CALIFORNIA ENERGY COMMISSION
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February 7, 2012

Todd Stewart, Senior Director of Project Development
BrightSource Energy, Inc.
1999 Harrison Street, Ste. 2150
Oakland, CA 94612

RE: RIO MESA SOLAR ELECTRIC GENERATING FACILITY (11-AFC-4)
DATA REQUESTS, SET 1A (Nos. 1-84)

Mr. Stewart:

Pursuant to Title 20, California Code of Regulations, Section 1716, the California Energy Commission staff seeks 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 (Nos. 1 - 84) is being made in the areas of Air Quality (Nos. 1-24), Alternatives (Nos. 25 - 27), Land Use (Nos. 28- 31), Socioeconomics (Nos. 32 - 33), Traffic and Transportation (Nos. 34 - 36), Transmission System Engineering (Nos. 37 - 40), Waste Management (Nos. 41 - 42), Worker Safety and Fire Protection (No. 43) and Biological Resources (Nos. 44 - 84). Written responses to the enclosed data requests are due to the Energy Commission staff on or before March 8, 2012. Subsequent sets of Data Requests are anticipated for other technical disciplines, including, but not limited to Cultural Resources, Paleontological Resources, Soil and Water Resources, and Visual Resources. It is also possible that additional Data Requests may be made for other technical areas or for technical areas where a first set of Data Requests have already been made.

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, or the grounds for any objections (see Title 20, California Code of Regulations, Sec.1716 (f)). If you have any questions, please call me at (916) 651-3765 or email me at pmartine@energy.state.ca.us .

Sincerely,

Pierre Martinez, AICP
Project Manager

cc: Docket (11-AFC-4)
Proof of Service List

Technical Area: Air Quality
Author: Wenjun Qian

BACKGROUND: AIR QUALITY PERMIT APPLICATION

The proposed project will require review and approvals (the Preliminary Determination of Compliance and Final Determination of Compliance) from the Mojave Desert Air Quality Management District (MDAQMD or "District"). These documents are integrated into the staff analysis. Therefore, staff will need copies of all correspondence between the applicant and the District in a timely manner in order to stay up to date on any air quality issues that arise prior to completion of the Preliminary or Final Staff Analysis.

DATA REQUEST

1. Please provide copies of all substantive District correspondence regarding the Preliminary or Final Determination of Compliance, including e-mails, within one week of submittal or receipt. This request is in effect until the final Commission Decision has been recorded.

BACKGROUND: BASELINE SITE CONDITIONS

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

DATA REQUESTS

2. Please describe the types of activities that emit combustion and fugitive dust emissions on the site currently and the estimated quantities of those emissions that occur from those activities.

3. Please describe whether those activities will be permanently discontinued when the project is completed and estimate the reductions from the current onsite baseline emissions.

BACKGROUND: CONSTRUCTION EMISSIONS CALCULATIONS

The construction emissions calculations use assumptions that require additional information to be confirmed by staff. The emission calculations were only provided as a Portable Document Format (pdf) file. Staff needs the original spreadsheet file, with embedded calculations, to complete its review.

DATA REQUESTS

4. Please provide the spreadsheet version, in electronic format, of the Appendix 5.1F Construction Emission Worksheets with the embedded calculations.

5. The construction emissions and impacts should be evaluated for the actual Tiered engines to be used during construction. Please identify the Tier levels of all of the off-road equipment and associated emission factors. Please revise the emission calculations and corresponding impact analysis based on reasonable construction vehicle fleet composition to account for the possibility that some of the vehicles may not be available with Tier 3 or 4 engines.

6. Please provide the input assumptions to obtain the OFFROAD and EMFAC2007 Model raw engine emission factors, the assumptions used to derive the equipment specific emission factors, and please provide the spreadsheets used to create the emission factors shown in Appendix 5.1F, with underlying equations intact.

BACKGROUND: CONSTRUCTION EMISSIONS MITIGATION

During construction of the project, the applicant states in the Application for Certification (AFC), Table 5.1-30, that the construction equipment and activities may cause up to a maximum of 974.7 lb/day of NOx and 140.5 lb/day of VOC, which are ozone precursors, 188.7 lb/day of PM10 and 60.0 lb/day of PM2.5. The construction period is expected to be 36 months. During this time, the construction emissions can contribute to existing violations of the state ozone and PM10 air quality standards.

DATA REQUEST

7. Please identify all feasible and cost-effective measures to mitigate the impacts of construction related NOx, VOC, PM10/2.5 and PM10/2.5 precursor emissions. These may include a dust mitigation plan, Diesel-Fueled Engine Control, Dust Plume Response Requirement, Fugitive Dust Control, etc.

BACKGROUND: OPERATIONS EMISSIONS CALCULATIONS

Applicant does not include the emissions from mirror washing activities in the total project emissions in Table 5.1-26. Applicant does not include the mirror washing emissions in the operations impact analysis either. Applicant does quantify the emissions from mirror washing activities in Table 5.1-25 and these emissions are not negligible. For example, the annual NOx emission from mirror washing activities is expected to be 20.5 tons/yr, while it is 13.8 tons/yr from all stationary sources.

DATA REQUEST

8. Please include the emissions from mirror washing activities in the total facility emissions and corresponding impact analysis.

