

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov



December 2, 2008

DOCKET
08-AFC-5

DATE DEC 02 2008

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Robert B. Liden,
Executive Vice President
SES Solar Two, LLC
2920 E. Camelback Road, Ste. 150
Phoenix, AZ 85016

**RE: STIRLING ENERGY SYSTEMS SOLAR TWO PROJECT (08-AFC-5) - DATA
REQUESTS SET 1, PART 2 (#s 53-127)**

Dear Mr. Liden:

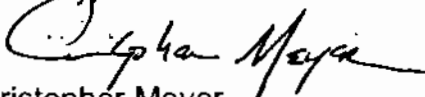
Pursuant to Title 20, California Code of Regulations, Section 1716, the Bureau of Land Management (BLM) and California Energy Commission (Energy Commission) staff seek the information specified in the enclosed data requests. The information requested is necessary to: 1) more fully understand the project, 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.

Part 2 of this set of data requests (#53-127) is being made in the areas of Air Quality (#53-110) and Cultural Resources (#111-127 and BLM appendix). In order to address these issues at the December 18, 2008 Data Response and Issues Resolution Workshop, written responses to the enclosed data requests and BLM appendix are due to the BLM and Energy Commission staff on or before December 9, 2008, as agreed to by the applicant, or at such later date as may be mutually agreeable.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, you must send a written notice to both the Committee and me within 20 days of receipt of this notice. The notification must contain the reasons for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, Section 1716 (f)).

If you have any questions, please call me at (916) 653-1639 or email me at cmeyer@energy.state.ca.us.

Sincerely,


Christopher Meyer,
Project Manager

Enclosure

cc: Docket (08-AFC-5)
Proof of Service List

PROOF OF SERVICE (REVISED 11/26/08) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 12/2/08

MF

Technical Area: Air Quality
Author: William Walters

BACKGROUND: BASELINE SITE CONDITIONS

In order to evaluate the air quality impacts from this project the baseline conditions of the project needs to be understood.

DATA REQUEST

53. Please describe the types of activities that emit combustion and fugitive dust emissions on the site currently and the quantities of those emissions that occur from those activities.
54. Please describe whether those activities will be permanently discontinued when the project is completed and estimate the reductions from the current onsite baseline emissions.

BACKGROUND: CONSTRUCTION EMISSIONS - VEHICLE USE ASSUMPTIONS

Staff has questions regarding the validity of the vehicle use assumption used in the construction emission estimate, including the assumptions for unpaved road trip distance. The information provided by the applicant in the Application for Certification (AFC) is not adequate to complete an assumption validity review. For example, the trip estimates for heavy trucks have been lumped into a single line item that notes concrete, soil, water, and dump trucks, but does not explicitly note SunCatcher materials delivery trips. Additionally, the round trip distance of 40 miles for heavy trucks does not seem consistent with all of the necessary finished (SunCatcher components, transmission cables, etc) material deliveries. Also, the unpaved road travel assumptions only include off-road equipment, none of which could deliver the necessary raw (concrete, water, etc.) and finished materials to the individual SunCatcher sites and otherwise as necessary to complete the construction throughout this very large site. Staff needs more information regarding the heavy vehicle trip estimates, and needs the applicant to revise the emission estimates to include the emissions associated with truck deliveries within Imperial County and to include the unpaved road travel necessary for site construction. Quantification of these construction delivery truck emissions are also required under the General Conformity regulations discussed in later air quality data requests.

DATA REQUEST

55. Please describe for a routine daily construction schedule the location of where the following construction materials will originate:
 - a. Water for fugitive dust abatement or other construction purposes,
 - b. Concrete for SunCatcher footings (if concrete footings used),
 - c. Stirling Engines for the SunCatchers,
 - d. SunCatcher metal support structures,
 - e. SunCatcher mirrors.
 - f. Any other raw or finished material, or waste stream, that would require more than ten truck trips per month.

56. For each of the materials delivery/waste removal truck trip types requested in Data Requests 55a through 55f, please provide the following information:
 - a. The types of delivery trucks that will be used to deliver these materials,
 - b. The number of delivery trucks on a daily basis for each of these materials, and
 - c. The number of miles traveled roundtrip daily for each vehicle within Imperial County for each of these materials.
57. Based on the calculations of truck types, number of vehicles and vehicle miles traveled within Imperial County of Data Request 4, please provide the daily criteria pollutant emissions associated with these truck emissions.
58. Please describe the feasibility of significant materials deliveries, especially for the SunCatcher materials, by the rail line located on the north side of the project site. Also include in this discussion that if the current rail line is not in a usable condition for rail deliveries, what measures would need to be taken to upgrade the rail line to a usable condition.
59. Please estimate the on-site unpaved road travel and corresponding unpaved road particulate emissions for all on-road construction vehicles, including employee vehicles, heavy haul delivery vehicles, crew trucks, etc. necessary to complete the construction activities throughout the project site. If the unpaved road travel increases the overall on-road vehicle travel lengths then also please estimate the additional on-site tailpipe emissions from these vehicles.
60. Please revise AFC tables 5.2-20 and 5.2-21 to reflect the additional emissions associated with construction as requested in data requests 58 and 60.

BACKGROUND: OPERATING EMISSIONS - VEHICLE MITIGATION MEASURES

AFC air quality section, subsection 5.2.5.2 only discusses operating emission source mitigation measures in relation to the two emergency engines. However, a large amount of emissions during project operation come from the extensive use of the on-site maintenance vehicles. The estimated criteria pollutant operating emissions, including onsite maintenance emissions and offsite emissions, per megawatt-hour for the proposed project are reasonably comparable to (NO_x, VOC) or even exceed (PM₁₀, PM_{2.5}) the exhaust emissions from large combined cycle gas turbine projects. Staff is concerned that the criteria pollutant air quality benefit of the proposed project's solar energy production is being offset by these significant maintenance emissions. Staff needs to understand what mitigation can be applied to reduce emissions from these emission sources.

DATA REQUEST

61. Please identify the mitigation measures that are proposed to limit on-site operating maintenance vehicle tailpipe emissions, such as only buying new vehicles that meet California vehicle emission standards.
62. Please identify why electric vehicles cannot be used in the place of diesel or gasoline on-site maintenance vehicles.

63. Please identify why alternatively fueled vehicles with reduced emission profiles, cannot be used in place of diesel or gasoline on-site maintenance vehicles. In particular considering the hydrogen needs of the solar dish equipment, it would appear that hydrogen fueled equipment might be a reasonable emission reduction alternative.

BACKGROUND: LRU MAINTENANCE TRUCKS

Another large source of emissions from the project site is the approximately 20 line replacement unit (LRU) maintenance trucks that are used off-site. Staff could not find a description of the purpose of this rather large fleet of vehicles and thus needs additional information as to their function and determine whether viable alternatives exist that could reduce the potential for emissions.

DATA REQUEST

64. Please explain the purpose and function for the LRU maintenance trucks.
65. Please describe why an on-road (and thus less emitting) vehicle could not be employed to provide the services necessary rather than the assumed off-road LRU vehicle that is being proposed in the AFC.

BACKGROUND: OPERATING EMISSIONS - VEHICLE USE ASSUMPTIONS

Staff cannot determine how the number of on-site operating vehicles and their daily use were derived. Staff needs to understand these variables to ensure that the operating emissions are adequately determined.

