CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

January 28, 2008

DOCKET
07-AFC-8
DATE JAN 28 2008
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Perry H. Fontana, QEP
Vice President - Projects
Ausra, Inc.
2585 East Bayshore Road
Palo Alto, California 94303

Dear Mr. Fontana,

DATA REQUESTS 1 THROUGH 78 FOR THE CARRIZO ENERGY SOLAR FARM (07-AFC-8)

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission staff is asking for 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.

This set of data requests (#1-78) is being made in the area(s) of Air Quality, Alternatives, Biological Resources, Cultural Resources, Land Use, Noise and Vibration, Soils and Water Resources, Transmission System Engineering, Visual Resources, and Waste Management. Written responses to the enclosed data requests are due to the Energy Commission staff on or before February 27, 2008, 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 Commissioner Jackalyne Pfannenstiel, Presiding Committee Member for the Carrizo Energy Solar Farm project, and to 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) 651-8891, or email me at mdyas@energy.state.ca.us.

Sincerely,

Mary Dyas, Project Manager
Energy Facility Siting Project Manager

Enclosure
cc: Dockets 07-AFC-8

PROOF OF SERVICE (REVISED 1/10/08) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 1/28/08 CF

CARRIZO ENERGY SOLAR FARM (07-AFC-8)
DATA REQUESTS

Technical Area: Air Quality
Author: Tuan Ngo

BACKGROUND:

Facility Operational Emissions

The AFC, page 5.2-2, states that the project would occupy approximately 640 acres. The AFC is silent, however, in documenting emissions from vehicles and equipment used to maintain the solar mirrors. For example, there is no mention of the frequency of washing the mirrors and whether or not these activities would cause vehicle/equipment emissions of NOx, VOC, PM2.5 and PM10, and how much. Thus the facility operational emissions may not be fully quantified.

DATA REQUEST

1. Please provide a description of the facility maintenance activities, including, but not limited to, cleaning the solar mirrors, vegetation suppression, grading, reapplication of dust suppressants, and the number and type of equipment and/or vehicles utilized for such activities.

2. Please provide an estimate of emissions of NOx, VOC, PM2.5 and PM10, including fugitive PM2.5/PM10, caused by the maintenance equipment, vehicles and activities.

Technical Area: Alternatives
Author: Somer Goulet M.S.E.L.

BACKGROUND

AFC page 4-1, Section 4.2.2 states that the Daggett-Soppeland Alternative Site had cleared many of the screening criteria. Section 4.2.2 goes on to state that several key factors were missing, specifically, available access to transmission was restricted at this site. The alternative site analysis does not identify what key factors were met, what key factors were missing and why transmission access was unavailable. Additionally, the AFC does not address whether water is available for the alternative site and if construction of a water pipeline would be necessary. Also, information regarding proximity to sensitive receptors (e.g. schools, residences) was not provided in the discussion of the alternative site. Staff requires the above information in order to compare and contrast alternative sites.

DATA REQUEST

3. Please explain why available access to transmission was restricted.

4. Additionally, please provide infrastructure data as well as sensitive receptor information specific to the Daggett-Soppeland Alternative Site.
   a. Please identify the length of new transmission line and water pipeline, if any, that would be required.
   b. Please discuss whether a switchyard would need to be constructed.
   c. Please identify and describe the closest sensitive receptors and state where they are located.

BACKGROUND

AFC page 4-2, Section 4.2.3 states that the Harper Lake Alternative Site had cleared many of the screening criteria. Section 4.2.3 goes on to state that the site was conducive to the CESF project; however, it is controlled by private parties and is considered cost and time prohibitive.

The alternative site analysis does not identify why the site is cost and time prohibitive nor does it address whether or not the necessary infrastructure (e.g., transmission line interconnection, water pipeline) is currently available at the site. Also, information regarding proximity to sensitive receptors was not provided in the analysis.

DATA REQUEST

5. Please explain why the Harper Lake Alternative site is cost and time prohibitive.

6. Please provide infrastructure data as well as sensitive receptor information specific to the Harper Lake Alternative Site.
   a. Please identify if new infrastructure would be necessary, and the length of new transmission line and water pipeline that would be required.
   b. Please discuss whether a switchyard would need to be constructed.
   c. Please identify and describe the closest sensitive receptors and state where they are located.

BACKGROUND

AFC page 4-2, Section 4.2.4 states that the Kern County Alternative Site had cleared many of the screening criteria. Section 4.2.4 goes on to state that even though this site is located near a 230-kV transmission line, several key factors were missing. The alternative site analysis does not identify what key factors were met or what key factors were missing. Additionally, the AFC does not address whether water is available and if construction of a water pipeline would be necessary. Also, information regarding proximity to sensitive receptors was not provided in the analysis.

DATA REQUEST

7. Please provide infrastructure data as well as sensitive receptor information specific to the Kern County Alternative Site.
   a. Please identify the length of new water pipeline, if any, that would be required.
   b. Please discuss whether a switchyard would need to be constructed.
   c. Please identify and describe the closest sensitive receptors and state where they are located.

BACKGROUND

AFC page 4-2, Section 4.2.5 states that the Old Mine Alternative Site had restrictions similar to the Daggett-Soppeland Alternative site; however, the AFC does not identify what key factors were met or what key factors were missing. Additionally, the AFC does not address whether or not water is available and if construction of a water pipeline would be necessary. Also, information regarding proximity to sensitive receptors was not provided in the analysis.

