

CALIFORNIA ENERGY COMMISSION

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June 17, 2009

DOCKET**08-AFC-13**

DATE JUN 17 2009

RECD JUN 17 2009

Felicia Bellows
Vice President of Development
Tessera Solar
4800 North Scottsdale, Road, Suite 5500
Scottsdale, AZ 85251

RE: STIRLING ENERGY SYSTEMS SOLAR ONE PROJECT (08-AFC-13) - DATA REQUESTS SET 1, PART 1 (#s 1-91)

Dear Ms. Bellows:

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 1 of this set of data requests (#1-91) is being made in the areas of Air Quality (#1-48), Alternatives (#49), Biological Resources (#50-56), Efficiency (#57-60), Geology and Paleontology (#61), Land Use (#62-67), Noise and Vibration (#68), Soil and Water Resources (#69-85), and Waste Management (#86-91). In order to address these issues at the August 6, 2009 Data Response and Issues Resolution Workshop/BLM Scoping Meeting, written responses to the enclosed data requests are due to the BLM and Energy Commission staff on or before July 17, 2009, or at such later date as may be mutually agreeable. Part 2 of this set of data requests, including Cultural Resources, will be filed by June 26, 2009.

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

PROOF OF SERVICE (REVISED 6/16/09) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 6/17/09

HA

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 need to be understood.

DATA REQUESTS

1. 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.
2. 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: 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). The project area is currently a moderate federal PM10 nonattainment area and currently is a moderate federal 8-hour ozone nonattainment area that the California Air Resource Board has requested be reclassified as severe nonattainment.

Based on the emission estimates provided in the AFC, and the nonattainment status for PM10, the project's construction PM10 emissions (119.5 tons/year) and operating PM10 emissions (350 tons/year) exceed the applicability threshold for General Conformity analysis (100 tons per year). Staff understands that the applicant will be revising the construction and operating emission estimates; however, staff still needs to understand how the applicant plans to complete a conformity determination for the project's construction and/or operating PM10 emissions if the revised emission estimates continue to exceed 100 tons per year.

Staff anticipates that the 8-hour ozone nonattainment classification for the project site area will be revised to severe, in which the applicability thresholds for NOx and VOC will be 25 tons/year. Based on the emission estimates provided in the AFC the project's construction NOx emissions (153.4 tons/year) and VOC emissions (32.8 tons/year) exceed the applicability threshold for General Conformity analysis (25 tons per year). Staff understands that the applicant will be revising the construction emission estimate; however, staff still needs to understand how the applicant plans to complete a conformity determination for the project's construction NOx and/or VOC emissions if the revised emission estimates continue to exceed 25 tons per year.

DATA REQUESTS

3. Please identify methods that will be used to complete a conformity determination for the proposed project's operating and/or construction PM10 emissions if either of the revised emission estimates remain over 100 tons/year.

4. Please identify methods that will be used to complete a conformity determination for the proposed project's construction NO_x and VOC emissions if either revised emission estimates remain over 25 tons/year.

BACKGROUND: OPERATIONAL EMISSIONS CALCULATIONS

In its response to air quality Data Adequacy Request 1, the applicant has proposed to mitigate the project's extensive direct on-site and off-site operating emissions. Staff needs the applicant to complete a revised operations emission estimate to incorporate these emission reduction proposals.

DATA REQUESTS

5. Please provide a revised emission estimate, updating Table 5.2-13, for the mitigated operating emission sources, including the project related offsite road travel, including any changes to the emission calculations required for continuity with the responses to the other air quality data requests.
6. Please provide a revised greenhouse gas (GHG) emissions estimate for project operations, and include estimates of total fuel use by type of fuel.

BACKGROUND: CONSTRUCTION EMISSIONS CALCULATIONS

There are several data requests related to the construction emission calculations. Staff needs the emission estimate impact of these various responses summarized in a single revised construction emissions estimate.

DATA REQUESTS

7. Please provide a revised emission estimate, updating Tables 5.2-9 and 5.2-10, for the mitigated construction emission sources, including the project related offsite road travel, including any changes to the emission calculations required for continuity with the responses to the other air quality data requests.
8. Please provide a revised GHG emissions estimate for the project construction in CO₂-equivalent tons for the entire construction period, and include estimates of total fuel use by type of fuel.

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 and total trip distance. The information provided by the applicant in the 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 80 miles for heavy trucks does not seem consistent with all of the necessary finished (SunCatcher components, transmission cables, etc) material deliveries that are likely to be delivered from the Los Angeles area. 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 the Mojave Desert Air

Quality Management District (MDAQMD) jurisdiction portion of San Bernardino 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 elsewhere in the air quality data requests.