DATA REQUEST

66. Please describe the assumptions used to determine the number of operating maintenance vehicles and their daily paved and unpaved vehicle miles traveled.
67. Please describe in greater detail the specific design of the diesel-fueled water tanker trucks that will be used to clean the SunCatcher dishes. Describe whether water will be towed behind the vehicle or whether the water tanks and the cleaning apparatus equipment will somehow be attached to the vehicles.
68. Please describe the SunCatcher dish washing requirements including:
- a. How the dishes are washed, both for normal and mechanical washes;
 - b. Time of day for washing;
 - c. How long it takes each dish to be washed;
 - d. How many dishes can be washed per hour or shift for each mirror washing tanker truck crew;
 - e. The size of each wash crew; and
 - f. The basis for the need to wash each dish monthly.

69. The fugitive dust control method is specified as watering of paved and unpaved roads; and the only water trucks are noted to be those for dish washing and that water would be demineralized water while the dust suppression water would be raw water. Please identify why no fugitive dust water tanker trucks are identified in AFC Table 5.2-24.

BACKGROUND: FUGITIVE DUST UNPAVED ROAD EMISSIONS CALCULATIONS

Staff is concerned that an older unpaved road dust emission factor calculation method (SCAQMD circa 1993 method versus U.S. EPA AP-42 Section 13.2.2 method circa 2006) was used to determine unpaved road dust emissions. Additionally, the emission calculations assume a very low silt loading (gravel road value) during both construction and operation without an explanation of how this will be ensured considering that Appendix E of the AFC showed silt contents ranging from 8 percent to 55 percent for the near surface soils. Finally, the construction emission calculations use incorrect vehicle weights (such as 0.5 tons for staff cars where an average passenger vehicle is over 2 tons) that need to be corrected.

DATA REQUEST

70. Please identify why the more recent U.S. EPA AP-42 Section 13.2.2 methodology was not used to determine unpaved road dust emission factors.
71. Please identify if the applicant is willing to stipulate to graveling the onsite unpaved roads to reduce the silt loading, or provide surface soils sieve data that shows that the 4 percent silt content assumption is representative of the site.
72. Regardless of the emission factor calculation method used, please correct the vehicle weight assumptions as representative for the vehicle types assumed.

BACKGROUND: FUGITIVE DUST PAVED ROAD EMISSIONS CALCULATIONS

Staff is concerned that an older paved road dust emission factor calculation method (SCAQMD circa 1993 method versus U.S. EPA AP-42 Section 13.2.2 method circa 2006) was used to determine unpaved road dust emissions. Staff believes that the older methodology may significantly overestimate the paved road emissions. For example a comparison of the paved road vs. unpaved road emission factor per mile traveled for passenger vehicles, as listed in Appendix V-4 shows the operations paved road emission factor to be greater than the unpaved road dust emission factor (0.18 lbs/mile for paved road and 0.06 lbs/mile for unpaved roads). Additionally, the emission factors used in the construction and operating emission estimates are different for the same vehicle classes, and staff cannot duplicate the calculation noted to be used for construction trucks on major streets/highways.

DATA REQUEST

73. Please identify why the more recent U.S. EPA AP-42 Section 13.2.1 methodology was not used to determine paved road dust emission factors.
74. Please identify why the paved road dust emission factors for similar vehicle classes are not the same between the construction and operations emission estimates.

75. Please show the calculation, with all input values, used to obtain the 0.149 lb/mile paved road emission factor for heavy truck travel that is shown in Appendix V-2.

BACKGROUND: FUGITIVE DUST EMISSIONS CONTROL – DUST SUPPRESSANTS AND UNPAVED ROAD EMISSIONS

AFC notes in Section 3 that a polymeric dust suppressant may be used to control dust on unpaved roads, and potentially as a replacement for normal road paving binders (asphalt). However, the AFC does not provide information on the specific type of polymeric dust suppressant that would be used, nor does the air quality section specify their use in the emissions calculations. The AFC air quality section assumes a fugitive dust control efficiency of 85 percent for road watering that staff feels, given the very large site and difficulty in effectively watering long unpaved road sections during both construction and operation, is overly optimistic for a watering dust control efficiency, but would be more representative of the use of a polymeric dust suppressant. Additionally, the emission calculations assume no unpaved road emissions for on-road vehicles during construction to get construction materials (concrete, road paving materials, SunCatcher dish components, etc.) distributed as necessary throughout the site, which staff believes would require significant unpaved road travel for this large site. Staff needs more information regarding the specific unpaved and paved road fugitive dust controls that are proposed to be used during site construction and operation.

DATA REQUEST

76. Please identify the specific polymeric dust suppressants by product name and manufacturer that would be proposed to be used to control paved and unpaved road dust emissions.
77. Please specify the extent polymeric dust suppressants will be used, or the extent the applicant is willing to stipulate use, for unpaved road dust control during project construction and operation.
78. Please provide literature on the long-term effectiveness of the specified polymeric dust suppressant use as a paved road binding material.
79. Please defend the selected 85 percent watering dust control efficiency during construction for unpaved roads given the very large site unpaved road network and the seasonally high evaporation and potentially high percolation rates for the applied water.
80. Please defend the selected 90 percent watering dust control efficiency during operations for unpaved roads given the very large site unpaved road network and the seasonally high evaporation and potentially high percolation rates for the applied water.

BACKGROUND: FUGITIVE DUST EMISSIONS CONTROL – PAVED ROADS

The AFC is unclear on the frequency of dust control measures that will be used to reduce the silt loading and subsequent fugitive dust emissions from the project site's paved roads during operation. The AFC under Table 5.2-25 notes that watering of paved roads is assumed; however, the operating mitigation section 5.2.4.2 does not discuss operating vehicle tailpipe or fugitive dust controls. The amount of onsite road

traffic is substantial, so staff needs to clearly understand what the applicant is proposing to control fugitive dust from onsite paved roads in order to confirm the operating emission calculation basis.

DATA REQUEST

81. Please identify the dust control measures that will be used during operation to limit the site's paved road fugitive dust emissions, such as vacuum sweeping, water flushing, track-out controls from adjacent unpaved roads, etc.
82. Please explain and defend the source of the 5 percent control efficiency applied to the on-site paved road dust emission calculations.

BACKGROUND: FUGITIVE DUST EMISSIONS – VEHICLE TRIP LENGTH ASSUMPTIONS - PAVED AND UNPAVED ROADS

The AFC does not provide backup on the methods used to estimate the paved and unpaved road trip distances used in the emission calculations. The assumed trip length values are critical to the PM10 and PM2.5 emission estimates for construction and operation. Staff needs more information to confirm that the assumptions used do not underestimate or overestimate the paved and unpaved travel required for construction and operation, and the corresponding fugitive dust emissions estimates.

DATA REQUEST

83. Please describe how the trip distance assumptions for construction were determined for each vehicle type/use.
84. Please describe how the trip distance assumptions for operation were determined for each vehicle type/use.

BACKGROUND: FUGITIVE DUST EMISSIONS ESTIMATION – EMISSIONS FROM WIND EROSION

The AFC does not appear to provide wind erosion fugitive dust emissions from the large amount of disturbed land during construction and operation. Staff believes that this emission source, if greater than background site conditions, needs to be included in the construction and operation emissions estimate and be included in the construction and operations dispersion modeling impact analysis.

DATA REQUEST

85. Please identify the increase in disturbed land within the project site and within any off-site construction laydown areas during project construction and estimate the corresponding increase in wind erosion fugitive dust emissions at the site.
86. Please identify the increase or decrease in disturbed land within the project site during operation and estimate the corresponding increase in wind erosion fugitive dust emissions at the site.

