2 of the Application for Certification describes the construction of the 17.6-mile natural gas pipeline. Although Southern California Gas Company is responsible for the construction of the pipeline, BSEP cannot operate without the pipeline. Also the applicant is responsible for the parking and laydown areas needed during construction of the pipeline, and the hydrostatic testing of the pipeline. A Phase I ESA should be conducted and provided to staff for the entire length of the proposed natural gas pipeline.

The following types of businesses warrant investigation if they are located on, adjacent, or in proximity to the proposed linear facility routes. Proximity is defined as within a path of migration from these businesses.

- a. Automobile dealerships, maintenance/repair, and storage and salvage lots.
- b. Golf courses (fertilizers and pesticides).
- c. Machine/equipment/appliance servicing operations.

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- d. Commercial printing operations.
- e. Oil distribution facilities.
- f. Any industry engaged in the storage /transport /disposal of hazardous waste or the use of hazardous materials.
- g. Schools, daycare centers and hospitals.

DATA REQUEST

56. Please provide a Phase I ESA for the 17.6-mile underground natural gas pipeline corridor. The Phase I ESA should be conducted in accordance with American Society for Testing and Materials (ASTM) E 1527-05 guidelines. The ESA should indicate if the natural gas pipeline crosses the following types of properties and identify whether there are any environmental concerns related to these land uses.
- a. Property where contamination is known, or suspected at an up-gradient or adjoining site.
 - b. Property, which is, or has been used for industrial/manufacturing purposes. Adjoining property with this type of usage should also be included in the investigation.
 - c. Property for which any prior environmental investigation indicated the potential for contamination.
 - d. Property displaying evidence of hazardous waste storage on site, whether permitted or not. For example, the existence of a former dry cleaner or gas station, which utilized underground or above ground storage tanks. Agricultural properties, where pesticides were stored/mixed and potentially released, should also be investigated.
 - e. Property with visible staining.
 - f. Property where contaminants exceeding drinking water standards have been detected.
 - g. Property where state/federal agency notices of violation have been issued.
 - h. Property on which equipment containing polychlorinated biphenyls (PCB) was stored.
 - i. Property where fill dirt has been brought that has, or may have originated from a contaminated site.
 - j. Property with known or suspected discharges of wastewater (other than storm-water and sanitary waste) into a storm water drain.

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- k. Property with an environmental lien on it (imposed either by CERCLA 42USC / 9607(1) or similar state and local laws).
- l. Property along existing or past railroad tracks.
- m. Properties where there have been agricultural activities.

BACKGROUND

Solid waste generated during operation of the power plant is likely to include soils contaminated with Heat Transfer Fluid (HTF) from possible spills and leaks in the HTF system. Section 1.4.15 states that any heat transfer fluid-contaminated soil will be managed in onsite waste management units permitted by the Lahontan Regional Water Quality Control Board. The Application for Certification outlines management of HTF-contaminated soil based on potential HTF concentrations in the soil. In the event of an accidental spill or leak, two types of onsite soil treatment are planned: land farming for soils with concentrations under 1,000 milligrams per kilogram (mg/kg) and bioremediation for soils with concentrations between 1,000 and 10,000 (mg/kg) (BSEP Sections 2.5.5.5 and 5.16.3.2). Soils with concentrations above 10,000 mg/kg would be shipped off site for disposal at a permitted Class I Hazardous Waste landfill. The May 2008 Draft Application/Report of Waste Discharge, that would be submitted to the Lahontan Region California Regional Water Quality control Board, only describes on-site land farming and omits discussion of bioremediation.

DATA REQUEST

- 57. Please describe why apparently bioremediation will no longer be necessary to treat soil contaminated with 1,000 to 10,000 milligrams per kilogram of HTF.

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Data Request**

Technical Area: Water Resources

Author: Casey Weaver

BACKGROUND

Section 5.17.2.7 discusses groundwater geochemistry. In general, total dissolved solid (TDS) concentrations in groundwater increase from around 500 milligrams per liter (mg/l) at the project site to as high as 100,000 mg/L in the vicinity of Koehn Lake. TDS isoconcentrations are provided on Figure 5.17-11 and indicate groundwater with TDS over 5,000 mg/L is located about five miles to the east-northeast of the site. Water with TDS levels above 1,500 mg/L is generally considered non potable.

DATA REQUEST

58. Please provide an explanation why available non potable water was not considered as an alternative water source for power plant cooling needs.

BACKGROUND

Section 5.17.2.6 presents information regarding project water supply wells on the plant site. The majority of the wells were used for agricultural operations. It is stated that turbine pumps were installed in each of the wells with pump bowls set at depths between 350 and 450 feet below ground surface (bgs). Table 5.17-5 identifies the ground surface elevation adjacent to each of the wells, the total well depth, the screen interval and the specific capacity measured in 1980 for most of the wells. The footnote for total well depth indicates that Switzer (2007) provided the well depths. The footnote for the top of screen depth indicates that the top of the screen was measured in three of the 15 on-site wells. The footnote indicates that Switzer (2007) reported that the top of the screen in all wells was between 300-400 feet bgs. However, two of the three wells videotaped had screen depths either shallower than reported (Well No. 48, 250 ft bgs) or deeper (well No. 63, 500 ft bgs). There is no indication how the bottom of the screens were measured.