DATA REQUEST

9. 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,
 - 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.
10. For each of the materials delivery/waste removal truck trip types requested in Data Requests 9a through 9f, 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 the MDAQMD jurisdictional portion of San Bernardino County for each of these materials.
11. Based on the calculations of truck types, number of vehicles and vehicle miles traveled within the MDAQMD jurisdictional portion of San Bernardino County for Data Request 10; please provide the daily criteria pollutant emissions associated with these truck emissions.
12. Please describe the feasibility of significant materials deliveries, especially for the SunCatcher materials) by the rail line that is adjacent to 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.
13. 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.

BACKGROUND: OPERATING EMISSIONS - VEHICLE MITIGATION MEASURES

Staff is concerned that the criteria pollutant air quality benefit of the proposed project's solar energy production is being offset by significant maintenance emissions. Staff needs to understand what additional mitigation the applicant would be willing to stipulate

to, beyond that proposed in Data Adequacy Response 1, assuming such mitigation is available and cost effective.

DATA REQUEST

14. Please identify if the applicant would be willing to stipulate to a condition of certification that would require a review of available vehicle technologies, including electric and hydrogen fueled vehicles, and replacement of the proposed large gasoline fueled vehicles used for operations maintenance if lower emission vehicles are both available and not cost prohibitive.

BACKGROUND: SOIL BINDER EMISSION CONTROL ASSUMPTION

While staff agrees with the general approach proposed by the applicant, in the air quality Data Adequacy Request 1 response, to stabilize/seal the roads on the site, we want to ensure that the emission control assumption for the polymeric soil binder is reasonable. California Air Resources Board (CARB) has approved two soil binders, one of which is a polymeric compound and both are noted to provide at least 84 percent control. Staff needs additional information on the soil binder product and the specific proposed application methods to establish a reasonable approach for emission estimation for unpaved road travel during construction and operation. Additionally, staff needs to know what the applicant would be willing to stipulate to regarding the use and maintenance of the soil binder during construction and operation.

DATA REQUEST

15. Please describe the amount of soil binder that would be used (liters/square meter, or similar units), the thickness of the bound soil and how equivalent that would be to an asphalt or concrete paved surface.
16. Please provide documentation for the assumed control effectiveness for this product during construction and during operation.
17. Please, if possible, provide a sample of the bound soil at the proposed thickness using surface soils from the project site.
18. Staff needs to determine appropriate maintenance procedures for the bound soil roads to ensure they maintain a quality sealed surface that matches the emission control assumptions used for construction and operation. Please identify the ongoing measures necessary to maintain these bound soil roads and identify road maintenance procedures during construction and operation that the applicant would be willing to stipulate to in a condition of certification.

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 REQUESTS

19. Please describe the assumptions used to determine the number of operating maintenance vehicles and their daily paved and unpaved vehicle miles traveled.
20. Please describe in greater detail the specific design of the gasoline-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 trucks will carry the water and the cleaning apparatus equipment will somehow be attached to the water tanks on the vehicles.

21. Please describe the SunCatcher dish washing requirements including:
 - How the dishes are washed, both for normal and mechanical washes;
 - Time of day for washing;
 - How long it takes each dish to be washed;
 - How many dishes can be washed per hour or shift for each mirror washing tanker truck crew;
 - The size of each wash crew; and
 - The basis for the need to wash each dish monthly.

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. Staff also believes that the unpaved road dust emissions will need to be re-estimated due to the proposed use of soil binders to create sealed roads. Additionally, the emission calculations assume a very low silt loading (gravel road value of 4 percent) during both construction and operation without an explanation of how this will be ensured considering that the limited sieve data in Appendix E of the AFC shows a surface silt contents that averages at about 8 percent. 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 REQUESTS

22. 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.
23. Please identify if the applicant is willing to stipulate to graveling the onsite unpaved roads during construction before they are sealed to reduce the silt loading, or provide additional surface soils sieve data that shows that the 4 percent silt content assumption is representative of the site.
24. Please defend the selected 85 percent watering dust control efficiency during construction for unpaved roads, prior to sealing, given the very large site unpaved road network and the seasonally high evaporation and potentially high percolation rates for the applied water.
25. Regardless of the emission factor calculation method used, please correct the vehicle weight assumptions as representative for the vehicle types assumed.
26. Please revise the fugitive dust emission calculations to reflect the operations mitigation measures proposed in the air quality Data Adequacy Request 1 response.