DATA REQUEST

8. Please provide infrastructure data as well as sensitive receptor information specific to the Old Mine Alternative Site.
   a. Please identify what key factors were met and were not met, the length of new transmission line and water pipeline, if any, that would be required.

b. Please discuss whether a switchyard would need to be constructed.

c. Please identify and describe the closest sensitive receptors and state where they are located.

Technical Area: Biological Resources
Author: Brian McCollough

BACKGROUND

Artificial lighting can alter the natural patterns of light and dark in an ecosystem. Animals can be attracted or repelled by direct glare, constant illumination, fluctuating lighting levels, and sky glow. Section 3.4.10.1 of the AFC describes the CESF lighting plan, and states that the plan will meet minimum safety requirements while keeping light emissions to a minimum (p. 3-22).

DATA REQUEST

9. a. Please describe the lighting plan measures that will be implemented to ensure that light is directed where necessary while minimizing offsite illumination and glare.

   b. Please describe the fixtures and design features that will be used to safely light the site while avoiding lighting impacts to biological resources.

BACKGROUND

The proposed project is habitat for the federal and state endangered San Joaquin kit fox. The proposed road crossings of the drainage channel in the laydown area need to be filled and may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (USACE). If the USACE determines that the drainage is not within its jurisdiction, then the applicant will lack a federal agency nexus. It would need to consult directly with the U.S. Fish and Wildlife Service (USFWS) through the Federal Endangered Species Act Section 10 process, which requires the lengthy preparation of a Habitat Conservation Plan (HCP) for federally endangered species impacted by the project. The USFWS-approved Biological Assessment (BA) or HCP and agreed upon mitigation needs to be provided so staff can complete the Staff Assessment.

DATA REQUEST

10. Please provide a status update on the anticipated schedule for the USACE determination of wetland status and preparation of the BA.

BACKGROUND

AFC Section 5.6.5 discusses LORS compliance related to biological resources. However, it does not discuss compliance with San Luis Obispo County's kit fox habitat compensation ratios map, (www.sloplanning-maps.org). The County's map shows the project site in a 3:1 habitat compensation ratio zone, while the construction laydown area is in a 4:1 compensation ratio zone. This contrasts with the 1:1 habitat compensation ratio suggested in Section 5.6.4.1.1.3 of the AFC. The USFWS has indicated that off-site mitigation land will need to be set aside in the Carrizo Plains area

so as to benefit the population of San Joaquin kit fox (S. Jones, personal communication, 1/16/08).

DATA REQUEST

11. Please provide a discussion of the status of proposed off-site habitat compensation lands, including communications with the USFWS, California Department of Fish and Game (CDFG), and the county regarding the appropriate mitigation ratios and location of mitigation land.

BACKGROUND

The AFC lacks a detailed project description for the project perimeter fencing and the solar receivers as they relate to biological resources. Additional information is needed to analyze impacts because project-related facilities may offer increased perching opportunities for raptors and other predatory birds. The project site may, after construction, potentially offer habitat for kit fox and other species of concern.

DATA REQUEST

12. Please provide a description of proposed perimeter fencing and solar receivers, including a discussion of potential bird perching sites and measures that may be taken to reduce perching opportunities.

BACKGROUND

Section 3.8 addresses closure of the project following the cessation of facility operations and states that the decommissioning plan will ensure environmental protection. Permanent closure is an issue of concern regarding biological resources due to the proposed facility location on a relatively large and undisturbed habitat area as well as the potential threats to endangered species posed by abandoned equipment and hazardous materials. Although page 3-46 states that "conditions that would affect the decommissioning decision are largely unknown at this time, these conditions would be presented to the Energy Commission and San Luis Obispo County when more information is available," staff needs more information on facility closure as it relates to biological resources to complete staff's assessment.

DATA REQUESTS

13. Please describe the likely components of a closure plan (e.g., decommissioning methods, timing of any proposed restoration, restoration performance criteria) and discuss each relative to biological resources and specifically species of concern such as San Joaquin kit fox.

14. Please describe the potential funding (e.g., a bond or sinking fund) and/or legal mechanisms for decommissioning and restoration of the project site that could be used:

    a. at the end of operations; and

    b. in the event of bankruptcy or the untimely closure of the facility for financial reasons.

15. Please provide a discussion of facility closure requirements of the County of San Luis Obispo.

Technical Area: Cultural Resources
Author: Beverly E. Bastian

BACKGROUND

The Facility Description section of the Application for Certification (AFC) states, "Foundation excavations will be prepared as required for the STG, transformers, and other heavy equipment. Prior to excavation, underground structures will be located and taken [sic] protected or removed" (p. 3-30). To fully identify potential cultural resources on the project site and to assess all potential project impacts to cultural resources, staff needs clarification on "underground structures" present on the project site and their proposed treatment.

DATA REQUEST

16. Please describe:
    a. All underground structures the applicant expects to encounter on the project site during foundation excavations; and
    b. The treatment proposed for these underground structures.