The well construction details indicate that Well No. 63 extends to a depth of 1,740 feet bgs. However, the table indicates that when measuring well depths in 2007, well No. 63 was blocked by debris at a depth of 900 feet bgs. Text indicates that the saturated thickness in the onsite wells is between 200 and 1,500 feet. However, the deepest well was measured to a depth of 903 feet bgs (Well No. 50) and depth-to-water measurements were not provided.

DATA REQUEST

59. Please explain the methodology and equipment used to measure the water levels in the wells. In the explanation, please indicate where the measuring reference point is located and how that elevation was determined.

60. Please describe how Switzer determined the screen intervals and the depths of the wells.

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61. Please reconcile Switzer's data based on his reporting of the top of screen depths in all wells to be between 300 and 400 when the video logs in 2 of the 3 wells videotaped showed the wells to be 50 feet shallower and 100 feet deeper than what Switzer reported.
62. Please explain how the depth to the bottom of the screen in well No. 63 was determined.

BACKGROUND

On page 5.17-17, it is stated that a Phase I Environmental Site Assessment prepared in 2007 provided aquifer information resulting from a short term pumping test conducted in 1980. During the 1980 pumping test, site wells were pumped at rates between 500 to 1,693 gallons per minute (gpm) to evaluate pump efficiency. Drawdown measured in the pumping wells ranged between 9 and 168 feet. The AFC indicates that the highest specific capacities were measured in wells 41, 47, 48 and 49, but it does not indicate which wells were the pumping wells, which wells were observation wells or what the conclusion of the test was.

DATA REQUEST

63. Please provide detail on the 1980 test:
 - a. describe how each well was used in the test;
 - b. explain what was measured in each well; and
 - c. provide the conclusions of the test.
64. Please provide a copy of the report for the 1980 short term pumping test.

BACKGROUND

Section 5.17.2.6 discusses aquifer properties. One of the properties discussed is specific yield. It is stated that specific yield of the Koehn Sub-basin is about 0.11 percent. It is likely that the value presented is misidentified and the intention was to indicate the specific yield is 11 percent.

DATA REQUEST

65. Please clarify what the correct value is for specific yield of the Koehn Sub-basin.

BACKGROUND

On page 5.17-18, it is stated that "monitoring of pumping across the Cantil Valley Fault to the east of the plant site could not be performed as access to the closest adjacent offsite water supply well could not be arranged." Additionally, it is stated that, "based on the cone of depression that developed after pumping well nos. 43 and 48 for 72 hours, offsite wells north and east across the Cantil fault were likely not affected during the period of the test." However, on page 5.17-19, it is stated that "the development of the

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cone of depression and elongation parallel to the Cantil Valley Fault, suggest that the fault is a partial boundary to groundwater flow...”

Figures 5.17-3, 5.17-4 and 5.17-5 depict groundwater conditions at and around the project site. These figures do not indicate a groundwater boundary condition along the Cantil Fault. However, the groundwater model that was developed to predict drawdown during site development and project operation (Figures 5.17-16, 5.17-17 and 5-17.18) clearly show a distinct boundary to flow across the fault.

DATA REQUEST

66. Given the inaccessibility to the wells on the east side of the Cantil Valley Fault, please explain how the elongate cone of depression was determined.
67. Please provide the evidence that was evaluated to arrive at the statement that offsite wells located north and east across the Cantil fault were “likely not affected during the period of the test”.
68. Please explain why the groundwater model identifies a significant boundary to flow across the Cantil fault and how that condition was determined.

BACKGROUND

Page 5.17-22 and Figure 5.17-12 of the AFC indicate that the project site lies within the Antelope Valley-East Kern (AVEK) water district. It is stated that AVEK “currently does not use groundwater from this basin” and imports water exclusively from the California Aqueduct as part of the State Water Project (SWP) for the Antelope and Fremont Valley region. However, in the discussion regarding California City, it is stated that the California City water supply is largely from groundwater that is pumped from five wells located in the City’s central area or “First Community”. Further, the section references a study conducted by Quad Knopf (2002) that recommended the installation of four to five new wells in the California City vicinity to satisfy needs of future community development. In addition, Figure 3.7 in Appendix J indicates that the water table in the California City area is dropping between 0.21 and 1.25 feet per year, indicating an overdraft condition in that area.

DATA REQUEST

69. The project site is located within AVEK service boundaries. Please discuss the potential for AVEK’s future use of groundwater in the area.
70. California City is currently in an overdraft condition. Quad Knopf determined that projected growth will require additional water and the installation of additional wells is recommended. Please discuss the project’s consumptive use of potable groundwater and the effect this use would have on the adjacent community.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE
STATE OF CALIFORNIA

**APPLICATION FOR CERTIFICATION
For the *BEACON SOLAR ENERGY
PROJECT***

Docket No. 08-AFC-2

**PROOF OF SERVICE
(Revised 5/22/08)**

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-9
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DECLARATION OF SERVICE

I, April Albright, declare that on June 16, 2008, I deposited copies of the attached Beacon Solar Energy Project (08-AFC-2) Data Requests 1 Through 70 in the United States mail at with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.

Original signature in Dockets
April Albright