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 mitigated paved road vs. unpaved road emission factor per mile traveled for tanker trucks, as listed in Appendix V-3, shows the operations paved road emission factor to be greater than the unpaved road dust emission factor (0.171 lbs/mile for paved road and 0.057 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 REQUESTS

27. 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.
28. Please identify why the paved road dust emission factors for similar vehicle classes are not the same between the construction and operations emission estimates.
29. 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 page 6 of 40.

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 REQUESTS

30. 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.
31. 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 REQUESTS

32. Please describe how the trip distance assumptions for construction were determined for each vehicle type/use.
33. 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 REQUESTS

34. 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.
35. 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: 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 partial operation of the project and continuing construction 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 REQUESTS

36. Please provide an integrated schedule of project construction and operation and describe what construction and operation activities would overlap.
37. 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.

DATA REQUESTS

38. Please estimate the gasoline tank filling and vehicle refueling VOC emissions (daily and annual).

39. Please confirm that with the stipulated reduction in diesel-fueled maintenance vehicles that the 5,000 gallon diesel tank is no longer part of the proposed project.

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

The construction emissions are under revision by the applicant due to their potential overestimation and the related regulatory impacts. Therefore, the construction modeling will need to be redone to incorporate the revised emission estimates. Also, there are other construction modeling issues, such as the modeling files using a daily construction time frame of 7 am to 4 pm, while the AFC on page 3-53 notes that heavy construction would be scheduled to occur from 7 am to 7 pm. Additionally, the use of area sources to model the impacts may overestimate the impacts from the heavy equipment that will have buoyant plumes.

DATA REQUESTS

40. Please revise the construction emission dispersion modeling analysis as necessary to incorporate changes to the construction emissions estimate.
41. Please defend the selection of the area source locations used in the modeling analysis for the determination of maximum short-term emissions impacts and maximum annual emission impacts.
42. 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.

BACKGROUND: OPERATIONS EMISSIONS DISPERSION MODELING

The applicant's operations emission dispersion modeling only includes 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

43. Please provide a revised operations modeling analysis, per the modeling protocol provided in air quality Data Adequacy Request 1 response, which includes all on-site operations emission sources.

BACKGROUND – OPERATING EMISSIONS GREENHOUSE GAS ANALYSIS

Staff's GHG 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 (1,840,000 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

44. 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 DESIGN

The AFC is inconsistent regarding the emergency generator design and emission factors. Section 5, page 5.2-38, notes that the proposed engine will meet EPA Tier 3 standards, while Appendix V-3 provides information for an engine that only meets Tier 1 standards for NOx. Additionally, the applicant's MDAQMD permit application use the same NOx emission rate that does not meet Tier 3 engine standards while specifying a Tier 3 engine; and the emission factors for other pollutants (namely PM10 and CO) provided in the MDAQMD permit application do not match those provided in the AFC. Staff needs clarification regarding the proposed engine and its emissions.

DATA REQUEST

45. Please provide an updated consistent emission factor basis for the proposed Tier 3 emergency generator engine.

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 REQUESTS

46. Please provide a copy of the cumulative impact and modeling analysis, as proposed on Page 5.2-36 of the AFC.
47. Please provide a copy of cumulative project list to be provided by MDAQMD as noted on Page 5.2-36 of the AFC.

BACKGROUND: AIR QUALITY PERMIT APPLICATION PROCESS

A Determination of Compliance (DOC) analysis from the Mojave Desert Air Quality Management District (MDAQMD or "District") will be needed for staff's analysis. 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

48. Please provide copies of any official submittals and correspondence to or from the District within 5 days of their submittal to or their receipt from the District.

Technical Area: Alternatives
Author: Suzanne Phinney

BACKGROUND

In Section 4.0 Alternatives, page 4-25 of the AFC, the proposed SES Solar One site depicted on Figure 4-1 (Proposed and Alternative Siting Areas) does not match the project site identified in Figure 1-2 of the Project Description (page 1-10). Additionally, there are sections within the general outline shown on Figure 1-2 that are not considered part of the project; these areas are not identified in the general outline of the Proposed Solar One Siting Area shown in Figure 4-1. It also appears that certain areas within the project site identified in Figure 1-2 may include donated and mitigation land affected by the BLM's May 28, 2009 Interim Policy on Management of Donated Lands and Lands Acquired with Land and Water Conservation Funds (LWCF). Since Figure 4-1 does not accurately depict the amount of land required for the proposed site, a visual comparison to alternative sites shown on Figure 4-1 is misleading.