BACKGROUND

The AFC indicates that it is anticipated that two PG&E structures, the Midway Substation and the Morro Bay-Midway 230-kV Line 1, would have to be modified and upgraded to accommodate the output of the proposed Carrizo Energy Solar Farm (CESF). The reader is directed to Section 3.6 for further discussion, but further information cannot be found there. Nor did a search of other sections of the AFC provide additional information on transmission system upgrades and modifications.

Staff notes that if the upgrades include reconductoring, the applicant would need to provide a revised project description with a map showing the segments of transmission line that would have to be reconductored and would probably have to conduct cultural resources survey of the areas under and adjacent to those segments.

The applicant did not record the Midway Substation because its location is distant from the project area. The applicant, however, identified and recorded the Morro Bay-Midway Transmission Corridor as one of four previously unrecorded properties within the proposed CESF project area (p. 5.7-21). The Morro Bay-Midway 230-kV lines in the corridor were constructed between 1943 and 1952 to bring power from the Sierra foothills to central and southern California, so the transmission lines are of sufficient age to be potential historical resources, but the applicant rejected the Morro Bay-Midway 230-kV lines as being potentially eligible for the California Register of Historical Places (CRHR) because they did not meet any of the four eligibility criteria. The applicant also stated that some towers lacked integrity because they had been fenced with barbed

wire (p. 5.7-24). The applicant did not provide detailed discussion or evidence that the Morro Bay-Midway 230-kV lines fail to meet CRHR eligibility criteria and lack integrity.

If the Morro Bay-Midway 230-kV Line 1, into which the proposed CESF would loop to interconnect to PG&E's transmission system, would have to be modified or upgraded to accommodate the output of the proposed power plant, staff needs more information to fully assess the impacts of the proposed CESF on this resource.

If the Midway Substation is over 45 years old and would have to be modified or upgraded to accommodate the output of the proposed CESF, staff needs more information to fully assess the impacts of the proposed CESF on this resource.

DATA REQUESTS

17. For the Morro Bay-Midway 230-kV Line 1:
    a. Please have a qualified architectural historian provide a detailed discussion, with supporting evidence, of the eligibility of the transmission line under CRHR criteria 1 and 3.
    b. Please have a qualified architectural historian provide a detailed discussion of the integrity of the transmission line, focusing on the design and materials of the towers, conductors, and insulators.
    c. Please provide a detailed description of the modifications that would be made to the Morro Bay-Midway 230-kV Line 1 to accommodate the output of the proposed CESF.
    d. Please have a qualified architectural historian provide an assessment of the impacts of the modifications to the integrity of the transmission line.

18. If the Midway Substation is older that 45 years:
    a. Please have a qualified architectural historian provide a detailed discussion, with supporting evidence, of the eligibility of the substation under CRHR criteria 1 and 3.
    b. Please have a qualified architectural historian provide a detailed discussion of the integrity of the substation, focusing on its design and materials.
    c. Please provide a detailed description of the modifications that would be made to the Midway Substation to accommodate the output of the proposed CESF.
    d. Please have a qualified architectural historian provide an assessment of the impacts of the modifications to the integrity of the substation.

Technical Area: Land Use
Author: Negar Vahidi

BACKGROUND

As part of its land use analysis, the Energy Commission staff needs to know whether San Luis Obispo County would normally require the Carrizo Energy Solar Farm (CESF) to obtain a Minor Use Permit (MUP), and/or due to potential inconsistencies with the County Land Use Ordinance (LUO), a Conditional Use Permit (CUP), but for the exclusive jurisdiction and permit authority of the Energy Commission. Staff will be sending a letter to the County requesting that the County provide the conditions they would attach to these entitlements if the County had permitting authority.

As stated in the AFC, the San Luis Obispo County General Plan land use designation for the site and proposed transmission line is Agriculture; and the site is zoned Agricultural District (AG). According to the AFC, energy production is an unclassified conditional use in the AG zone district and electrical generation is an allowable use within the AG zone, subject to the approval of a MUP.

DATA REQUESTS

19. If the project would need a MUP and/or CUP, please provide documentation of the County's findings that would be included as part of each permit, and the conditions (if known) that San Luis Obispo County would place on the project.
    a. Please provide a timeline as to when these conditions would become available to staff.

20. Please state whether you have obtained San Luis Obispo County's position on the proposed project's consistency with its General Plan and Land Use Ordinance. If so, please provide it.

BACKGROUND

Section 22.10.090 (Height Measurement and Height Limit Exceptions) of the Land Use Ordinance (LUO) Title 22 of the San Luis Obispo County Code, limits the height of habitable structures within the "Agriculture, Rural Lands" land use category (Subsection #C.1) to 35 feet. Based on the Supplemental Information in response to Data Adequacy Request No. 27, the applicant has indicated that given discussions with the County, the "...exception #C.2.c.7, Public Facilities, would exempt such facilities from the height limit requirements." The tallest habitable structure proposed as part of the CESF is the 40-foot tall Control and Administration building. Based on our review of the County LUO, it is unclear to staff how this exception brings the CESF into conformance with the County code regarding height restrictions, as exception #C.2.c.7 applies to poles and structures and does not specifically reference structures such as the CESF administration building.

DATA REQUEST

21. Please provide documentation of the County's interpretation of this exception (#C.2.c.7) and how it applies to the CESF.