BACKGROUND: OPERATIONS - VEHICLE MITIGATION MEASURES

Staff is concerned that the overall criteria pollutant air quality benefit of the proposed project's solar energy production is being at least partially cancelled by the project's fuel use emissions. Applicant has assumed the mirror washing vehicles are equipped with Tier 4 engines, which is consistent with a staff position that all site dedicated vehicles be new model year vehicles which meet model year California emission standards at their time of purchase/lease/etc. Staff needs to understand what additional dedicated onsite vehicle mitigation measures are available and cost effective.

DATA REQUEST

9. Please provide a review of available alternative low emission vehicle technologies, including compressed natural gas, electric, and hydrogen fueled vehicles, and other technologies that could be used to replace the proposed

diesel and gasoline fueled vehicles used for operations maintenance if lower emission alternative technology vehicles are both available and cost effective.

BACKGROUND: OPERATIONS – EQUIPMENT REFUELING EMISSIONS

The AFC states there will be diesel onsite storage, but does not show any gasoline storage for vehicle refueling, and it is unclear if any gasoline vehicles will be used and refueled onsite. Staff would like to confirm that the applicant does not plan to store gasoline for vehicle refueling at this site.

DATA REQUESTS

10. Please confirm that there will be no dedicated gasoline fueled onsite vehicles.

11. Please confirm that there will be no vehicle refueling gasoline storage tank at the site.

12. Please identify the locations and distances to available gasoline refueling facilities expected to be used (if any) and provide estimates of emissions due to the transportation of vehicles between the project site and the refueling facilities and include these emissions in an updated operating emissions table 5.1-26.

BACKGROUND: OPERATIONS – SOLAR RECEIVER STEAM GENERATOR (SRSG)

There is a potential for additional NOx emissions from the surface of the solar receiver as the surface temperature heats to create high temperature water for the steam generator process. Staff did not find this issue addressed in the AFC. Oxides of nitrogen can be formed by oxidation of nitrogen in the air and the rate of formation increases significantly at temperatures above 2900 degrees Fahrenheit (1593 degrees Celsius). In the supplemental data response set 1A of Hidden Hills SEGS (TN-63259, CH2MHILL, December 30, 2011), the Hidden Hills SEGS applicant states that the surface temperatures of SRSG panels will reach approximately 700 degrees Celsius (about 1300 degrees Fahrenheit), well below the range where the thermal NOx will form. Staff needs additional information regarding the potential temperatures and NOx formation temperature at the surface of the Rio Mesa SEGF solar receiver.

DATA REQUESTS

13. Please confirm that the information provided in the data response for Hidden Hills SEGS also applies to the Rio Mesa SEGF project.

14. If there is any potential for NOx emissions at the surface of the solar receiver, please estimate the emission rate expected at the surface of the solar receiver (lbs/day and tons/year) and describe what can be done to offset any such emissions or provide evidence that shows there will not be significant emissions of nitrogen oxides.

BACKGROUND: AUXILIARY BOILERS OPERATION IN GHG ANALYSIS

In the AFC, the applicant states that maximum annual auxiliary boiler use will be the equivalent of approximately 200 full-load hours per year per boiler (4 hours/day for 50

weekdays during June and September as in Table 5.1B-8), which is half of the usage of the same auxiliary boilers in the Hidden Hills SEGS project (11-AFC-2). Staff noticed that without this significant reduction in use, the greenhouse gas (GHG) emissions for these boilers would exceed the 100,000 metric tonnes/year threshold to trigger Prevention of Significant Deterioration (PSD).

DATA REQUESTS

15. Please explain why and how the same auxiliary boilers are used differently in these two projects.

16. Please provide the spreadsheet version, in electronic format, of the GHG emission calculations for the auxiliary boilers.

BACKGROUND: SF6 IN GHG ANALYSIS

Sulfur hexafluoride (SF_6) is one of the most potent greenhouse gases (GHGs). SF_6 is often used for insulating and cooling of electrical equipment such as transformers, circuit breakers and switchgear. The project is identified to have a significant amount of electrical equipment that could use SF_6. While some of the electrical equipment is noted to be air cooled, the AFC GHG analysis does not include comprehensive information for all electrical equipment regarding if or how much SF_6 would be used. Staff needs to understand if SF_6 is a potential GHG emission from this project and the emission inventory of SF_6.

DATA REQUEST

17. Please provide details of the SF_6 onsite inventory and leakage emissions both in operation and construction phases to complete the GHG emission estimates.

BACKGROUND: COMMISSIONING IMPACTS ANALYSIS

Applicant expects the maximum emissions from each auxiliary boiler to occur during the cold start/tuning phase of commissioning, which are expected to be similar to those that occur during cold startups. Thus, applicant did not model the impact due to commissioning. However, by comparing the emissions during commissioning (Table 5.1B-17) and those during cold startups (Table 5.1-23 and Table 5.1-24), staff found maximum emissions during different commissioning phases can be higher than those during cold startups. For example, emissions from auxiliary boilers during the full load operation of commissioning are higher than those during cold startups except for NOx.

DATA REQUESTS

18. Please explain in detail why modeling was not considered necessary for commissioning in light of the fact that some cold startups do not reflect the highest emissions scenarios.

19. Please provide additional results for commissioning impact analysis if impact during commissioning is higher than that during cold startups.

BACKGROUND: CUMULATIVE IMPACTS ANALYSIS

Applicant included Blythe Energy Project and Blythe Energy Project Phase II in the cumulative impacts analysis. But applicant did not include Blythe Solar Power Project (approved by the Energy Commission on September 15, 2010), which is also located in this region.