DATA REQUEST

49. Please provide a revised Figure 4-1 that:
- Accurately reflects the project outline shown in Figure 1-2
 - Indicates what land within the project boundary is not currently considered part of the project
 - Identifies donated lands and lands acquired with LWCF funds within the project boundary and within any of the alternative sites depicted on Figure 4-1.

Technical Area: Biological Resources
Author: Joy Nishida

BACKGROUND

AFC Section 5.6.1.3 concluded that no waters of the U.S. occur on-site and that no waters regulated by California Department of Fish and Game (CDFG) occur on-site, although the USGS Project Maps in AFC Appendix G indicates a number of washes and intermittent stream courses throughout the Project site. AFC Section 5.5.1.7 states that approximately ten blue line streams pass through the Project site. These drainage paths are diverted at the railroad tracks along the south side of the Project site and eventually drain toward Troy Lake, a dry lake bed, according to AFC Section 5.5.2.1. Under Section 1602 of the California Fish and Game Code, notification is required by any person, business, state or local government agency, or public utility that proposes an activity that will:

- Substantially divert or obstruct the natural flow of any river, stream, or lake;
- Substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake; or
- Deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

The notification requirement applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This includes ephemeral streams, desert washes, and watercourses with a subsurface flow.

In a data adequacy supplemental filing for the AFC, the applicant's response regarding contact with the U.S. Army Corps of Engineers (USACE) stated that the USACE indicated during a site visit that drainage features appear not to be under federal jurisdiction, and that the USACE has not indicated a date when they will make a final determination on jurisdiction for the Project site. Also, since it is possible that waters of the state may be on-site, impacts to potential waters of the state will require a Streambed Alteration Agreement by California Department of Fish and Game (CDFG) before any disturbance.

DATA REQUESTS

50. Please provide the final determination from the USACE regarding whether or not jurisdiction will be asserted. Should the USACE assert jurisdiction, please explain the project-specific circumstances which would necessitate substantial temporary or permanent impacts to jurisdictional waters.
51. Please contact CDFG and provide a record of correspondence regarding the need to complete a Streambed Alteration Agreement. Should a Streambed Alteration Agreement be needed, please explain the project-specific circumstances that would necessitate substantial temporary or permanent impacts to jurisdictional waters of the State.

BACKGROUND

AFC Section 5.6.12.1 discusses species-specific mitigation measures proposed by the applicant. The proposed Mojave fringe-toed lizard (MFTL) mitigation measure BIO-3 in the AFC states that “A temporary enclosure fence around the one MFTL habitat patch within the Project Site will be erected to protect MFTL from adjacent construction activities.” Although this impact avoidance and minimization measure would lessen impacts to MFTL during construction, there is no discussion of what will be done when construction is completed and operations and maintenance activities, such as mirror washing, begin. According to AFC Section 5.5.2.3, it is anticipated that the estimated 34,000 SunCatchers will undergo mirror washing approximately eleven times per year. It is not specified in the AFC what time of the day the mirror washing will occur. Should the mirror washing occur between dusk and dawn, special-status species such as the MFTL could be impacted should it be on the roads during mirror washing. In a data adequacy supplemental filing for the AFC, the applicant’s response regarding dust emissions impacts to sensitive species habitat stated that the region is subject to heavy levels of windblown dust and sand. Since the SunCatchers will be subject to windblown dust and sand, it is possible that the mirrors will need to be washed more frequently than the eleven times per year stated in the AFC. Impacts to MFTL may increase as a result of possible increased traffic due to mirror washing.

DATA REQUEST

52. Please provide a discussion on MFTL impact avoidance and minimization measures to be implemented during operations and maintenance activities.

BACKGROUND

AFC Section 5.5.2.3 page 5.5-9 discusses wastewater discharge from the reverse osmosis unit. Two lined evaporation ponds, double-lined impoundment, or equivalent each sized to hold approximately 3 million gallons, will be used to undergo a 1 year evaporation process. While one pond is undergoing the evaporation process, the other pond will be placed in operation to collect the wastewater discharge. The total dissolved solids in the wastewater ponds will be more concentrated than the water source. Though the applicant has proposed that the evaporation pond water be monitored quarterly for trace element concentrations to determine if there is a concern regarding wildlife access to the pond water, sodium toxicity is the greater threat to wildlife. Sodium toxicity is known to be a significant threat to birds, especially when associated with man-made bodies of water such as evaporation ponds in desert environments as reported in the October 2007 Compliance Report for SEGS VIII and IX (Luz 2007). In the summer of 2007, 19 waterfowl deaths due to salt poisoning at the Harper Lake evaporation ponds were reported. In addition to waterfowl deaths, 24 small mammal deaths were reported in 1999 (FPL 1999, FPL 2000). The bird deaths documented from Harper Lake are not limited to waterfowl. The deaths of shore birds, birds of prey, and gulls have also been associated with the evaporation ponds. California Department of Fish and Game (CDFG) recommends the interior slope of man-made ponds have a slope of 3:1 or steeper to discourage shorebird use. Netting or covers and hazing techniques can also be used to discourage bird use. Staff needs detailed information on the proposed evaporation pond monitoring plan and methods to determine if this will adequately address potential impacts to wildlife.