BACKGROUND

Based on staff's interpretation of the LUO, exception #C.2.c.8 specifically indicates that solar collectors can not be more than five feet above the height limit specified in Subsection c.1 (i.e., no more than 40 feet in the "Agriculture, Rural Lands" land use category). However, the solar receivers at the proposed CESF would be 56 feet tall. In addition, the CESF would have several other structures above 40 feet, including a 60-foot tall steam turbine building, two 115-foot tall air cooled condensers, and a 150-foot tall transmission line pole [see table 3.4.1 (Dimensions of CESF Equipment and Structures) in the AFC].

22. Please provide documentation of the County's interpretation of this exception (#C.2.c.8) and how it applies to the CESF, and whether the CESF would be subject to issuance of a CUP to allow for development of structures that are greater than 40 feet in height.

BACKGROUND

During review of the AFC for data adequacy, staff requested information from the applicant regarding the legal status of the 640-acre parcel [Assessor Parcel Number (APN) 072-091-001] where the CESF is proposed to be constructed. On December 5, 2007, the applicant provided additional parcel information to staff, including the title report and option agreement for the CESF property (email from Seth Hopkins, URS Corporation to Eric Knight, the Energy Commission's Community Resources Unit Supervisor). Based on staff's review of the information there appears to be a recorded restriction on the project site that precludes development on one-half of the property. In addition, it should be noted that the APN referenced in Exhibit "A" attached to the option agreement is numbered 027-091-001 and not 072-091-001 as indicated to be the project parcel in the AFC and all project information provided thus far.

DATA REQUEST

23. If 072-091-001 is the correct APN number for the CESF site, please verify whether the Exhibit "A" attachment to the option agreement for the properties provided to staff is correct.

24. If the Exhibit "A" attachment to the option agreement for the CESF parcel is correct, please provide written confirmation on whether the recorded restriction on APN 072-091-001 is still in effect, and the extent to which development is precluded on the parcel.

25. If the recorded restriction on APN 072-091-001 is still in effect, please discuss what process the applicant would be required to undergo to remove the restriction and what would be the duration of this process.

Technical Area: Noise and Vibration
Author: Shahab Khoshmashrab

BACKGROUND

Section 5.12.2.1 of the AFC states that project construction will occur over a period of 35 months. (Typical power plant construction period is significantly shorter than 35 months, typically 12 to 16 months.) This section further concludes that although the construction noise predictions cited in the AFC exceed the existing noise levels at the analyzed receptors by more than 5 decibels (dB), the impacts perceived are considered to be temporary, and therefore are less than significant. Staff believes there is an issue whether a period of 35 months can be considered temporary and believes the project's potential construction impacts require further evaluation.

The following table summarizes staff's findings based on the information provided in the AFC, Section 5.12 and Appendix P.

NOISE Table 1
Construction Impacts: Increases in Daytime Ambient L_{eq} Levels, dBA

Receptor	Ambient	Project	Month of Construction Period								
			1	2	3	4-19	20-24	25-28	29	30-33	34-35
			Increase in Ambient Noise								
ML01 (residence, west of CESF site)	35	58-62	+24	+25	+26	+27	+26	+25	+25	+23	+24
ML03 (residence, northeast of CESF site)	46	62-66	+17	+18	+19	+20	+19	+18	+18	+17	+16
LT01 (School, southeast of CESF site)	47	57-61	+10	+12	+13	+14	+13	+12	+11	+11	+10

Source: CESF 2007a, AFC § 5.12, Table 5.12-2 (daytime L_{eq} levels), Table 5.12-3 (staff's calculation of average of daytime L_{eq} levels); Appendix P, Tables P-8, P-10, P-12

The following is staff's summary of the above table:

During 35 consecutive months, the increase in the daytime ambient noise levels will be

- 23-27 decibels at the residence near monitoring location ML01 (8,282 feet from the center of the power block),
- 16-20 decibels at the residence near monitoring location ML03 (5,261 feet from the center of the power block), and
- 12-14 decibels at Carrizo Plains School (20,694 feet from the center of the power block).

In order to further evaluate the impacts of project construction at the noise sensitive receptors, staff needs to know the following information.

DATA REQUEST

26. a. Please explain if the applicant has contacted the above residents and the Carrizo Plains School officials to discuss construction noise impacts. If yes, please state the positions of these neighbors in this regard.

    b. Please provide the residents' and school officials' contact information.

27. Please discuss whether residents living in the above properties are likely to be present in their residences during the construction hours of 7:00 am to 7:00 pm Monday through Friday.

28. Please identify the hours of the day between 7:00 am and 7:00 pm when the applicant expects the loudest construction activities to occur.

29. a. Please discuss any landscaping or other features at these receptors that would help to attenuate construction noise.

    b. If yes, estimate the degree of attenuation in decibels.

30. Please identify whether Carrizo Plains School is an elementary school or other level.

31. a. If the school is equipped with a heating, ventilation, and air conditioning (HVAC) system, please explain the working condition of this system.

    b. If the school is not equipped with a good working HVAC system, please explain if the school's doors and windows are normally open during class time.

32. Please identify what type of outdoor facilities (i.e., playground, sports facilities), if any, does the school have, and in what direction(s) they are located relative to the school building(s) and the CESF site.