BACKGROUND: FEDERAL REQUIREMENTS – GENERAL CONFORMITY

The Application for Certification (AFC) does not mention the General Conformity requirements for this project. Due to the project being on BLM lands and requiring BLM approval it is subject to the General Conformity regulations (40 CFR Part 93 Subpart B

§93.150 to §93.160). Based on the emission estimates provided in the AFC, and the serious nonattainment status for PM10, the project's operating PM10 emissions exceed the applicability threshold for General Conformity analysis (70 tons per year) and the construction PM10 emissions are just under the applicability threshold. Staff needs to understand how the applicant plans to complete a conformity determination for the project's operating PM10 emissions and ensure that PM10 emissions from project construction do not exceed 70 tons per year.

DATA REQUEST

87. Please identify methods that will be used to complete a conformity determination for the proposed project's operating PM10 emissions.
88. Please identify the measures and mitigation that will be used to ensure that the proposed project's construction PM10 emissions do not exceed 70 tons per year, or if a revised construction emissions estimate, based on addressing staff's other data requests, indicates that the project's PM10 emissions would exceed 70 tons per year, please identify methods that will be used to complete a conformity determination for the proposed project's construction PM10 emissions.

BACKGROUND: OPERATIONS MITIGATION – EMISSIONS REDUCTIONS

Staff's position for operating emissions CEQA impact determination is that all nonattainment pollutants and their precursors need to be mitigated through emission reductions at a minimum ratio of 1:1. Imperial County is classified as nonattainment for the state ozone, PM10 and PM2.5 standards and federal ozone and PM10 standards. Without proper operating emission reduction mitigation this project could contribute to existing violations of the state and federal ambient air quality standards.

In the AFC the applicant has not proposed to mitigate the project's extensive direct on-site and off-site operating emissions. Additionally, at this time it is unclear if the Imperial County Air Pollution Control District (District or ICAPCD) will be requiring any emission reduction credits for any criteria pollutant emissions. Staff needs additional information as to what the applicant will propose to mitigate the project's emissions of nonattainment and precursor pollutants to address staff's impact concerns.

DATA REQUESTS

89. Please provide a mitigation proposal for the proposed project's direct operating criteria pollutant emissions (annual emissions of 42.4 tons of NOx, 12.6 tons of VOC, and 120.2 tons of PM10, from Table 5.2-25).
90. Please provide written confirmation from the District regarding what criteria pollutant operating emissions that they will require to be mitigated with emission reduction credits.

BACKGROUND: PROJECT CONSTRUCTION AND OPERATION SCHEDULE

In order to evaluate the worst-case air quality impacts from this project the schedule overlap between the project construction and project operation needs to be understood. There appears to be overlap between the operation of Phase 1 of the project and construction of Phase 2 of the project. Staff needs to understand if the combined

construction emissions and operation emissions during this overlap period are higher than the maximum construction emissions or operations emissions alone.

DATA REQUEST

91. Please provide an integrated schedule of project construction and operation and describe what construction and operation activities would overlap.
92. Please provide a maximum construction and operation overlap emission estimate for maximum hourly, daily and annual emissions.

BACKGROUND: OPERATIONS – EQUIPMENT REFUELING EMISSIONS

The AFC notes that there will be an on-site 5,000-gallon gasoline tank and 5,000 gallon diesel tank that will be used for vehicle refueling at the site. For completeness, the operating VOC emissions estimate needs to include the gasoline tank filling and vehicle refueling emissions. Additionally, the air quality permitting requirements for fuel tanks (gasoline and diesel) have not been provided in the AFC, nor has a discussion of any emission controls.

DATA REQUEST

93. Please estimate the gasoline tank filling and vehicle refueling VOC emissions (daily and annual).
94. Please provide a description of the permitting requirements and applicable ICAPCD rules for the fuel tanks.
95. Please identify what emission controls will be used for tank filling (Phase I vapor recovery) and vehicle refueling (Phase II vapor recovery).

BACKGROUND: CONSTRUCTION EMISSIONS DISPERSION MODELING – OZONE FILE

The applicant notes in the AFC (under Table 5.2-29) that the ozone limiting method was used for the construction NO_x emissions modeling based on actual ozone data from the El Centro 9th Street monitoring station for the years 2004 to 2007. However, a review of the modeling files appears to show that the meteorological data and ozone data was from 1991 through 1995. Staff needs clarification regarding what ozone data was used in the construction modeling analysis.

DATA REQUESTS

96. Please identify the source and period of the ozone data (filename ElCentroOzone91to95) used in the construction emissions modeling analysis.

BACKGROUND: CONSTRUCTION EMISSIONS DISPERSION MODELING – CONSTRUCTION EQUIPMENT MODELING INPUT ISSUES

The applicant's construction emission dispersion modeling analysis used specific point source parameters for construction equipment tailpipe emissions and a limited number of area sources that cover just a few of the on-site roads in the modeling analysis. This approach is generally considered reasonable by staff for thermal power plant sites with much smaller site footprints where the construction will be focused in an even smaller

portion of the site (generally well less than 50 acres); however, the size of this site is 6,500 acres (over 10 square miles) that makes this approach questionable, particularly for annual impact modeling. The distribution of the sources does not cover the entire site and therefore would not model what is actually happening during construction. Staff believes that an approach with distributed construction emissions volume sources, and potentially area sources for the unpaved and paved road fugitive dust, would better simulate the long-term emissions activity over the extent of the site.

The modeling files use a daily construction time frame of 7 am to 4 pm, while the AFC on page 3-52 notes that heavy construction would be scheduled to occur from 7 am to 7 pm. Staff has a question about this inconsistency.

The height of the equipment exhausts that were used in the modeling analysis, for many equipment types, appears to be too high. Heights at or above 3 meters are generally not consistent with the equipment types that they are supposed to represent. Staff needs to understand why such exhaust release heights were used.

DATA REQUESTS

97. Please defend the selection of the point source locations used in the modeling analysis for the determination of maximum short-term emissions impacts.
98. Please defend the stack heights used for the point sources used in the modeling analysis.
99. Please describe if the daily emission estimates match the AFC noted daily heavy equipment construction period of 7 am to 7 pm and defend the selection of the 7 am to 4 pm period used for the construction emissions modeling.
100. Please provide a revised annual modeling analysis with appropriately distributed site-wide distributed construction emissions.

BACKGROUND: OPERATIONS EMISSIONS DISPERSION MODELING

The applicant's operations emission dispersion modeling only includes SCREEN3 modeling of the minor stationary emission components of the project. The vast majority of on-site emissions from the project occur due to ongoing maintenance activities that will last the life of the project. Staff requires that the applicant model these emissions to determine the total operation impacts from the proposed project.

DATA REQUEST

101. Please provide a revised operations modeling analysis, using the AERMOD model, which includes all on-site operations emission sources.

BACKGROUND – CONSTRUCTION GREENHOUSE GAS EMISSIONS

The AFC does not include an estimate for construction related greenhouse gas emissions. Staff needs this estimate to complete the greenhouse gas analysis for the project.

DATA REQUEST

102. Please provide calculations for the project construction greenhouse gas emissions in CO₂-equivalent tons for the entire construction period, and include estimates of total fuel use by type of fuel.

BACKGROUND – OPERATING EMISSIONS GREENHOUSE GAS ANALYSIS

Staff will be evaluating the greenhouse gas (GHG) emissions from project operation. The AFC did provide a summary of the operating GHG emissions but did not provide the calculations, which staff needs to review before completing the project GHG analysis. This analysis includes a determination of the GHG emission rate per MWh of generation. The applicant did provide a total net annual net MWh value in Section 3 (1,620,000 MWh/year) but did not provide the calculations and assumptions necessary to derive this value. Staff needs to determine if the net annual MWh value provided is reasonably accurate.