DATA REQUESTS

53. Please provide details on how the evaporation ponds will be designed, built, and operated to discourage wildlife use.
54. Please provide a detailed monitoring plan for the evaporation ponds, including:
 - a. a discussion of the frequency and nature of monitoring;
 - b. elements that will be monitored (e.g., sodium);
 - c. a list of resident and migratory species that could be at risk;
 - d. remedial actions that could be taken if the ponds become a hazard for wildlife; and
 - e. events that might trigger implementation of those remedial actions.

BACKGROUND

AFC Section 5.6.10 page 5.6-25 discusses the attraction of human subsidized predators to developed areas within the desert. Ravens are known to prey upon young desert tortoise, a federally and state protected species and the Mojave fringe-toed lizard (MFTL), a state Species of Special Concern. The SunCatchers and perimeter fencing pose as potential perching sites, thus increasing predation on MFTL. However, ravens are migratory species, which are state and federally protected by the Migratory Bird Treaty Act. Staff needs details on a raven 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. Staff needs this information to complete its analysis.

DATA REQUEST

55. Please provide a detailed raven monitoring and control plan that discusses:
 - a. how the monitoring and control plan will be coordinated with CDFG and U.S. Fish and Wildlife Service;
 - b. area covered by the plan;
 - c. potential use of perch-deterrent devices and locations of their installation;
 - d. measures that might reduce raven presence and nesting activities (e.g., removing food items, garbage, and access to water);
 - e. a monitoring plan, including discussion of survey methods and frequency for establishing baseline data on pre-project raven numbers and activities, assessing post-project changes from this baseline, and the funding mechanism for the monitoring plan;
 - f. remedial actions that would be employed (e.g., nest removal) if raven predation of MFTL or desert tortoise is detected;
 - g. the circumstances that would trigger the implementation of remedial actions; and

- h. payment of an in-lieu fee to a third party account established by the USFWS to support a regional raven monitoring and management plan.

BACKGROUND

AFC Section 5.6.1.2 page 5.6-11 states that two individual burrowing owls were observed on-site during 2008 surveys and that further investigation would be required to assess if the owls are residents or migrants. The California Burrowing Owl Consortium (1993) guidelines call for a Phase III nesting season survey and winter survey should no owls be observed during the nesting season survey.

DATA REQUEST

- 56. Please provide the results of Phase III nesting season and winter burrowing owl surveys.

Technical Area: Efficiency
Author: Steve Baker

BACKGROUND:

Staff must examine the efficiency with which a project consumes energy. A typical power plant consumes fuel, usually in the form of natural gas. The SES Solar Two Project will consume no natural gas directly, but will utilize hydrogen, both to initially fill the Stirling engines, and to replenish hydrogen that leaks from the engines. Hydrogen is commonly manufactured from natural gas, and thus represents fuel consumption by the project. Alternately, hydrogen can be produced from water by electrolysis, which consumes electricity. In California, this electricity likely comes from natural gas-fired power plants, thus representing fuel consumption by the project.

DATA REQUEST

57. Please provide information on how much hydrogen would be required to initially fill all 36,000 Stirling engines, as well as the project hydrogen supply and storage system.
58. Please provide information on how much hydrogen would be required annually to replenish leakage.
59. Please describe the source of hydrogen for the project, including a description of the process employed and the consumption of natural gas and/or electricity by that process.
60. Please quantify the amount of electrical energy required to compress the hydrogen to its storage pressure.

Technical Area: Geology and Paleontology
Author: Dal Hunter, Ph.D., C.E.G.

BACKGROUND

The Confidential Paleontological Resources Technical Report, provided separately from the AFC, states that a paleontological archival records search was conducted for the Stirling Energy Systems Solar One Project by the San Bernardino County Museum. These reports provide an inventory of paleontological resources in the museum's collection from the project site, as well as from geological units in the surrounding area that are present on the site. The reports also give independent assessments of the paleontological sensitivity of geological units and the potential for impacting any paleontological resources.