Technical Area: Soils and Water Resources
Authors: Mark Lindley and Scott Stoller

BACKGROUND

WATER SUPPLY

The CESF is an innovative energy production facility that uses comparatively little water relative to other power generation activities such as natural gas-fired plants. It is estimated that the facility will use an average of 18,700 gallons per day (gpd) or 22 acre feet per year (afy). Total peak daily usage is estimated to be 700,000 gpd or approximately 784 afy.

The CESF is located in an area that is dominated by dry-farming and rangeland activities as well as a number of rural residences. Section 5.5.1 describes the groundwater basin as follows (referenced from the DWR Bulletin 118, 2004 update): the Carrizo Plain Groundwater Basin encompasses approximately 270 square miles. The total groundwater storage capacity of the basin is estimated to be 400,000 acre feet. The basin's safe yield is estimated to be 600 afy, which is equal to the natural recharge of the basin. Existing (2001) water demand in Water Planning Area 8 is 930 afy and is projected to rise in the future. Staff is concerned that Carrizo Plains may currently be in an overdraft situation.

DATA REQUEST

33. Please provide:
    a. a comparison of typical water use per acre of the neighboring land uses with the proposed CESF.
    b. a comparison of water use per MW produced relative to other power generating options such as gas-fired combined cycle, gas-fired combustion turbines, and existing solar thermal facilities in California.

34. Please discuss:
    a. how often the total peak daily water usage of 700,000 gpd will occur.
    b. how often the average annual water use will surpass the estimated 22 afy.

35. Please discuss whether alternative water sources have been fully evaluated. Agricultural waste water, recycled water or surface water runoff could offer alternative potential water sources.

36. Please discuss whether surface water runoff has been considered for water supply. The AFC indicates that average annual rainfall in the area is seven to nine inches. Over 640 acres, that equates to 375 to 480 afy falling onsite.

BACKGROUND

STORMWATER MANAGEMENT

Review of Figure 1.1-3 shows considerable run-on from hills to the north and east of the CESF. The entire contributing watershed is not shown on Figure 1.1-3. Review of Figures 3.3-1 to 3.3-3 shows perimeter swales that are assumed to convey any potential run-off from upgradient of the property around the project site.

Onsite, each terrace has a central low point that is one foot below its edge. Section 3.4.7 provides a sample calculation for a 50-year, 24-hr storm generated onsite. It is not clear from the information provided in the AFC how runoff will be routed from the terraces to the perimeter swales, it appears that the terraces will be used to store and infiltrate rainfall-runoff.

Section 3.3 Site Description states, "The portion of stormwater runoff that is not absorbed into the ground will run offsite as sheet flow and will follow the terrain to the south and west." Further, Section 3.4.10.7.6 states, "Rainfall from the one square mile solar field will continue to be drained by sheet flow. A series of interrupter swales will be used to both reduce the velocity of the runoff as well as allow the rainfall to be absorbed into the ground replenishing local ground water levels." The sloping perimeter swale terminates at a low point at the southwestern corner of the site (Figures 3.3-1 to 3.3-4), and no improved discharge outlet is shown. There exists a potential for significant erosion impact due to concentrated flow exiting the perimeter swale.

DATA REQUEST

37. Please confirm the design intent of the perimeter swale: discuss whether its intended use is to convey run-off from upgradient of the site around the site in addition to terrace overflow.

38. Please quantify (flowrate and volume) of onsite and upgradient runoff and demonstrate that the perimeter swale can convey the anticipated flows.

39. Please quantify the onsite stormwater flows and how runoff will be managed.

40. Please describe the local design standards for runoff management. (San Luis Obispo County Department of Public Works, Regional Water Quality Control Board (RWQCB), or other local entity).

41. Please confirm whether terraces will be used to store and percolate rainfall runoff or whether drop inlets and stormdrains will be used to convey water off of the terrace and to the perimeter swale.

    a. Please describe how much runoff will be infiltrated into the terraces.

    b. Please describe how terrace overflows will be managed.

42. Please describe the detailed stormwater plans to discharge from the perimeter swale at the southwest corner of the site.

43. Please discuss whether you have considered deepening the perimeter swale along the south edge to allow for additional storage and percolation. If not, explain why.

44. Please provide calculations demonstrating the amount of water infiltrating and running offsite for existing (no project) conditions and compare the calculations with with the amount of water that will infiltrate and runoff the site post-project. Calculations should be on an average annual basis.

BACKGROUND

An unnamed drainage channel passes through the western portion of the laydown area. Figure 1.1-4 shows fuel storage adjacent to the drainage channel. Leaks from a proposed CESF fueling station near this drainage channel could pose a threat to water quality, and the proximity to a water course could hasten the dispersion of a spill. The response to this data request will help staff understand and assess the risk of the proposed fuel station location.

DATA REQUEST

45. Please describe the distance of the fueling station from the top of the drainage channel's bank.

46. Please confirm that the fuel storage area is above the 100-year flood level.

47. Please discuss whether you have considered moving the fueling station to another portion of the laydown area that is further away from the drainage channel. If not, discuss why.

BACKGROUND

Section 3.4.13.1.7 states that approved Best Management Practices (BMPs) will be selected from the State of California Department of Transportation Construction Site Best Management Practices Manual. A short discussion followed with a long list of potential BMPs to be used. Section 3.4.13.1.3 states that site clearing and grading will occur during the first six months of construction, which includes moving 1,200,000 cubic yards of soil. Elsewhere in the AFC it is mentioned that construction is due to begin in January or February of 2009.