DATA REQUESTS

20. Please explain why the Blythe Solar Power Project is not included in the cumulative impacts analysis.

21. Please update the cumulative analysis by including the Blythe Solar Power Project if the exclusion of it cannot be justified.

BACKGROUND: MODELING FILES AND AFC INCONSISTENCY

Staff checked the modeling files and found some inconsistencies between the modeling files and the AFC. These include:

a. Some construction emission rates (such as windblown dust emissions and annual construction dust emissions) in the modeling file do not match those in Attachment 5.1F-1

		Attachment 5.1F-1	Modeling file
Short term emissions for windblown dust (g/sm^2)	PM2.5	7.426E-11	6.302E-10
	PM10	4.951E-10	1.576E-9
Long term emissions for windblown dust (g/sm^2)	PM2.5	4.973E-10	6.302E-10
	PM10	1.243E-9	1.576E-9
Long term emissions for construction dust (g/s)	PM2.5	1.435E-3	1.34E-3
	PM10	1.197E-2	1.173E-2

b. The emission rates of 1-hour NOx for startup boilers in startup mode with nighttime preservation boilers in operation in the modeling files do not match those in Table 5.1D-3 (or Table 5.1-23). Staff noticed that the emission rates for SO2 (9.281E-3 g/s for startup boiler and 3.971E-3g/s for nighttime preservation boiler) were used for NOx (0.3531 g/s for startup boiler and 0.0208 g/s nighttime preservation boiler).

c. The emission rate of CO, 3.543E-2 g/s, was provided in the Excel spreadsheet in applicant's modeling CD and was actually used to calculate the inversion fumigation impact of nighttime preservation boilers in the lower half of Table 5.1D-5. But the upper part of Table 5.1D-5 shows the CO emission rate to be 6.917E-2 g/s, which was used in refined modeling but not the inversion fumigation impact analysis.

DATA REQUEST

22. Please check and correct the inconsistencies between the modeling files and AFC, including but not limited to the above mentioned ones, to make sure they match with each other.

BACKGROUND: BACKGROUND DATA FOR NO2 MODELING

Applicant modeled the NO2 impact using the Ozone Limiting Method, which limits the NO2 concentration when the background ozone concentration is less than the modeled NOx concentration. Applicant uses paired-sum approach to calculate the total NO2 concentration for the federal 1-hour NO2 analysis. Applicant uses ozone measurements at the Blythe, CA station but NO2 from Palm Springs, CA station. Although the Blythe monitoring station is closer to the project site, the ozone concentration observed at Blythe is lower than that observed at Palm Springs according to the following data table from ARB's website http://www.arb.ca.gov/adam/select8/sc8start.php. Using paired-sum approach under such conditions may reduce the conservatism of the modeling because 1) the two monitoring stations are 110 miles away from each other, and 2) the lower values of ozone observed at Blythe may limit the NO2 project impact.

Monitoring Sites	Ozone							
	Highest 1-Hour Observation				Highest National 8-Hour Average			
	2007	2008	2009	2010	2007	2008	2009	2010
Blythe-445 West Murphy Street	0.092	0.074	0.072	0.072	0.075	0.071	0.066	0.067
Palm Springs-Fire Station	0.126	0.112	0.12	0.114	0.102	0.101	0.098	0.099

DATA REQUEST

23. Please provide a sensitivity study on how the total NO2 impact would change if the NO2 and ozone measurements are from the same monitoring station (i.e. Palm Springs).

BACKGROUND: NATURAL GAS USAGE IN THE BOILERS

The AFC does not provide detailed information on the percentage of the annual heat input from fossil fuel compared to that from the sun. The applicant does not provide consistent statements about the natural gas usage percentage in the boilers. Page 5.1-30 of AFC indicates that the annual heat input to the auxiliary boilers will be limited to be less than 10 % of annual solar energy capture. Page 5.1-35 of the AFC indicates that heat input from natural gas will be limited to below 15 % of the heat input from the sun, on an annual basis. The percentage of fossil fuel usage should account for not only the natural gas used in the boilers, but also fuel used to keep the system operating, such as that for mirror washing.

DATA REQUEST

24. Please provide fuel use documentation in MMBTUs that demonstrates compliance with Public Utilities Code 399.12(h)(3), which defines the maximum allowable quantity of fuel input that enables this project to qualify for renewable energy credits. This documentation should allow for computation of the percentage of annual heat input from fossil fuel use relative to total heat input.

Technical Area: Alternatives
Author: Christina Snow

BACKGROUND

Although the applicant indicates that one of the project objectives is to conform to the Power Purchase Agreement (PPA), the Energy Commission considers a broader goal (consistent with California Environmental Quality Act requirements) of meeting most of the basic objectives of the project and whether there are potentially feasible alternatives that could avoid or substantially lessen one or more of the significant effects of the project. Staff is in the process of gathering information to determine whether the project as proposed would have significant impacts.

In the Application for Certification (AFC), the applicant indicates that many of the alternatives are not feasible due to conflicts with constraints imposed by the PPA. Although staff understands that the PPA may have specific terms that would render an alternative infeasible, there are instances where the PPA can be revised, both before and after the PPA has been approved by the California Public Utilities Commission (CPUC).

Staff has reviewed the Southern California Edison's (SCEs) Advice Letter for a Power Purchase and Supply Agreement (Advice Letter) identified as revised AL 2339-E-C, which was filed with the CPUC on November 28, 2011. It appears that the PPA was revised several times and that the latest information contained in the Advice Letter indicates that Rio Mesa SEGF consists of projects identified as Solar Partners XVI and XVII (both 200 MW with a delivery date of September 30, 2015).