DATA REQUEST

103. Please provide the calculations used to derive the operating GHG emission estimate shown in Table 5.2-25, and include estimates of total fuel use by type of fuel.
104. Please provide an estimate of the annual net generation in megawatt-hours for the facility that shows the calculations and assumptions for the dish generating capacity factor and all on-site power consumption sources including dish unstowing, the water treatment plant, the administration building, the maintenance building, etc. In this estimate please also show the annual generation and annual consumption separately.

BACKGROUND – EMERGENCY GENERATOR AND FIRE PUMP ENGINES DESIGN

Staff believes that the emergency generator and fire pump engines should be new engines that meet the latest available U.S.EPA and CARB non-road diesel engine emission standards. Tier 2 compliant engines have been proposed by the applicant due to the current lack of availability of Tier 3 engines; however, considering the time frame for the construction of this project, staff believes that a Tier 3 engine may be available prior to the necessary equipment purchase date. Staff needs the applicant to identify whether they would be willing to stipulate to the use of a Tier 3 engine, if such engines are available prior to the necessary engine purchase date.

DATA REQUEST

105. Please identify whether the applicant would be willing to stipulate to using a Tier 3 compliant fire pump engine if such engines are available in time for purchase.

BACKGROUND: LOCAL HEAT IMPACTS

The project will collect energy and will convert some of that energy to electricity and will reject some of that collected energy out radiators associated with each SunCatcher. The current site location appears to have a relatively high albedo which would cause some but not all of the sun's energy to be reflected. Staff needs more information to determine if this project would create a new heat sink or new heat source that could impact local climate, particularly local ambient temperatures.

DATA REQUEST

106. Please provide a localized solar heat balance for existing conditions versus the proposed project that indicates whether the project would create a new heat sink or new heat source in comparison to existing conditions.

BACKGROUND: CUMULATIVE IMPACTS ANALYSIS

The cumulative modeling analysis has not yet been submitted. Staff needs the cumulative modeling analysis to complete the staff analysis for cumulative air quality impacts.

DATA REQUEST

107. Please provide a copy of the cumulative modeling analysis, as proposed in the cumulative modeling protocol provided in the July 22nd letter regarding the air quality data adequacy items, with the addition that this modeling analysis shall include all on-site emission sources, such as the operations and maintenance tailpipe and fugitive dust emission sources. Please provide electronic copies of the cumulative impact modeling files.
108. Please provide a copy of cumulative project list to be provided by ICAPCD as noted in the July 22nd letter on the air quality data adequacy items.

BACKGROUND: AIR QUALITY PERMIT APPLICATION

A Determination of Compliance (DOC) analysis from the ICAPCD will be needed for staff's analysis. The application for the DOC has been submitted to the ICAPCD. Staff will need to coordinate with the applicant and District to keep apprised of any air quality issues determined by the District during their permit review.

DATA REQUESTS

109. Please provide copies of any permit application materials, other than AFC materials, submitted to the District.
110. Please provide copies of any subsequent official submittals and correspondence to or from the District within 5 days of their submittal to or their receipt from the District.

Technical Area: Cultural Resources
Author: Michael McGuirt and Carrie Simmons

INTRODUCTION

Where the disclosure of information on the location or the character of cultural resources may create a substantial risk of harm, theft, or destruction, one must submit such information under cover of an application for confidential designation pursuant to title 20, California Code of Regulations, section 2505.

The data requests immediately below relate to information that staff of both the Energy Commission and the BLM need to complete their respective cultural resources analyses under CEQA and NEPA. In addition, to accommodate the joint BLM and CEC process for the environmental review of the proposed project, further BLM comment on the September 2008 revision to the *Class III Confidential Cultural Resources Technical Report* (Technical Report) is appended to these data requests.

BACKGROUND

The construction and operation of the proposed project will involve ground disturbance in several different portions of the project area. For those portions of the project area where ground disturbance is anticipated to exceed one meter in depth (disturbance at depth), staff will need the applicant to take into consideration the potential for the proposed project to truncate buried archaeological deposits. The applicant can document such consideration, for the administrative record of the present certification process, in a number of ways. The applicant may be able to make a case, on the basis of extant Quaternary science or geoarchaeological literature, that the landforms in the project area that would be subject to disturbance at depth are too old (> 12,000 years) or of a processual character that would preclude the likelihood that such landforms contain buried archaeological deposits. Absent such available data, staff requests that the applicant conduct a geoarchaeological field study the purpose of which would be to provide a factual basis for the assessment of the likelihood that the construction and operation of the proposed project would destroy such deposits. The assessment of the likely effects of the project on buried archaeological deposits is a requisite element of the CEQA analysis for the project. Staff will have no factual basis to assess the potential effects of disturbance at depth without such an assessment. 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 develop a substantive analysis of the project's potential to substantially and adversely change the significance of historical resources that may lie buried in the project area.

The assessment *does* offer the potential additional benefits to the applicant of avoiding, rather than having to excavate, found archeological deposits, significantly reducing the scope of post-certification monitoring, and facilitating more rapid resolutions to the discovery of buried deposits during construction.

Siting cases presently before the Energy Commission are accruing the benefits of conducting geoarchaeological assessments. Bright Source, the applicant for the Ivanpah Solar Electric Generation System (SEGS) project in San Bernardino County, conducted a relatively inexpensive geoarchaeological assessment of their project area, and, on the basis of that study, the applicant's construction monitoring obligation for cultural resources will be eliminated. The elimination of cultural resources construction

monitoring represents a significant savings to the applicant and will allow the applicant to recoup the cost of the geoarchaeological field study many times over.

Orange Grove Energy, the applicant for the Orange Grove Peaking Power Plant project in San Diego County, recently conducted a phased geoarchaeological assessment of their project area, and, on the basis of the information that the applicant was able to collect, the applicant will realize a reduction in their construction monitoring obligation for cultural resources of approximately 75 percent.

The applicant for the present siting case may garner similar benefits, dependent upon the scope of any geoarchaeology study that they choose to conduct and the results of any such study.

DATA REQUEST

111. 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 landforms on which the project area is proposed, with a focus on the character of the depositional regime of each landform since the Late Pleistocene era. The basis for the discussion should be data on the geomorphology, sedimentology, pedology, hydrology, and stratigraphy of the project area or the near vicinity. The source of these data should be the available Quaternary science or geoarchaeological literature. The presentation of the discussion should also include maps that overlay the above data on the project area.
112. In the absence of extant Quaternary science or geoarchaeological literature pertinent to the reconstruction of the historical geomorphology of the project area, staff requests that the applicant conduct a primary geoarchaeological field study of the project area to facilitate the assessment of the likelihood that archaeological deposits are buried beneath the project area surface, where the construction and operation of the proposed project will involve disturbance at depth. The primary study should, at a minimum, provide for the following elements:
 - a. A map of the present landforms in the project area at a scale not less than 1:24,000. The map may be the result of any combination of satellite or aerial imagery that has been subject to field verification, or the result of a field mapping effort.
 - b. A sampling strategy to document the stratigraphy of the portions of the landforms in the project area where the construction and operation of the proposed project will involve disturbance at depth.
 - c. The collection of the data requisite to determinations of the physical character, the ages, and the depositional rates of the various sedimentary deposits and paleosols beneath the surface of each sampled landform to the proposed maximum depth of ground disturbance. Data collection at each sampling locale should include a measured profile drawing and a profile photograph with a metric scale and north arrow, and the screening of a small (3, 5 gal. buckets) sample of sediment from the major sedimentary deposits in each profile through 1/4 inch hardware cloth. Data collection should also include the collection and assaying of enough soil

humate samples to reliably radiocarbon date a master stratigraphic column for each sampled landform.