To mitigate potential impacts to water and soil resources from the construction of the CESF project, the Energy Commission requires preparation and implementation of a Drainage Erosion and Sediment Control Plan (DESCP). The DESCP will be updated and revised as the project moves through the design process. This document is a complement to the Construction Storm Water Pollution Prevention Plan (SWPPP)

required by the RWQCB. The DESCP submitted prior to site mobilization must be designed and sealed by a professional engineer/erosion control specialist.

DATA REQUEST

48. Please provide a draft DESCP containing elements A through I below outlining site management activities and erosion/sediment control BMPs to be implemented during site mobilization, excavation/demolition, construction, and post-construction activities. The level of detail in the draft DESCP should be commensurate with the current level of planning for site grading and drainage.

49. Please provide all conceptual erosion control information for those phases of construction and post-construction that have been developed, or provide a statement when such information will be available.

    A. **Vicinity Map** – A map(s) at a minimum scale 1"=100' indicating the location of all project elements (construction site, laydown area, pipelines, etc.) with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

    B. **Site Delineation** – All areas subject to soil disturbance for the CGS (project site, laydown area, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction/demolition areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

    C. **Watercourses and Critical Areas** – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. Indicate the proximity of those features to the CGS construction, laydown, and landscape areas and all transmission and pipeline construction corridors.

    D. **Drainage Map** – The DESCP shall provide a topographic site map(s) at a minimum scale 1"=100' showing all existing, interim and proposed drainage systems and drainage area boundaries. On the map, spot elevations are 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. **Drainage of Project Site Narrative** – The DESCP shall include a narrative of the drainage measures to be taken to protect the site and downstream facilities. The narrative should include the summary pages from the hydraulic analysis prepared by a professional engineer/erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage measures. The hydraulic analysis should be used to support the selection of BMPs and structural controls to divert off-site and on-site drainage around or through the CGS construction and laydown areas.

F. **Clearing and Grading Plans** – The DESCP 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 will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography.

G. **Clearing and Grading Narrative** – The DESCP shall include a table with the quantities of material excavated or filled for the site and all project elements of the CGS project (project site, lay down area, 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.

H. **Best Management Practices Plan** – The DESCP shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading/demolition, project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to prevent wind and water erosion.

I. **Best management practices narrative** – the DESCP shall show the location (as identified in H above), timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading, for all project elements (site, pipelines, etc.) related to excavations and construction, final grading/stabilization, and post-construction. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule should include post-construction maintenance of structural control BMPs, or a statement provided when such information will be available. Be sure to include provisions for wet-season work.

BACKGROUND

WASTEWATER

Section 3.4.5 states that the process wastewater from the solar thermal washdown and the air cooled condenser washdown will be sent to evaporation ponds. Small concentrations of toxic substances in the raw water supply may be concentrated through the water treatment and water use systems. Discharge can cause threats to the health of soils and wildlife. Due to the concentration of constituents within the evaporation pond it is important to determine what elements will be present.

The Porter-Cologne Water Quality Control Act controls discharge of wastewater to surface or groundwater in California, which is administered by the nine Regional Water Quality Control Boards. California Water Code Section 13260 requires a Report of

Waste Discharge (RWD) for any discharge that could affect waters of the State to file a report with and receive requirements from the Regional Water Quality Control Board.

DATA REQUEST

50. Please furnish a raw water quality report that includes the primary drinking water maximum contaminant levels including inorganics, radionuclides, Volitile Organic Compounds, and Semi-volitile Organic Compounds.

51. Please provide the design for the evaporation ponds and their maintenance requirements.

52. Please provide a description of the quality (constituent concentrations) of waste water discharged to the evaporation ponds.

53. Please discuss whether a zero liquid discharge system has been considered to deal with the process wastewater.

54. Please discuss whether the CESF has contacted the Regional Water Quality Control Board regarding discharge of wastewater to evaporation ponds.
    a. Please provide copies of all correspondence to or from the RWQCB regarding waste water discharge to evaporation ponds.
    b. Please provide a copy of the Draft Report of Waste Discharge.

BACKGROUND

The sanitary wastewater system will collect wastewater from sinks, toilets, and other sanitary facilities for discharge into an on-site septic system. The San Luis Obispo County Department of Environmental Health (SLO-DEH) governs discharge to septic leach fields.

DATA REQUEST

55. Please discuss whether the CESF has contacted the SLO-DEH regarding review and approval of septic leach fields.
    a. Please provide copies of all correspondence with SLO-DEH regarding design and approval of the septic leach field.

BACKGROUND

Section 4, Alternatives, provides a short discussion on the topic of a Reverse Osmosis (RO) system. That section states, "The project will utilize a 1,000 gallon septic tank and leach field as the Reverse Osmosis wastewater discharge preferred option." This section provides the only mention of a RO system in the whole AFC. RO reject water could cause significant groundwater and soil quality impacts.

DATA REQUEST

56. a. Please discuss whether the CESF will utilize a RO system.

    b. If so, address the fate of the reject water.

BACKGROUND

Section 3.4.7 describes the function of the oil /water separator (OWS) and that the discharge water will be sent to the water treatment system and reused. This data request will help determine the impact of OWS wastewater disposal.