DATA REQUEST

61. Please provide a copy of the archival records search report prepared by the San Bernardino County Museum.

INTRODUCTION

The SES Solar One Project site is on public land that is administered by the BLM. The amount of land to be fenced and developed within the BLM-administered public areas is estimated to be 8,230 acres.

In addition, as stated in the AFC (page 5.9-15),

“...[t]here are some private parcels (zoned Resource Conservation) that are located within the Project boundary. These private parcels would be under the jurisdiction of the County of San Bernardino. However, according to the AFC “...they are not owned or controlled by the Project and will not be enclosed within the Project fence line, and they are not considered part of the Project.”

BACKGROUND

As stated in the AFC on page 5.9-5,

“...[t]he amount of land to be fenced and developed within the BLM-administered public areas is estimated to be 8,230 acres. Private lands located within the Project boundary are labeled as Not A Part (NAP) of the Project and development of the solar fields is not anticipated to occur on them. Land owners will be granted access to their parcels.”

AFC Figure 5.9-3 (Parcel Boundary Map Solar One Project) illustrates the project boundary, as well as affected parcel boundaries, privately owned parcels, utility corridor areas, private lands, and parcels that are “Not a Part (NAP)” of the project.

On AFC Figure 5.9-3, Parcels 0529-211-28, 0529-211-29, and 0529-211-03 are illustrated as privately-owned parcels (i.e., private land) within the project boundary that are NAP of the project. In Appendix C (Property Owners Within 1,000 Feet of the Project Site) of the AFC, the ownership and acreages of these privately owned parcels are identified as follows:

- Parcel 0529-211-28: 41.64 acres (individual land owner)
- Parcel 0529-211-29: 42.89 acres (individual land owner)
- Parcel 0529-211-03: 70.63 acres (owned by Pacific Gas & Electric)

The land ownership information provided in the various portions of the AFC described above appears to be contradictory.

DATA REQUESTS

62. Please verify that the “project boundary” is the same as the “amount of land to be fenced” (i.e., 8,230 acres).
63. If private lands are NAP of the project and the entire project boundary only includes BLM-administered public lands, please clarify the reasons why portions of the three referenced parcels are shown as within the project boundary on AFC Figure 5.9-3.

64. If the privately-owned parcels of land are within the project boundary, please indicate the existing on-site land uses and the planned Project use (including acreages) of the portions of these parcels within the Project boundary.
65. If the privately-owned parcels of land are within the project boundary, please specify if and when the applicant intends to merge the project parcels within the non-BLM portions of project lands into one legal parcel.
66. If the applicant intends to merge the private parcels, when would the parcel merger process be initiated with San Bernardino County? Please provide the timing for completion of this process.
67. If the applicant does not intend to merge the private parcels, please specify the reasons.

Technical Area: Noise and Vibration
Author: Erin Bright

BACKGROUND

The applicant asserts in section 5.12.2.2 of the AFC that “an increase of sound levels at both sensitive receptors would be less than 5dBA,” however no ambient noise data is provided for the noise sensitive receptor located east of the project site, identified as SR2 on Figure 5.12-1 of the AFC, to support this claim.

DATA REQUEST

68. Please provide 25-hour noise measurement data, including Leq and L90 values as a minimum, for sensitive receptor SR2.

Technical Area: Soil & Water Resources
Author: Casey Weaver

BACKGROUND

As stated in Section 3.7.1, water requirements for the facility will be drawn from the aquifer by way of an “adjacent well” with the possibility of additional wells being added to provide water supply as needed. Section 3.7.2 states although a pump test and water quality tests were performed on a “nearby existing well”, the data was insufficient to make proper determinations. Section 3.7.3 states that water for SunCatcher mirror washing, fire water and potable water use will be provided from the “Primary Water Well” located on site. It is not clear where these wells are located and how they are related. Staff needs to know which well(s) were tested and how they are related to one another and to the project.

DATA REQUESTS

69. Please clarify if the “adjacent well”, “nearby existing well” and the “Primary Water Well” are the same well or different wells.
70. If the wells are different from each other, please identify the locations of the wells and indicate which well is proposed for project use.

BACKGROUND

An aquifer test conducted in the “nearby existing well” indicated that collected data was insufficient to make proper determinations of aquifer characteristics and production capacity. However the applicant concluded that there is a sufficient quantity and quality of water available for project construction and operation. It is not clear how the applicant determined there is sufficient water available for project construction and operation. Staff also understands the applicant plans to conduct another aquifer test in a new well to be constructed on site. Staff needs sufficient data to evaluate whether an adequate groundwater supply is available and if there are any potential environmental impacts from its use.