In order for staff to adequately analyze what alternatives could be feasible, staff needs additional information as to the specific reasons why the PPA could not be revised for the alternatives that were presented in the AFC, given that the PPA has been revised in the past. In addition, Off-site Alternative A was carried forward for detailed analysis despite being identified as an alternative that conflicts with the PPA.

The Alternatives that were eliminated in part by conflicts with the PPA include: On-site Alternatives 2 and 3, and Off-Site Alternatives B, C, D, E, and F.

DATA REQUEST

25. Please provide either a copy of the PPA or relevant sections of the PPA that are referenced in the AFC with regard to determining the feasibility of the alternatives presented (with confidential information redacted, if necessary). If any of the requested information is sensitive material, staff would support a request that the filing be treated as confidential.

BACKGROUND

The AFC lists three components (Rio Mesa I, II and III) at 250 MW each, but staff's review of the Advice Letter found that it identifies only two Solar Partners projects as "Rio Mesa Solar Projects" (Solar Partners XVI and XVII) providing 200 MW each. As part of the alternatives analysis, a decreased project footprint (On-Site Alternative 3) alternative was provided in the AFC and subsequently eliminated due in part to the fact that it conflicted with the PPA because of the decreased MWs.

DATA REQUESTS

26. Please provide information as to why there is a difference in what is presented in the SCE Advice Letter as "Rio Mesa Solar Projects" consisting of two 200 MW components and what is presented in the AFC as Rio Mesa I, II, and III consisting of three 250 MW components.

27. If the PPA contains the projects identified as Solar Partners XVI and XVII for two 200 MW projects, please explain how this precludes a decreased footprint alternative for the proposed project.

Technical Area: Land Use
Author: Mark R. Hamblin

BACKGROUND

The proposed project as described in the Application for Certification (AFC) filed on October 14, 2011 required the County of Riverside's approvals on a General Plan Amendment and a change of zone on the project site. The applicant filed the required land use development applications with the County in July 2011, prior to the October filing of the AFC with the California Energy Commission.

On November 8, 2011 the Riverside County Board of Supervisors adopted several policies and ordinances allowing the permitting of solar energy systems and solar power plants within the unincorporated area of Riverside County. The County actions directly applicable to the Rio Mesa project are briefly described below.

Board of Supervisors Policy No. B-29 states that the county will not issue certain permits or approvals unless the Board of Supervisors first approves a franchise, real property interest or development agreement with the owner of a solar power plant. The permits or approvals involve (1) use of county-rights-of way, (2) use of other County property, or (3) land development under the county's zoning and subdivision ordinances.

The purposes of the Board of Supervisors policy are to implement the General Plan, to ensure that the county does not disproportionately bear the burden of solar energy production, to ensure the county is compensated in an amount it deems appropriate for the use of its real property, and to give solar power plant owners certainty as to the County's requirements.

General Plan Amendment No. 1080 and Board of Resolution No. 2011-273; a county–initiated general plan amendment added county policies to the Land Use Element of the County General Plan including the following:

Land Use Policy LU 15.15 permit and encourage in an environmentally and fiscally responsible manner, the development of renewable energy resources and related infrastructure, including, but not limited to, the development of solar power plants in the County of Riverside.

Ordinance No. 348.4705; a county–initiated zone ordinance amendment authorizing *solar power plants* on lots ten (10) acres or larger, subject to a conditional use permit in the following zone classifications: General Commercial (C-1/C-P), Commercial Tourist (C-T), Scenic Highway Commercial (C-P-S), Rural Commercial (C-R), Industrial Park (I-P), Manufacturing Servicing Commercial (M-SC), Medium Manufacturing (M-M), Heavy Manufacturing (M-H), Mineral Resources (M-R), Mineral Resource and Related Manufacturing (M-R-A), Light Agriculture (A-1), Light Agriculture with Poultry (A-P), Heavy Agriculture (A-2), Agriculture-Dairy (A-D),Controlled Development (W-2),

Regulated Development Areas (R-D), Natural Assets (N-A), Waterways and Watercourses (W-1), and Wind Energy Resource (W-E).

The proposed project site is within the Natural Assets (N-A) and the Controlled Development (W-2) zone classifications.

Staff received a letter from the County of Riverside, Transportation and Land Management Agency dated January 20, 2012 regarding the proposed project. Under the letter's subheading Solar Power Plant Program it states the following pertaining to Board of Supervisors Policy No. B-29:

- No encroachment permit shall be issued for a solar power plant unless the Board of Supervisors first grants a franchise to the solar power plant owner.
- No interest in the county's property, or the real property of any district governed by the county, shall be conveyed for a solar power plant unless the Board of Supervisors first approves a real property interest agreement with a the solar power plant owner.
- No approval required by the county's Zoning or Subdivision Ordinance shall be given for a solar power plant unless the Board of Supervisors first approves a development agreement with the solar power plant owner and the development agreement is effective.

As part of the Energy Commission's project review, staff must analyze whether the proposed project complies with applicable laws, ordinances, regulations, and standards (LORS).

DATA REQUEST

28. Please indicate whether applicant intends to submit to Riverside County a real property interest agreement, and if so, please provide staff with the status and a schedule as to when the will be submitted and the expected date it will be finalized with Riverside County.