- d. An analysis of the data that are the result of the above field study, and an assessment, on that basis, of the likelihood that the project will encounter buried archaeological deposits, and, to the extent possible, the likely age and character of such deposits.

A qualified geoarchaeologist, a person meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for archaeology and who can further demonstrate the completion of graduate level coursework in geoarchaeology or Quaternary Science, should prepare a research design for the above study, for the review and approval of the Siting Project Manager, and then conduct the research and forward a report of the results to the Siting Project Manager.

113. Staff requests that the applicant modify the inconsistent conventions that the applicant uses in the Technical Report to describe the geomorphic settings of the cultural resources that the applicant found in the project area of analysis to reflect more standard geomorphic conventions for landforms and subordinate landform features. The present descriptive conventions in the Technical Report, conventions such as "desert pavement terrace," "raised open terrace," and, "flat desert pavement plateau," do not help place the individual cultural resources in the context of the major landforms in the project area. The modifications to the present conventions should correlate with the results of the above research into the geoarchaeology of the project area. The modifications will enable meaningful interpretations of the distribution of found cultural resources across the project area landscape that the present descriptive conventions now obfuscate.

BACKGROUND

The discussion in the Technical Report of the prehistory of the portion of the Colorado Desert that includes the proposed project area provides information on period artifact assemblages and interpretations of the assemblages, but does not provide much information on the actual archaeology of the region (pp. 2-3-2-6, *Cultural Setting* section).

DATA REQUEST

114. Using the *Cultural Setting* section of the Technical Report as a point of departure, please develop a discussion that provides the following information, particularly for the Paleoindian, and early and middle Archaic periods:
 - a. Sparse as the deposits may be for particular periods, what do the deposits look like on the ground?
 - b. What artifact types typically make up the deposit assemblages?
 - c. With what frequency are the types typically found in the assemblages?
 - d. Are features or architectural ruins deposit components?
 - e. Where on the landscape are period deposits found?

- f. Are period deposits typically surface expressions, or are buried components known?

BACKGROUND

Many of the archaeological sites in the *Report of Findings* section of the Technical Report are quite large, and the *Field Investigation Methods* section does not describe how the survey crews delimited the boundaries of archaeological sites once they were found. Staff wonders whether it may possible to break up some of the archaeological sites to make them more manageable.

DATA REQUEST

115. Please provide a discussion of the methods and the criteria that were used to delimit the boundaries of the archaeological sites that were found in the proposed project area, and comment on whether there is any justification for breaking up any of the larger sites.

BACKGROUND

The 58 apparent prehistoric trail segments that traverse the proposed project area are a problematic resource type to document on the ground. The applicant reports 35 trail segments that are absent associations with any material culture remains and 23 segments that are found in association with archaeological sites, archaeological features, and isolate artifacts. To enable staff to adequately assess the character and the potential significance of the found trail segments, staff needs the applicant to clarify the field methods that were used to record these resources.

DATA REQUEST

116. Please provide a discussion that explains how the applicant delimited and documented the individual trail segments in the field, and how field determinations were made with regard to associations that may exist among different trail segments and among the trail segments and other material culture resources.

BACKGROUND

The individual archaeological site descriptions in the *Results of Pedestrian Survey* subsection of the *Report of Findings* section of the Technical Report present inconsistent mixtures of site description and interpretation. The descriptions of the site artifact assemblages are similarly inconsistent. For prehistoric sites, the artifact descriptions, the frequency of different artifact types across the sites, and the artifact distribution patterns are inconsistently described and often mixed with artifact interpretation. One example comes from temporary site number EBR-001 where the site assemblage is now said to consist of "metavolcanic rock, two tested cobbles, a core, five utilized flakes, and a lithic reduction area" (The draft site description described the assemblage as consisting of "a tested cobble, flakes, and a lithic reduction area."). Historical archaeological sites receive similar treatment. The descriptions of the individual artifacts are often too general to offer much value in deciphering the age or function of the sites. One example of such a case comes from temporary site number

RAN-014 where the site assemblage is now said to consist of "cans, bottle glass, metal and ceramic fragments, fencing wire, and one green glass drinking cup."

The inconsistent and apparently arbitrary manner in which the composite archaeological site assemblages are described and the frequent lack of detail in the description of the artifact types hinders the ability of staff to identify the age of, ascribe, independently, a function to, or develop a preliminary evaluation for the archaeological sites in the proposed project area. On the whole, the individual site descriptions in the Technical Report are not particularly useful for informing agency and applicant decisions about the disposition of the subject resources under the present certification process.

DATA REQUEST

117. To enable staff to reliably identify, analyze, and develop preliminary evaluations for each of the newly found archaeological sites in the proposed project area, please revise the descriptions of these 254 resources in the Technical Report to present, in a consistent format, objective and informed archaeological site and artifact assemblage descriptions using explicit descriptive conventions, and develop a reasoned interpretation for each site.

More specifically, please revise the site descriptions in the *Report of Findings* section to include:

- a. Objective, non-interpretative descriptions of the overall physical character of the surface of each archaeological site including the approximate area of the site, the presence and approximate location of any architectural ruins, archaeological features, or concentrations of material culture, the gross distribution pattern of artifacts and ecofacts across each site, and any variation in the color, texture, or composition of the sedimentary matrix for each site.
- b. Descriptions of the artifact and ecofact assemblages for each site that rely on objective, non-interpretative descriptive conventions that the subject report may lay out in the introduction to the site description section or as a report glossary, that discuss artifact and ecofact frequency and the differential patterns of their distribution across each site.
- c. Artifact descriptions for representative samples from each site that type out individual artifacts to a level that meaningfully informs archaeological site interpretation (For prehistoric archaeological sites, individual artifact descriptions would include, for instance, assigning lithic debitage to flake types with reference to an explicit flake typology, assigning lithic cores to core types or describing core flaking patterns, and descriptions of unique tool shapes, edge angles, and apparent patterns of retouch or use wear. For historical archaeological sites, individual artifact descriptions for ceramic sherds would include the identification of established ceramic types or descriptions of the ceramic body, glaze, mode and character of decoration, vessel portion represented, and probable vessel form. Descriptions for glass vessel fragments and sherds would include, at a minimum, the identification of glass color, inclusions in the sherd body of nineteenth century glass, sherd curvature, manufacturing clues such as seam locations, pontils, and hand appliqué, mode and character of

decoration, vessel portion represented, and probable vessel form. Descriptions for tin cans would include tin can type or method of closure, tin can dimensions, and seam type and method of seam fastening, including evidence for degree of hand manufacture.

- d. With reference to the above descriptive data, a preliminary interpretation of the use of each archaeological site, the approximate date range of use, and the integrity of the subject deposits.

BACKGROUND

Staff believes that one purpose of researching and developing the ethnographic setting for the project area and vicinity is to help model the types of protohistoric through early historic Native American traditional use areas that one may anticipate finding in or near the project area. While the *Late Prehistoric Period* section of the Technical Report provides useful information on the identity and the lifeway of the Kamia, it does not offer specific information on the material character or the diversity of the traditional use areas for the group (pp. 2-6–2-8).

DATA REQUEST

118. Using the *Late Prehistoric Period* section of the Technical Report as a point of departure, please provide a discussion of potential traditional use areas in or near the proposed project area. Please include considerations of:
 - a. The types of domestic, economic, and ritual use areas that are known for the Kamia and other Native American groups that have associations with the project area.
 - b. The material character of such use areas.
 - c. The patterns of such use areas across the local landscape, and the potential archaeological signature of such use areas.