DATA REQUESTS

71. Please explain how Solar One determined that a sufficient volume of groundwater is available for project use, where that water will be obtained, and at what rate the water will be produced.
72. Once constructed, please provide the aquifer data derived from testing of the primary water well.
73. Please provide an explanation of how the use of the primary well for project construction and operation will not create a significant environmental impact.

BACKGROUND

Peak operations water demand is estimated at 43.7 gpm. Construction water demand is estimated at ten times the peak operations water demand or 437 gpm. In section 3.9.1 of the AFC, it is estimated that the construction period will last 41 months. It is not clear what the water demand is expected to be during the 41 month construction period. Staff needs a more detailed construction schedule that identifies the water application schedule and rate of application to evaluate water use requirements during the

construction period and whether there would be short term impacts to other users or environmental resources.

DATA REQUESTS

74. Please provide the proposed number of hours per day and number of days per month that water will be used for construction.
75. Please provide the daily, monthly and cumulative volume of water expected to be used during the construction period.
76. Please provide groundwater modeling results that consider the drawdown impacts from the construction water use and identify whether there would be any potential impacts.

BACKGROUND

In Section 3.7.7, it is stated that additional water wells will be drilled to augment the primary water well as needed to meet the peak construction water demands. There is no indication of how many wells will be necessary, where they will be located, their construction details, or how the locations and number of wells will be determined. Staff needs to understand the procedure for determining if additional wells will be needed, their likely location(s), and how they will be constructed.

DATA REQUESTS

77. Please describe the locations and well construction details of the proposed additional wells.
78. Please provide the decision making process for determining if additional wells will be needed.
79. Please provide the procedure and schedule for installing the additional wells.

BACKGROUND

On page 3-38 of the AFC, it is stated that the demineralized water line between the Main Services Complex and the Satellite Services Complex will be used to supply well water for dust control for the portion of the project site located south of the BNSF railway. This line will be constructed utilizing a steel casing that will be jacked under the BNSF railway. Often, permission for encroachment within railroad right-of-ways is difficult to obtain. Staff needs confirmation that BNSF is agreeable to the placement of the line beneath the tracks to ensure the applicant can conduct the construction as planned and there will be no impacts on project development.

DATA REQUEST

80. Please provide a letter of authorization from BNSF indicating their approval of the pipeline being jacked under their railway.

BACKGROUND

Project construction may induce water and wind erosion at the power plant site. Storm water runoff may also contribute to erosion and sedimentation as well as transport pollutants off site. Storm water will be collected, contained and managed under Waste Discharge Requirements (WDR) developed by the Lahontan Regional Water Quality Control Board during both construction and operation. The AFC briefly discusses some of the features and best management practices that will be implemented for this project.

However, they are not described in sufficient detail to demonstrate that they will function as intended and/or comply with State and local requirements. In order to evaluate adequacy of proposed measures to address and mitigate hazards from site erosion and sedimentation, staff needs to review a Drainage, Erosion and Sediment Control Plan (DESCP) prepared for the project site.

DATA REQUEST

81. Please provide a draft DESCPC that ensures protection of water quality and soil resources of the project site and all linear facilities for both the construction and operation phases of the project. This plan shall address appropriate methods and actions for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, meet local requirements, and identify all monitoring and maintenance activities. The draft plan shall be consistent with the grading and drainage plan and may incorporate by reference any storm water pollution prevention plan developed in conjunction with any WDR.

Presented here for your use, as needed, are the elements of the final DESCPC that you will ultimately be required to provide:

- a. Vicinity Map – A map shall be provided indicating the location of all project elements with depictions of all significant geographic features to include watercourses, washes, irrigation and drainage canals, and sensitive areas.
- b. Site Delineation – The site and all project elements shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.
- c. Watercourses and Critical Areas – The DESCPC shall show the location of all nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site.
- d. Drainage – The DESCPC shall provide a topographic site map showing all existing, interim, and proposed drainage systems. drainage area boundaries and watershed sizes in acres, and the hydraulic analysis to support the selection of best management practices (BMPs) to divert off-site drainage around or through the site and laydown areas. Spot elevations shall be required where relatively flat conditions exist. The spot elevations and contours shall be extended off site for a minimum distance of 100 feet in flat terrain.
- e. Clearing and Grading – The plan shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography tying in proposed contours with existing topography shall be illustrated. The DESCPC shall include a statement of the quantities of material excavated or filled for each element of the project (for example, project site, transmission corridors, and pipeline corridors), whether such excavations or fill is temporary or permanent, and the amount of such

material to be imported or exported or a statement explaining that there will be no clearing and/or grading conducted for each element of the project.