BACKGROUND

The AFC Land Use Section 5.6 states that Department of Conservation-designated lands (Prime, Unique, farmland of Local and Statewide Importance), are within and surround the project site. Although Table 5.6-6 provides information on the acreage of farmlands within the study area it does not state the number of acres that will be directly impacted by the proposed project.

DATA REQUESTS

29. Please provide the number of acres for the farmlands listed above that is currently being farmed within the proposed project site; of these acres, please provide the number of acres that will be permanently taken out of production by construction and operation of the proposed project.

30. Of the farmlands listed above that are within the right-of-way for the transmission line, please provide the number of acres that are currently being farmed; of these acres, please provide the number of acres that will be permanently and temporarily taken out of production by the proposed project's transmission lines.

31. Of the farmlands listed above that are within the right-of-way for the project's gas lines, please provide the number of acres that are currently being farmed; of these acres, please provide the number of acres that will be permanently and temporarily taken out of production by the proposed project's gas lines.

Technical Area: Socioeconomics
Author: Lisa Worrall

BACKGROUND: AVAILABLE LABOR

Several tables in the AFC present the availability of skilled workers for the seven critical trades that would be used for the project. Availability of workers from the primary unions (within the jurisdiction of the Building and Trades Council in Riverside) and secondary unions are presented and the source of the information is referenced as Construction Labor Survey, 2011 (e.g. Table 5.10-11a, 5.10-11b, 5.1011c, etc.). The AFC contains no additional information regarding the survey.

DATA REQUESTS

32. Please provide the contact information for those individuals or groups that provided data for the survey.

33. Please provide staff a copy of the survey.

Technical Area: Traffic and Transportation
Author: Andrea Koch

BACKGROUND: FIRE DEPARTMENT REQUEST FOR SECONDARY ACCESS

The Riverside County Fire Department provided a project review letter dated December 18, 2011 to the Energy Commission. In the interest of public safety, the Fire Department has requested that the project include a secondary access acceptable to both the Fire Department and Riverside County Transportation Department. The secondary access must allow emergency responders access to all areas of the power plant complex.

The AFC states that 34th Avenue is the preferred access to the project site, while Mesa Drive is a potential alternate access.

DATA REQUEST

34. Please work with the responsible agencies listed above to determine the most feasible access roads, and then provide a map to Energy Commission staff confirming the locations of the proposed primary and secondary access roads.

BACKGROUND: FAA NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION

Title 14, Subpart B, Section 77.9 of the Code of Federal Regulations requires proponents of any construction exceeding 200 feet above ground level to notify the Federal Aviation Administration (FAA). The project's three solar towers would each be 760 feet in height, requiring the applicant to file Form 7460-1 "Notice of Proposed Construction or Alteration" for each tower.

DATA REQUESTS

35. For each solar tower, please submit Form 7460-1 "Notice of Proposed Construction or Alteration" to the FAA, and provide a copy of the submittal to staff.

36. Once the FAA has completed review of the proposed towers, please provide a copy of the findings to staff.

Technical Area: Transmission System Engineering
Authors: Laiping Ng

BACKGROUND

The California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment." The Application for Certification (AFC) requires discussion of the "energy resource impacts which may result from the construction or operation of the power plant." For the identification of impacts on the transmission system resources and the indirect or downstream transmission impacts, staff relies on the Phase I and Phase II Interconnection Studies for insuring the interconnecting grid meets the California Independent System Operator (California ISO) reliability standards. The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause a violation of reliability standards, the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include the construction of downstream transmission facilities. CEQA requires the analysis of any downstream facilities for potential indirect impacts of the proposed project. Without a complete Phase I or Phase II Interconnection Study, staff is not able to fulfill the CEQA requirement to identify the indirect effects of the proposed project.

DATA REQUESTS

Staff requests a complete Phase II Interconnection Study of the proposed 750 MW Rio Mesa Solar Electric Generating Facility (Rio Mesa SEGF) to proceed with the preliminary staff analysis.

37. Provide the California ISO Phase II Interconnection Study of the proposed 750 MW Rio Mesa SEGF to the California ISO control grid. The Study should analyze the system impacts with and without the project during peak and off-peak system conditions, and demonstrate conformance or non-conformance with the utility reliability and planning criteria with the following provisions:

    a. Identify major assumptions in the base cases including imports to the system, major generation and load changes in the system and queue generation.

    b. Analyze the system for N-0, important N-1 and critical N-2 contingency conditions and provide a list of criteria violations in a table showing the loadings before and after adding the new generation.

    c. Analyze Short circuit duties.

    d. Analyze system for Transient Stability and Post-transient voltage conditions under critical N-1 and N-2 contingencies, and provide related plots, switching data and a list for voltage violations in the studies.

    e. Provide a list of contingencies evaluated for each study.

    f. List mitigation measures considered and those selected for all criteria violations.

    g. Provide electronic copies of *.sav and *.drw PSLF files.

h. Provide power flow diagrams (**MW, % 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 overloads or voltage violations appear. Provide the pre and post project diagrams only for an element's largest overload.

38. Provide a detailed one-line diagram for the Colorado River Substation before the interconnection of the project.

39. Provide a detailed one-line diagram for the Colorado River Substation after addition of the project.

- Show bay arrangement and the necessary protection equipments required to interconnect the project.
- Provide ratings of the breakers, disconnect switches, relays, buses, etc.