BACKGROUND

The construction of the project may produce a stark visual intrusion across a large portion of the remnant shoreline of ancient Lake Cahuilla in the Colorado Desert. The revised *Cultural Resources* section of the AFC, section 5.7, and the Technical 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. Staff needs additional information to evaluate the proposed project's potential to adversely impact potentially significant ethnographic resources.

DATA REQUEST

119. 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, and a discussion of the potential presence or absence of other such areas in sight of the project.

BACKGROUND

The only apparent summary in the Technical Report of the cultural resources inventory for the proposed project area comes at the close of the *Discussions and Interpretations* section (p. 6-17). The summary reports that, minus 68 isolate finds, there are 317 cultural resources in the project area. This tally includes 254 archaeological sites, 58 linear resources, and 5 built environment resources. That is basically the extent of the discussion of the inventory in the text of the report. Elsewhere in the *Discussions and Interpretations* section, there are a number of tables that list Resource Attribute Codes from the California Office of Historic Preservation's March 1995 *Instructions for Recording Historical Resources* manual as resource site types. This manner of reporting does not facilitate the process of comprehending the character of the cultural resources inventory as a whole. In order to further agency and applicant discussions about the character of the inventory and its appropriate treatment under CEQA, NEPA, and Section 106, the applicant needs to begin to qualitatively, quantitatively, and chronologically split the inventory into meaningful subsets. This needs to occur prior to any discussions about which resources may contribute to known historic districts, which resources may contribute to previously unknown districts, which resources may warrant treatment as groups under extant evaluation programs or evaluation programs that may be devised for this project, and which resources may warrant individual evaluation.

The discussions of the cultural resources inventory for the proposed project need to occur relative to an explicit taxonomy of objective resource types. A taxonomy of prehistoric and historical archaeological site types will enable agency and applicant staff to better comprehend and plan the disposition of each individual resource in a manner that is publicly transparent and defensible. To the extent possible, it would further facilitate agency and applicant discussions of the cultural resources inventory to group the resources of each type relative to resource age.

DATA REQUEST

120. To facilitate agency and applicant discussions of the cultural resources inventory for the proposed project area, please revise either the Report of Findings or Discussions and Interpretations sections around a resource taxonomy that is made explicit in the revision. The revision should define objective criteria for each resource type in the taxonomy, and provide, in the text of the appropriate section and in tabular form, a discussion of the breakdown of the cultural resources inventory into the various resource types and into age clusters within each resource type.

BACKGROUND

The Technical Report assesses prehistoric archaeological sites in the proposed project area as potential contributing elements of the Yuha Basin Discontiguous District (Yuha District) primarily on the basis of the presence of percussion-flaked cobbles and percussion stone flakes or debitage and the absence of other classes of material culture indicative of more recent archaeological cultures (pp. 3-4-3-7 and 6-4). The Yuha District appears to have originally been thought of as a manifestation of the San Dieguito Paleoindian archaeological culture. Subsequent to the initial designation of the district, the heavy patination that was thought to distinguish the artifacts of San Dieguito sites has been found to be more attributable to the harsh environment of the surface of

the Colorado Desert than to age. To avoid the inadvertent inclusion of non-Paleoindian archaeological sites as contributing elements to the Yuha District, a correction would need to be devised to take this environmental factor into account.

DATA REQUEST

121. Please provide a discussion of how the applicant envisions correcting for the effect of the local environment on the degree of patination on percussion-flaked cobbles and percussion debitage as the applicant assesses which lithic scatters belong as contributing elements to the Yuha District. Does the applicant have in mind a list of diagnostic tool types that would also be a factor in the assessment of district contributors?

BACKGROUND

The Southwest Lake Cahuilla Recessional Shoreline District (Lake Cahuilla District) section of the Technical Report discusses a number of criteria relative to which archaeological sites have apparently been designated as contributing elements of the Lake Cahuilla District (pp. 3-7 and 6-1). The source of these criteria is unclear.

DATA REQUEST

122. Please provide a discussion of the source of the criteria that the applicant cites in the Technical Report for assessing whether archaeological sites may be contributing elements to the Lake Cahuilla District. If the extant documentation for the district does not include explicit criteria for district contributors, please provide an explicit, reasoned set of criteria for assessing contributing elements of the district. The discussion of these latter criteria should explicitly incorporate reference to the historic themes that, in part, define the district.

BACKGROUND

The Juan Bautista de Anza National Historic Trail (Anza Trail) appears to cross directly through the middle of the proposed project area (<http://www.nps.gov/juba/upload/JUBAv1.02.kmz>). The narrative of the Anza Expedition of 1774 in the *Regional Historic Context* section of the Technical Report (pp. 2-8 and 2-9), however, does not mention the location of the Anza Trail relative to the project area, nor does the Anza Trail itself seem to appear in the *Discussion of Previously Recorded Sites* section of the report (p. 5-15).

DATA REQUEST

123. Please expand the discussion of the Anza Expedition of 1774 in the *Regional Historic Context* section of the Technical Report. The revision to the narrative should include a narrative of the expedition encounter with Native Americans at the Yuha Well, approximately three miles to the south of the project area.
124. Please incorporate a mention of the Anza Trail in the *Discussion of Previously Recorded Sites* section of the Technical Report. The mention should include text on the general character of the trail in locations where it is known, and the character of the archaeological signature of deposits that have been found in association with the trail.

BACKGROUND

The development of the historic contexts and the evaluations of the built environment resources in the Technical Report are sparse. The evaluations of the resources in the *Historic Built Environment Survey Results* section (pp. 5-74 and 5-75), in particular, do not provide reasoned or compelling arguments for the conclusions that are drawn. Each evaluation makes a glancing reference to a bit of historic context and concludes with a recount of the past opinion of others. Staff needs the applicant to produce defensible recommendations on the historical significance of each of the built environment resources in the proposed project area on which staff can base its recommendations to the Siting Committee.

DATA REQUEST

125. Please revise the evaluations of each of the built environment resources in the *Historic Built Environment Survey Results* section of the Technical Report by expanding and elaborating on the historic context for each resource and the reasons why each resource does or does not meet appropriate significance criteria and why each resource does or does not retain, as appropriate, each of the seven aspects of resource integrity. The more appropriate location in the Technical Report for the above revisions would be the *Historic Built Environment* section (p. 6-14).

BACKGROUND

The discussions in the Technical Report of the various strategies to evaluate different subsets of the cultural resources inventory for the proposed project area have a number of critical holes (*Discussions and Interpretations* section). One issue concerns those archaeological sites that are not contributing elements to either the Yuha District or the Lake Cahuilla District and are not eligible for treatment under the California Archaeological Resource Identification and Data Acquisition program (CARIDAP). The *Discussions and Interpretations* section states that each of these sites will be subject to individual evaluation. Staff believes that it may be possible to devise evaluation programs for different site types to treat whole subsets of the cultural resources inventory, and would like the applicant to consider this possibility. Another issue common to the proposals by the applicant to evaluate different subsets of the cultural resources inventory is the absence of comment on the timing of the implementation of the different evaluation strategies. Staff believes it is critical to negotiate the schedule for the evaluation of the cultural resources in the inventory for the proposed project prior to the drafting of the PSA.

DATA REQUEST

126. Please provide a discussion about the feasibility of developing evaluation programs for individual archaeological site types with reference to the taxonomy that the applicant will develop in response to Data Request 120 above, and provide, for further discussion, a working outline of the evaluation programs that the applicant envisions being appropriate to the cultural resources inventory for the proposed project area.
127. Please provide, for further discussion, a proposed schedule for the evaluation of the 317 cultural resources in the project area that is explicit about the evaluation efforts that the applicant envisions accomplishing prior to certification and those that the applicant envisions deferring until after certification.