- f. Project Schedule – The DESCPC shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each project element for each phase of construction.
- g. Best Management Practices – The DESCPC shall show the location, timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading, during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment control BMPs applied to disturbed areas following construction.
- h. Erosion Control Drawings - The erosion control drawings and narrative shall be designed and sealed by a professional engineer or erosion control specialist.

BACKGROUND

In a letter dated June 9, 2009, sent to the Energy Commission on behalf of CURE, it was noted that several seasonal lakes (playas) with riparian vegetation occur within the site boundaries. These features were not identified or discussed in the AFC. Staff needs additional information to evaluate the impact of site development on these features.

DATA REQUESTS

- 82. Please provide a description of these hydrologic features, and determine if they meet the definition of “waters of the US.”
- 83. Please provide a discussion regarding the placement of project structures and appurtenant facilities with regard to the location of these features.
- 84. Please explain how the seasonal lakes are affected by project site hydrology.
- 85. Please discuss whether project groundwater use would impact these seasonal lakes and riparian vegetation.

Technical Area: Waste Management
Author: Ellie Townsend-Hough

BACKGROUND

The Integrated Waste Management Act of 1989 (AB 939) established landfill waste diversion goals of 50 percent by the year 2000 for state and local jurisdictions. To meet the solid waste diversion goals, many local jurisdictions have implemented Construction and Demolition Waste Diversion Programs.

DATA REQUESTS

86. Please indicate whether the county of San Bernardino operates a Construction and Demolition Waste Diversion Program.
87. Please provide information on how the SES Solar One Project will meet each of the requirements of the program cited in the previous data request.

BACKGROUND

For any site in California proposed for the construction of a power plant, the applicant must provide documentation about the nature of any potential or existing releases of hazardous substances or contamination at the site. If potential or existing releases or contamination at the site are identified, the significance of the release or contamination would be determined by site-specific factors, including, but not limited to: the amount and concentration of contaminants or contamination; the proposed use of the area where the contaminants/contamination is found; and any potential pathways for workers, the public, or sensitive species or environmental areas to be exposed to the contaminants (Siting Regulations Appendix B (g)(12)(A)).

In order to comply with the regulation, the applicant conducted a Phase I Environmental Site Assessment (ESA) in accordance with ASTM Standard E 1527-05 guidelines. In Appendix A of the ESA, photographs 12 through 16 show pictures of the former Logan Mine rock crusher/ore processing area. The photographs depict relict structures and equipment. One feature of specific attention is a concrete lined basin. Within the basin, discolored soil and dead vegetation is shown. There is no description in the Application of Certification regarding the operation of the rock crusher, describing what ore was processed or how the ore was processed.

DATA REQUESTS

88. Please provide information on how the rock crusher/ore process was operated.
89. Please provide information on what ores were processed and what methods were used to process the ore and whether there may be conditions that present a health and safety risk.
90. If hazardous chemicals were used to process the ore, please conduct soil sampling and analysis to screen the site for the presence of these chemicals and determine whether further remedial action is necessary. Depending on the results of the analyses, please, provide a preliminary plan for remediation.
91. Please estimate the volume of waste that will be generated from dismantling the concrete-lined pond and the rock crusher/ore processing area and identify how it will be disposed of based on the results of further analysis discussed above.



**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 ONE PROJECT**

Docket No. 08-AFC-13

PROOF OF SERVICE

(Revised 6/16/09)

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DECLARATION OF SERVICE

I, Hilarie Anderson declare that on June 17, 2009, I served and filed copies of the attached Data Requests Set 1. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [www.energy.ca.gov/sitingcases/solarone].

The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(Check all that Apply)

FOR SERVICE TO ALL OTHER PARTIES:

 x sent electronically to all email addresses on the Proof of Service list;

 x by personal delivery or by depositing in the United States mail at Sacramento, CA with first-class postage thereon fully prepaid and addressed as provided on the Proof of Service list above to those addresses **NOT** marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

 x sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

 depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION

Attn: Docket No. 08-AFC-13

1516 Ninth Street, MS-4

Sacramento, CA 95814-5512

docket@energy.state.ca.us

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

Original Signature in Dockets
Hilarie Anderson