40. Provide the pole configuration and the number of poles that would be required for the overhead generator-tie lines.

Technical Area: Waste Management
Author: Ellen Townsend-Hough

BACKGROUND

The purpose of the Phase I Environmental Site Assessments (ESA) was to gather information about the project site and surrounding areas to identify conditions indicative of releases of hazardous substances, pollutants and contaminants, petroleum products, and controlled substances. The format of the Phase I ESA Report for the Rio Mesa SEGF project site was in accordance with the ASTM International Standard Practice for Environmental Site Assessments: Phase I Site Assessment Process E 1527-05 and the United Sates Environmental Protection Agency (EPA) 40 CFR Part 312 Standards and Practices for All Appropriate Inquiries (AAI) – Final Rule effective November 1, 2006. The Phase I Environmental Site Assessment (ESA) did not identify any recognized environmental conditions on the project site or along the transmission line corridor. The term recognized environmental condition is defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a threat of a release of any hazardous substances or petroleum products into structures on the property, into the ground, ground water, or surface water of the property.

Although there are no recognized environmental conditions, pages 5-1 through 5-2 of the Phase 1 ESA, identified several wells, many PVC and steel casings, abandoned campgrounds, and evidence of illegal dumping (automobile bodies, boats, piles of rusty cans, broken glass, tires and metal debris) located on or adjacent to the project site. Staff is concerned the waste present on the site may present a safety risk to workers and the public. Staff is inquiring if the project owner has the legal right and obligation to remove and dispose of the waste on the project site, laydown area and along the transmission line route.

DATA REQUESTS

41. Please explain whose responsibility it will be to dispose of waste from illegal dumping that is located on the project site and laydown areas.

42. Please explain how and when the waste will be disposed of if it is the responsibility of the landowner/lessee.

Technical Area: Worker Safety and Fire Protection
Author: Geoff Lesh

BACKGROUND

Rio Mesa SEGF will bring a large scale industrial facility into the jurisdiction of Riverside County Fire Department (RCFD). First responder and fire protection services will be required for the project and will be provided by RCFD Fire Station 44 in Ripley, California. Construction and operation of the project will increase the assets that the fire department must protect and potentially increase call frequency for emergency first aid and medical services. RCFD has commented that the proposed project would have a cumulative adverse impact on the Fire Department's ability to provide an acceptable level of service. Energy Commission staff requires assurance that after applying any proposed mitigations, the fire department's increased responsibility will not adversely affect to a significant extent its ability to continue providing service to the public.

DATA REQUEST

43. Please provide a letter, email, or record of conversation with RCFD that confirms the absence of any expected impacts on the local fire district resulting from construction and operation of the proposed project.

    Or, in the absence of such letter or communication, please provide a Fire and Emergency Services Risk Assessment and a Fire Protection and Emergency Services Needs Assessment for the construction and operation of the project that provides an objective estimate of both equipment and staffing shortfalls (if any) and the associated recommended mitigations (if any) that would be required by RCFD to maintain its current level of readiness to respond to the public.

    The Fire and Emergency Services Risk Assessment and a Fire Protection and Emergency Services Needs Assessment should be considerate of the guidance provided by NFPA 1710: Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments and by NFPA 551: Guide for the Evaluation of Fire Risk Assessments. The Fire Protection and Emergency Services Needs Assessment should address emergency fire and medical response and equipment, staffing, and location needs while the Risk Assessment should be used to establish the risk (chances) of significant impacts occurring. The Fire Protection and Emergency Services Needs Assessment and Risk Assessment should evaluate the following: (a) the risk of impact on the local population that could result from potential unmitigated impacts on local fire protection and emergency services (i.e. "drawdown" of emergency response resources, extended response times, etc.) and (b) recommend an amount of funding that should be provided and used to mitigate any identified impacts on local fire protection and emergency medical response services.

Technical Area: Biological Resources
Authors: Heather Blair, Scott White

BACKGROUND: MIGRATORY BIRD SURVEYS

The proposed project site is located on open lands in the Lower Colorado River Valley within approximately 5 miles of the Colorado River, on the bluffs overlooking the floodplain, wetland, and agricultural habitats. This area is an important migratory route for numerous species, as well as a breeding and wintering stopover destination. Migratory birds may be injured or killed due to collision with the three 750-foot tall power towers and thousands of associated heliostats proposed for construction or may be burned as a result of flying through the concentrated energy surrounding the receiver towers or via attempted perching on the towers. Therefore, the permitting and wildlife agencies request that the applicant conduct robust and scientifically rigorous surveys beginning as soon as possible and continuing through a complete annual cycle to determine the scope and scale of migratory bird use, and the potential direct, indirect, and cumulative impacts on migratory birds that may result from construction and long-term operation of the proposed project. This request for additional survey data was originally provided by the U.S. Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM) to the applicant in June 2011. That request provided specific recommendations for passerine, waterfowl and upland migratory birds and separate recommendations for raptors, particularly golden eagles. In December 2011, the four Renewable Energy Action Team (REAT) agencies (i.e., Energy Commission, BLM, USFWS, and California Department of Fish and Game [CDFG]) collaboratively revised the June 2011 survey recommendation to include protocols for breeding season surveys for two state-listed endangered birds, and additional field data on bats that may use the site during flights between roosting areas to the west and feeding habitat on-site or in agricultural lands to the east. This three-part request was discussed among the REAT agencies and applicant at a public workshop on January 6, 2012.