BLM APPENDIX

BLM Review and Comments:

*Volume 1, Class III Confidential Cultural Resources Technical Report-Revised Draft,
Application for Certification (08-AFC-5) SES Solar Two, LLC* September 2008

GENERAL COMMENTS

- Inform the reader early that this study is subject to review and approval by the Bureau of Land Management.
- Check proper use of acronyms in each section.
- Make it explicit that the report presents results also of survey of original project area now excluded- In many sections of the report it contradicts itself on this issue.
- Both archaeological and archeological are employed. Pick one and use consistently.
- Figures: Include land ownership status on all maps. Define acronym N.A.P. in legend. Shade of blue delimiting *Areas Not In Project* is, if not the same shade on the map, at minimum is confused with the blue on black dashed line. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and the California Energy Commission.**
- The potential for this study to add to our knowledge of use of the historic and prehistoric landscape is under presented and under discussed-expand.
- Place less emphasis on future proposed studies. The inclusion of more detailed site descriptions and in-depth discussion of the observed individual resources is required to allow a greater understanding of the human past, including patterned behavior, and use of the landscape within the project area. These data presented in this report must provide the explicit objective foundation for recommendations for future studies.

SPECIFIC COMMENTS (SEE ALSO ADDITIONAL SPECIFIC COMMENTS WITHIN DOCUMENT MARKUP)

Title Page and Table of Contents

- Add authors
- Move "List of Appendices to page iii. State that they are bound separately.

Management Summary

- Per ARMR, detailed project description belongs in Section 1. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Include acronym NHPA after National Historic Preservation Act- perform global change.
- Define acronym N.A.P.

Section 1 – Introduction

- Explain how 36 CFR Part 800 also requires definition and determination of an area of potential effects. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Whereas the Secretary of Interior does not require that Mr. Shaw have an M.A. to be qualified, review of his resume does not support the contention that he is a qualified architectural historian per the standards. His resume does not specify architectural history training or experience.
- Add Office of Historic Preservation (1989) to references.

- Figure 1-1: Why is there no APE associated with the water line or access road?

Section 2 – Setting

- A figure showing the geology and landforms is needed.
- More detailed pedological descriptions of the project area are needed along with a greater relation of the surface hydrology to the known hydrologic features. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 2.2: Regarding the project area, elaborate on what the various site types look like and what are their attributes. What artifacts and features are typically observed? What is the potential for buried deposits? **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 2.2.3: Recommend creating a new section 2.2.4 – **Ethnography** subheading on page 2-7 where you focus on tribal descriptions. Within this new subsection discuss in relation to the project area types of domestic, economic, and ritual areas possibly present based on background research; material use of such areas, patterns on a landscape level, and the potential for archaeological signature. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Please explain statement that Native American bands did not recognize a native tribal name and provide citation. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 2.3.1: Expand the discussion of the Anza Expedition. The Juan Batista de Anza National Historic Trail crosses directly through the project area. Include description of Anza's encounter with the Native Peoples at the Yuha Well immediately to the south of the project area approximately 3 miles.
- 2.3.2: Relate discussion in the section back to its local context.
- 2.3.3: Relate discussion in this section back to its local context. Additionally, there is no mention of the sand and gravel mining has been historically important to this area. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**

Section 3 – Research Design

- Link and elaborate research design to Class I inventory results discussion. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 3.1.6: Provide a map showing the district in relation to the project area.
- 3.1.7: Provide a map showing the district in relation to the project area.
- 3.1.3: This section does not include research issues.
- 3.1.4: Expand this section.

Section 4- Methods

- Link methods with project objectives, research design and provide a rationale. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**

- Describe whether (and how) geomorphic setting of recorded archaeological sites was established and descriptive conventions employed. Describe how the landform attributes were mapped, and what recordation protocols for artifact types, frequencies, attributes were employed with reference to the research design. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Explain that this report also includes the results of the 2006 Geotechnical Investigation and cite appropriate figure.
- Provide specific dimensions of all the APE components and associated buffer zones and cite appropriate figure. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- How did you record individual trail sites and determine association with other sites (and trails). How did you treat (document and assess) associated materials to along trails? **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Figure 4-1: Re-title figure *Records Search Boundary Map*.

Section 5 – Report of Findings

- Ensure that each of the 13 figures in this section is properly called out in the text and move them to the appropriate place within the Section rather than grouped all at the end.
- What is the result of the Sacred Lands File search?
- Where is the figure showing all the previously recorded sites? **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- The Juan Batista de Anza National Historic Trail is omitted from discussion within the record search results.
- In the description for each site provide landform context, overall physical character, and artifact distribution patterns observed. Additionally, describe a sample of artifacts to a meaningful level including assignment to existing tool typologies and classifications. Provide preliminary interpretations and assessment of integrity. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 5.3, Page 5-18: resources listed and described are previously unrecorded. Inform reader that the results of Class III inventory resulted in the recording of xx total sites (newly recorded), including xx prehistoric sites, xx historic archaeology sites, and xx historic built environment. This is in addition to the discussion in 5.3.2. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 5.3.1.11: Inform reader what series of figures portray the resources.
- 5.4.3: Is CA-IMP-7739H outside the APE? Why is the resource unevaluated?
- Page 5-76: These two paragraphs are out of place and appear to belong in Subsection 5.2.
- 5.4: Results of Built Environment Survey: Too little information and context is provided here, especially when recommendations of eligibility are provided. Expand and elaborate on rationale for evaluations in the Section 6 which is the more appropriate section for this.
- Section 5 Figures: Observing the gray project boundary underneath APE component boundaries is difficult. Additionally, utilization of three different shades of gray for the project boundary, areas not in project, and main access road adds to the confusion.

- Figure 5-2: An inset map is needed showing ns where this is located in relation to the overall project.
- Figure 5-6: Subtle shades of gray depicting various elements make it hard to discriminate, especially on an inset scale level.
- Figure 5-7 should be 5-8, and 5-8 should be figure 5-7.

Section 6 – Discussions and Interpretations

- Provide preliminary age ranges for the resources. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Discuss previous studies and previously recorded sites in relation to your data. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Give preliminary meaning to the past human use of the project area and link and discuss data in context of research design and research questions. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Site by site inform and justify to the reader what specific values make each site a contributor to the Southwest Lake Cahuilla Archaeological District. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Site by site inform and justify to the reader what specific values make each site a contributor to the Yuba Basin Archaeological District. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Site by site inform and justify to the reader what specific values make each site applicable to the CARIDAP procedures. Cite 1998 OHP Manual. Justify 15 to 10 percent sample and describe amount of surface and subsurface testing and analyses proposed at each site. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- Page 6-8: The “sites below section” needs to be move to page 6-10 as an introduction to 6.3 and 6.4. What are non-trail sites and justify why enough data have been collected to evaluate. If you have enough data, why did you not evaluate the sites?
- 6.3: Describe how these sites should be looked at in greater detail and why they were not evaluated under this study and what NRHP criteria would apply and in what context. These sites should be classified as more data needed. Additional justification and discussion is needed as to how and why some trails are associated with sites, and some are not. And this should also be done on a trail by trail basis. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 6.4: Describe how these sites should be looked at in greater detail and why they were not evaluated under this study. These sites should be classified as more data needed. **Note: This comment was expressed previously as part of review by the Bureau of Land Management and/or the California Energy Commission.**
- 6.8: Class III **inventory**. Sites are recommended as contributors to the extant archaeological districts and you are recommending the expansion of each. Refrain from using adjective *potential*. Evaluations will be under the direction of the BLM and not in consultation with. Do not describe compliance process in terms of absolutes.