DATA REQUEST

57. Please confirm that all water from "contact areas" will be directed to the OWS.

58. Please describe the raw water requirements of the water treatment system.

59. Please describe the system for monitoring OWS discharge water.

60. Please describe the OWS discharge water if it doesn't meet the water treatment system requirements.

BACKGROUND

WATER QUALITY

Section 3.4.7 states that softened water will be used along with cleaning solutions to clean the solar collectors. Softened water contains relatively high concentrations of sodium (a plant toxin). This data request will help determine the impact to groundwater and soil and plant health.

DATA REQUEST

61. Please provide information related to the frequency of solar collector cleaning, likely concentrations of sodium in the water runoff and plant toxicity levels.

62. Please describe the types of solvents or cleaning solutions that may be added to the solar collector (reflector) cleaning solutions, and discuss the potential impacts to groundwater quality.

63. Please describe what impacts washdown with softened water / cleaning solutions over the life of the CESF would have on the health of the soil and groundwater for future agricultural or residential use of the property.

BACKGROUND

SOIL RESOURCES

The Phase 1 Site Assessment found above ground storage containers on the site. A liquid storage container from a previous era may have locally contaminated soils on the site. Grading activities include movement of 1.2 million yards of material.

DATA REQUEST

64. Please describe the system proposed to discover contaminated soils during grading activities onsite, and how the applicant would deal with any contaminated soils.

BACKGROUND

It is assumed that the laydown area will be used for a limited period of time. After construction, if the CESF site and laydown area are not properly stabilized, then significant wind and soil erosion could occur.

DATA REQUEST

65. Please discuss in what capacities and for how long will the laydown area be used.

66. Please discuss how the sites will be stabilized after construction.

67. Please discuss what ground cover is planned.

BACKGROUND

Section 5.4 discusses soil erosion stating that short term increases in soil erosion are expected during construction. This data request is to further understand and evaluate the potential for soil erosion at the site.

DATA REQUEST

68. Please discuss how much soil will be lost from wind and water erosion. Please quantify the values with and without the proposed BMPs, both during construction and operations.

Technical Area: Transmission System Engineering
Authors: Sudath Arachchige

INTRODUCTION

Staff needs to determine the system reliability impacts of the project interconnection and to identify the interconnection facilities including downstream facilities needed to support the reliable interconnection of the proposed Carrizo Energy Solar Farm Project (CESFP). The interconnection must comply with the Utility Reliability and Planning Criteria, North American Electric Reliability Council (NERC) Planning Standards, NERC/Western Electricity Coordinating Council (WECC) Planning Standards, and California Independent System Operator (CA ISO) Planning Standards.

In addition the California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment." For determining compliance with planning and reliability standards and the identification of indirect or downstream transmission impacts, staff relies on the System Impact Study (SIS) and Facilities Study (FS) as well as review of these studies by the agencies responsible for insuring the interconnecting grid meets reliability standards, in this case, Pacific Gas & Electric (PG&E) and the CA ISO. The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine the project would cause the transmission system to violate reliability requirements the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include modification and construction of downstream transmission facilities. CEQA requires environmental analysis of any downstream facilities for potential indirect impacts of the proposed project.

BACKGROUND

Staff needs a complete interconnection study to identify interconnection facilities, analyze reliability impacts and for identification of potential downstream facilities necessary to support the net output of 177MW of the CESF to the PG&E 230kV existing system. The study should include a power flow, short circuit and transient stability analyses with a mitigation plan for any identified reliability criteria violations. In the report list all major assumptions in the base cases including major path flows, major generations including queue generation and loads in the area systems. Also identify the reliability and planning criteria utilized to determine the reliability criteria violations.

DATA REQUESTS

69. After consulting with the California ISO and PG&E, please provide a Power Flow analysis and a Short Circuit Study for the CESF with and without proposed net output of 177 MW for 2010 Summer Peak /Summer Off peak conditions.

    a. Please provide Power Flow analysis for N-0 (normal condition), N-1 (single contingencies) and critical N-2 (double contingencies) system conditions.

    b. Please provide a list of overload criteria violations in one table showing the loadings before and after the new generation and their differences side by side.

    c. Please provide power flow diagrams (MVA, percent loading & P. U. voltage) for base cases with and without the project. Power flow diagrams must also be provided for all N-0, N-1 and N-2 studies where overload or voltage criteria violations appear.

    d. Please provide a Short Circuit Study report in one table showing fault currents at important buses with and without the new generation, and respective breaker interrupting ratings side by side.

    e. Please provide a list mitigation measures considered and those selected for all criteria violations.

    f. For any mitigation selected in "d" above please provide an analysis that meets CEQA requirements for indirect project impacts.

Technical Area: Visual Resources
Author: Mark R. Hamblin

BACKGROUND

San Luis Obispo County Title 22 Land Use, Chapter 22.32 Electric Generating Plants, section 22.32.060 Photovoltaic Generating Facilities, among other items, requires an applicant for a photovoltaic generating facility to describe the tracking system design, including showing that no concentrated reflections will be directed at occupied structures, recreation areas or roads.

Although the Carrizo Energy Solar Farm project is considered a solar thermal facility and not a photovoltaic facility, the San Luis Obispo County Planning and Building Department has indicated that the intention of county code section 22.32.060 was to govern solar energy conversion facilities. If so, then Section 22.32.060 applies to the proposed Carrizo project.