The applicant provided a counterproposal in January 2012 that would substantially reduce the scope and duration of the recommended survey effort. Several differences between the REAT agency proposal and the applicant's counterproposal are described below. Biologists representing the REAT agencies have reviewed the counterproposal and will accept some of the modifications to methodology; however, in most cases, the REAT agency biologists believe that the applicant's proposed reduction of survey scope and duration will not provide an adequate description of baseline conditions relative to avian use of the site or season-specific data to analyze the project's potential impacts and risk to migratory birds, including at least two State-listed endangered species.

The counterproposal would combine surveys for passerines with raptors, at seven observation points. The original REAT agency methods requested 5-10 observation points for passerines and three observation points for raptors. The agencies agree that seven points, as proposed by the applicant, would satisfy the intent of the earlier request, if at least three of the observation points are staffed by biologists who are qualified to conduct both raptor and passerine surveys, or if three of the points are

staffed by two biologists, one qualified for each aspect of the survey. Note that qualifications for the raptor versus non-raptor biologists are different.[1,2]

The applicant's counterproposal would include surveys conducted between February and April, two weeks per month, for four consecutive days during each survey week. The REAT agencies' original request specified surveys to be conducted weekly. Since birds do not pass over an area continuously, surveys conducted twice monthly would likely miss "pulses" of migrants passing through the project area. Therefore, the REAT agencies remain firm on our December 2011 recommendations for weekly data collection.

The REAT agencies' request specified surveys at observation points for 8 hours per day, 3 days per week for non-raptors (and 8 hours per day, 4 days per week for raptors) during suitable weather conditions. For non-raptors, a fourth day each week during the appropriate season should be devoted to line transect or point count methodology to identify wintering and migratory species using the site. The applicant's counterproposal would conduct raptor and non-raptor surveys at the seven observation points, four days per week during the survey period. The REAT agencies recognize that the applicant has completed avian point counts pursuant to BLM protocol. Therefore, pending our review of the methods and results of the avian point count data (see data request 50), the agencies agree that these data may suffice for the weekly line transects or point counts, and the fourth day recommended by the REAT agencies is not needed. In the interim, the applicant should implement the recommended protocols under the assumption that a fourth survey day is needed while the REAT agencies are evaluating the degree to which the 2011 BLM point count data may supplement the fourth survey day.

The REAT agencies requested that the applicant conduct the migratory bird surveys throughout the project area and within a 4-mile "buffer area" emphasizing lands, including agricultural lands, between the project site and the Colorado River. The applicant's counter-proposal would locate the seven observation points within one mile of the project area, and would not include agricultural habitats east of the site, because agricultural lands are not present within the project area and due to legal access issues and confrontations from the public road with local property owners described to Energy Commission staff in a January 24, 2012 correspondence (BrightSource Energy, Inc.'s List of Biological Survey Clarifications –TN63447). The agencies believe that the four-mile buffer area, including agricultural lands, would be valuable for the baseline data.

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[1] For passerine surveys, qualified biologist = Bachelor of Science or higher degree in avian biology/ornithology and prior experience conducting surveys for migratory bird species (verifiable experience should be presented to the BLM and USFWS prior to commencing surveys), likely to occur in the project area. Additionally, the biologist must have the ability to identify birds visually while in flight as well as by their call.

[2] For raptor surveys, qualified biologist = Bachelor of Science or higher degree in avian biology/ornithology/raptor ecology, prior experience with hawk migration counts (verifiable experience at known raptor migration location should be presented to the BLM and USFWS prior to commencing surveys), and prior experience with raptor species likely to occur in and near the project area. Observer must also have demonstrated ability to identify raptors (eagles to age class) visually while in flight from distances of 200-1500 meters.

The surveys are intended to observe migrants flying over an area, as well as landing in an area (i.e., to include birds that would be at risk of collision with the project's towers, associated transmission infrastructure, as well as birds whose habitat would be permanently impacted by project development). Migrating birds and wintering birds traveling between various feeding and roosting areas will fly over agricultural lands in the same manner they would fly over the project area and other areas of desert land. The REAT agencies maintain that review of data within four miles is important; however, concerns related to obtaining legal access to agricultural properties and landowner confrontations from public roads are noted. Access throughout the agricultural lands should be gained via numerous County-maintained roads; should further access to private lands be necessary, the applicant should demonstrate that they have conducted their due diligence in trying to obtain access to these lands through agreements with willing landowners, by providing records of communication or copies of correspondence. If it is demonstrated to the satisfaction of the REAT agencies that access is indeed impossible and/or unsafe, migratory bird surveys within a one mile buffer of the project area will be accepted. However, as previously discussed, these data should be supplemented with any existing survey data collected by public agency or private entity within the lower Colorado River Valley.

The REAT agencies strongly assert that at least one full year of additional migratory bird survey data is necessary to evaluate bird use of the project site and surrounding area as well as analyze potential risks to migratory birds as a result of the proposed project. This position considers the applicant's 2011 survey data, which were collected using BLM avian point count protocol. Avian point counts are conducted by standing at a series of pre-selected points for 10 minutes at each point, and recording all birds seen or heard. This method is effective for estimating numbers of common or conspicuous species within a specified area (by extrapolating numbers within the survey area to the larger area); for comparing bird numbers among areas; or for detecting population trends over time. However, point counts have inherent limitations due to the scheduling of the observation dates; the short duration of each count; and the nature of data collected. Point count data cannot adequately address numbers, species diversity, or flight behavior of migratory birds or wintering birds, and cannot provide absolute numbers of listed endangered birds occurring within or adjacent to the project area. Therefore, staff has determined that avian point counts are inadequate to evaluate project impacts to migratory and wintering birds throughout the area or to State-listed endangered species that may nest on the site, and data collected using the BLM point count protocol alone do not support the applicant's conclusion that impacts to migratory birds would be less than significant.