- Figure 6-1: Title of figure should be: *Newly Recorded Sites Recommended as Contributing to an Extant Archaeological District*. Additionally, *Recommended Contributing* in the map legend.
- Figure 6-2: Several “blue” unassociated linear resources appear to be going through recorded sites. Additionally, which linear resources are prehistoric, and which are historic?
- Tables: Do not use DPR codes to identify site type - be specific.

Section 7 – Management Considerations

- 7.2: This subsection needs subheadings for purposes of organization and clarity.
- Place less emphasis on future proposed studies. Much of the data proposed to be gathered during future studies should have been collected during this inventory and analyzed.

Section 8 – References

- Perform a find word search of the document and ensure that all cited documents are referenced.

Appendix B – Site Records

Please review the California Office of Historic Preservation’s “Instructions for Recording Historical Resources” (OHP 1995). It is recommended that the preparer refer to OHP 1995 when he/she addresses comments. The instructions provide more detailed information for filling out the forms than the forms alone.

Primary Record

A Primary and/or Trinomial Number need(s) to appear on every page of the DPR.

Top left of page. “Page 1 of 5” appears on many, if not all, of the Primary Record forms. This numbering (the 5) is usually incorrect. Correct numbering does appear in the lower right corner.

P1. The project name or agency designation could go here.

**P2. Neither box is checked on any of the Trail DPRs.*

P2b. The first “1/4” is not showing in its entirety; change “Sc” to “Sec,” Combine “SB BM” to “SBBM.”

P2d. While additional required UTM’s do appear on a Continuation Sheet, the preparer should note that here. Or why not simply provide the additional UTM’s here, thus saving one sheet of paper per site record? In this case it adds up!

P2e. Elevation should be included. This is important information.

**P3a. In general, the descriptions are not very descriptive. They need to provide a better description of the resource based on the instructions provided, i.e., “. . . design, materials, condition, alterations, size, setting, and boundaries.” It would also be useful if the first sentence immediately identified the resource, e.g., “T-XX is a segment of a dirt trail that is probably*

prehistoric in origin . . .” Locational data provided in P3a would be better suited to P2c “Other Locational Data.”

P3a. On some DPRs, resources identified as isolates in P3a and P4 are being identified as sites in P3b.

**P4. Trails are being identified as isolates. Trails and segments of trails are considered sites, not isolates (OHP 1995).*

P5b. While a photo is not always required, when a photo is provided, a description must accompany it.

**P6. Provide some justification as to why a trail is classified as prehistoric and not historic.*

**P7. All the required information is present. However, it would “read better” if “BLM” preceded the address.*

**P8. The name of the individual preparer is required information. It would also look better if the address appeared on a separate line from “URS Corporation.”*

P11. In addition to the title of the report, the following should be included: name of author, date of report, name of government agency, private firm, university department, or publisher, etc. for whom the report was prepared or by whom the report was published.

Linear Record Form

L2b. Preparer should include UTM, a legal description, and any other locational information.

L3. Per OHP (1995), information provided here should not duplicate information provided in P3a. In most instances, preparer simply repeats the same information; however, often times the descriptions are inconsistent. Preparer needs to review OHP (1995) and provide different information. *If any duplicate information is provided, then the preparer needs to review the information provided in P3a and L3 and make certain that the descriptions are consistent. There are many inconsistencies.*

L5. *This is intended to include resources associated with the resource being recorded, and not simply any resource that is in the vicinity. Some resources that are simply in the vicinity are mentioned, and they should not be.*

L6. Preparer provides geology here. This is ok, but not really the intent of L6, which requests information that “. . . contributes to the significance of the resource or appreciation of it.”

L7. *“All trails observed . . .” Why the plural? DPR is for one trail only. Revise to something like, “Portions of the trail retain integrity, while other portions have been impacted by erosion and heavy off-road vehicle use within the project area.”*

L9. Does not address intent of L9.

Archaeological Site Record

A7. Needs more description.

A16. Should list photos or attach a photo log.

A17. Instructions say to provide this information only if it differs from P8 and P9. I suppose that since it's already entered, there is no harm in just leaving it.

Artifact Record

Although not required when artifacts are not collected, I assume the major artifacts were listed to provide information for site evaluation.

Location Map

*"*Date of Map:" is supposed to be the original date of the topo map, followed by the photo-revised date, if any, in parentheses. This is not intended to be the date that the consultant prepared the Location Map.*

With so many merging trails, it would be helpful if the trail "in question" were a different color from the rest of the trails depicted on the map. (A lot of work – not a necessity)

Legends are blurry.

All UTM's should be on the Location Map if more than one UTM is necessary. Be sure UTM's are in NAD 83.

Continuation Sheet

Adjust the width of the "Description" column to allow more space for the "Date" and the "1/4 Section" columns.

Features listed on the Continuation Sheet would fit in A4, again deleting the need for an extra sheet of paper. However, the Continuation Sheet was probably used because it was easier and faster than providing the information in A4.



BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

**APPLICATION FOR CERTIFICATION
For the SES SOLAR TWO PROJECT**

Docket No. 08-AFC-5

PROOF OF SERVICE

Revised 11/26/08

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. 08-AFC-5
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Robert B. Liden,
Executive Vice President
SES Solar Two, LLC
2920 E. Camelback Road, Ste. 150
Phoenix, AZ 85016
rliden@stirlingenergy.com

Christine Henning
Project Manager
SES Solar Two, LLC
2920 E. Camelback Road, Ste. 150
Phoenix, AZ 85016
chenning@stirlingenergy.com

CONSULTANT

Angela Leiba, Senior Project Manager
URS Corporation
1615 Murray Canyon Road, Suite 1000,
San Diego, CA 92108
Angela_Leiba@urscorp.com

COUNSEL FOR APPLICANT

Allan J. Thompson
Attorney at Law
21 C Orinda Way #314
Orinda, CA 94563
allanori@comcast.net

INTERESTED AGENCIES

California ISO
e-recipient@caiso.com

Lynda Kastoll, Project Manager
BLM, El Centro Field Office
1661 So. 4th Street
El Centro, CA 92243
lkastoll@ca.blm.gov

Jim Stobaugh
National Project Manager
Bureau of Land Management
BLM Nevada State Office
P.O. Box 12000
Reno, NV 89520-0006
jim_stobaugh@blm.gov

INTERVENORS

***CURE**
c/o Paul F. Foley
Marc D. Joseph
Adams Broadwell Joseph & Cardozo
601 Gateway Blvd., Ste. 1000
South San Francisco, CA 94080
pfoley@adamsbroadwell.com

ENERGY COMMISSION

Jeffrey D. Byron
Commissioner and Presiding Member
jbyron@energy.state.ca.us

Jackalyn Pfannenstiel
Chairman and Associate Member
jpfannen@energy.state.ca.us

Raoul Renaud
Hearing Officer
rrenaud@energy.state.ca.us

Caryn Holmes
Staff Counsel
cholmes@energy.state.ca.us

Christopher Meyer
Project Manager
cmeyer@energy.state.ca.us

Public Adviser
publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, Mineka Foggie, declare that on December 2, 2008, I deposited copies of the attached Stirling Energy Systems Solar Two Project (08-AFC-5)- Data Request Set 1, Part 2 (#s 53-127) in the United States mail at Sacramento, CA 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.


MINEKA FOGGIE

Attachments