The AFC indicates that residents, particularly those to the north of the project site, could experience brief glare impacts each day as the project's mirrors rotate out of the stow position. A glint/glare study for the project was not provided in the AFC.

The applicant's Supplemental Information In Response To CEC Data Adequacy Request (received on December 17, 2007) states that the applicant would prepare a formal "Glint/Glare Study," and include an analysis of the project's tracking system to determine if concentrated reflections are directed at occupied structures, recreation areas, or roads, and adequately assess potential glint/glare from project construction and operation.

DATA REQUEST

70. Please provide a "Glint/Glare Study" for the proposed CESF project. The Glint/Glare Study should include an analysis of the project's tracking system to determine if concentrated reflections are directed at occupied structures, recreation areas, or roads (public rights of way), and adequately assess potential glint/glare from project construction and operation.

71. Please discuss the estimated intensity of illumination of the reflected sunlight, and the duration of reflected sunlight on structures and vehicles on public roads.

72. Please discuss if sunlight on airborne dust particles would result in visible light rays, and provide an estimate of the frequency of this event.

BACKGROUND

The Carrizo Energy Solar Farm project's tallest and most publicly visible structures range in height from 40 to150 feet. The AFC indicates that landscaping proposed as part of the project is to be planted offsite on adjacent properties that have a residence for the purpose of screening the project's publicly visible structures from the residential viewer.

DATA REQUEST

73. Please provide a line-of-sight diagram(s) or photo simulation(s) that accurately show the conceptual landscape screening's effectiveness from adjacent properties with residential views of the proposed CESF project.

74. Please provide the data used to prepare the line-of-sight diagram(s) or photo simulations(s) to allow independent verification of their accuracy.

Technical Area: Waste Management
Author: Suzanne Phinney

BACKGROUND

AFC Section 5.14.2.2 discusses waste streams, including non-hazardous solid waste, expected to be generated during operation of the CESF facility. However non-hazardous solid waste is not listed as a waste stream in Table 5.14-3, and an estimated quantity is not provided.

DATA REQUEST

75. Please quantify the non-hazardous solid waste expected to be generated during operations.

BACKGROUND

AFC Section 3.3.1 states, "Abandoned farm structures currently on Section 28 will be demolished prior to change of ownership." There are also structures on Sections 27 and 33, primarily an abandoned 7,000 square foot metal building and above ground storage tanks (Appendix Q, page ES-2). The AFC does not give the fate of these structures. Since the demolition will take place prior to the change in ownership, it is unclear which entity is responsible and whether demolition is considered part of the CESF project.

DATA REQUEST

76. Please clarify whether structures on Sections 27 and 33 will be demolished.

77. Please clarify the entity responsible for the demolition of existing structures, and whether demolition is considered part of the CESF project.

BACKGROUND

If demolition is considered part of the CESF project, the resulting waste stream has not been accounted for in the table and discussion of construction waste streams in AFC Section 5.14.2.1.

DATA REQUEST

78. Please describe and quantify (in tons and cubic yards) the waste stream generated from the demolition of existing structures.

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

APPLICATION FOR CERTIFICATION ***For the CARRIZO ENERGY SOLAR FARM* PROJECT**	**Docket No. 07-AFC-8** **PROOF OF SERVICE** **(Established: 1/10/2008)**

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

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-8
1516 Ninth Street, MS-14
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Perry H. Fontana, QEP
Vice President-Projects
Ausra, Inc.
2585 East Bayshore Road
Palo Alto, California 94303
Perry@Ausra.com

APPLICANT CONSULTANT

Angela Leiba, GISP
Senior Project Manager
GIS Manager/Visual Resource Specialist
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, CA 92108
angela_leiba@urscorp.com

Kristen E. Walker, J.D.
URS Corporation
1615 Murray Canyon Road, Suite 1000
San Diego, California 92108
kristen_e_walker@urscorp.com

COUNSEL FOR APPLICANT

Jane Luckhardt, Esq.
Downey Brand Law Firm
555 Capitol Mall, 10th Floor
Sacramento, CA 95814
jluckhardt@downeybrand.com

INTERESTED AGENCIES

Larry Tobias
CA Independent System Operator
151 Blue Ravine Road
Folsom, CA 95630
ltobias@caiso.com

Electricity Oversight Board
770 L Street, Suite 1250
Sacramento, CA 95814
esaltmarsh@eob.ca.gov

INTERVENORS

ENERGY COMMISSION

Jackalyne Pfannenstiel
Chairman and Presiding Member
jpfannen@energy.state.ca.us

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

Gary Fay
Hearing Officer
gfay@energy.state.ca.us

Mary Dyas
Project Manager
mdyas@energy.state.ca.us

Caryn Holmes
Staff Counsel
cholmes@energy.state.ca.us
Michael Doughton
Staff Counsel
mdoughto@energy.state.ca.us

Public Adviser's Office
pao@energy.state.ca.us

DECLARATION OF SERVICE

I, Christina Flores, declare that on January 28, 2008, I deposited copies of the attached Data Requests 1 through 78 for the Carrizo Energy Solar Farm, in the United States mail at Sacramento, California 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.

Christina Flores

Christina Flores