The applicant proposed to conduct new surveys (discussed above) between February and April and then compare the conclusions from these spring 2012 surveys against the 2011 BLM point count data; if conclusions are consistent, no additional surveys would be warranted. The REAT agencies reject this proposal and remain firm on the request for at least one year of survey data according to the methodology provided in December 2011 and reiterated in the data requests below. The spring 2012 surveys will certainly

provide different results as the REAT methodology is much more comprehensive and robust.

The applicant's counterproposal does not address nocturnal migrants. This is an essential part of the environmental baseline and these species are subject to similar impacts as diurnal species. As stated in the REAT agency December 2011 recommended methodology, spring and fall migration pulses of avifauna need to be characterized for the project study area; the best way to achieve this is through the use of radar, which is requested below.

The following is a summary of the survey methodology presented by the REAT agencies to the applicant in December 2011, excepting the four mile survey buffer; please refer to that document for additional detail. The data requests that follow are the minimum level of effort and data necessary to support California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) review as well as compliance with the Migratory Bird Treaty Act (MBTA) and will be used in conjunction with focused survey data to support compliance with the federal Bald and Golden Eagle Protection Act and California Endangered Species Act.

DATA REQUEST

44. Please provide quarterly results of the migratory bird surveys to the Energy Commission, BLM, USFWS, and CDFG within two weeks of their completion. The survey report should include a detailed description of the methodology; list of surveyors and their qualifications (pre-approval of surveyors by the agencies is recommended); time, date, and weather conditions during surveys; and species observed, including abundance, locations of flying birds relative to proposed project area, flight direction, and estimates of flight altitude. Submittals of interim survey results to Energy Commission staff, BLM, USFWS, and CDFG and will be evaluated by the agencies as received.

    For passerine bird species, we request qualified biologists monitor migration trends during the fall/winter/spring migration period using the following methodology:

    - From late July to April, weekly surveys should be conducted within the project area and four miles of the project footprint, emphasizing the area between the project site and agricultural lands to the east (between the site and the Colorado River). If there are access restrictions preventing establishment of surveys points in the agricultural lands within four miles east of the proposed project area, please document the efforts taken to gain access and landowner responses. If access is not granted, please conduct surveys within the project area and at least one mile of the project area.
    - Qualified biologists should be stationed at 5 to 10 migration count locations throughout the site and scan the sky and record bird use and movement data (species, number, direction traveled, height traveled, etc.). The REAT agencies agree with the locations of the seven proposed bird observation points illustrated on Figure 1 of the applicant's January counterproposal, so

long as they provide a wide expanse of observation area from a single point and were identified by qualified biologists. Observations should occur for at least 8 hours per day under good weather conditions (i.e., no sustained precipitation or fog and incorporate both dawn and dusk hours), encompassing midday hours (i.e., at least dawn to late afternoon for passerine), for 3 consecutive days per week. A fourth day of survey each week, where qualified biologists collect avian point count data using a Breeding Bird Survey route developed by the project proponent, line transect, or comparable technique (see Bibby et al. 2000) is also recommended unless otherwise stated by the REAT agencies pending review of 2011 BLM point count methods and results, as requested in data request No. 50, below. Energy Commission staff have no recommended changes to the applicant's proposal to use the same 16 line transects that were used in 2011; staff assumes these were selected by a qualified biologist.

- Spring and fall nocturnal migration pulses of avifauna (and bats) should be characterized for the project area. Radar ornithology data, using methods such as those described by Gauthreaux and Belser (2005), adapted as appropriate to the project area, should be used to obtain these data. Staff recommends that the applicant work with a recognized expert to develop site-specific methods.

  For raptor species, we recommend qualified biologists monitor migration trends during the fall/winter/spring migration using the following methodology based on Hawk Migration Association of North America (HMANA) standard field survey techniques which were modeled after Cape May Raptor observation methods, now standard for hawk migration counts (Bildstein 2006, Bildstein et al. 2007, HMANA 2010a, HMANA 2010b):

- From August to April, weekly surveys should be conducted using unlimited-distance bird migration survey methods. Qualified biologists should be stationed at a minimum of three observation points, at least 2 miles apart, within four miles of the project footprint. If there are access restrictions preventing establishment of surveys points within 4 miles east of the proposed project area, please document the efforts taken to gain access and landowner responses. If access is not granted, please conduct surveys within the project area and at least one mile of the project area.
- Raptor observation points must fit the following criteria: (1) allow wide expanse of observation area from a single point, (2) be away from public view, and (3) afford a location where topographic and biological features are likely to be used by raptors during migration. At least one qualified biologist should lead observations at each observation points for at least four consecutive days per week. Observations should be conducted under good weather conditions (i.e., no sustained precipitation or fog) for a period of at least 8 hours, encompassing midday hours (i.e., at least 9 a.m. through at least 5 p.m. for raptors) when most species are likely to be migrating or conducting daily movements.

BACKGROUND: BREEDING BIRDS AND GILA WOODPECKER SURVEYS

The state-endangered Gila woodpecker is known to occur on the proposed project site, and other State-listed birds endemic to California in the Lower Colorado River basin, including the State-endangered elf owl, may also occur on the site. The project area encompasses more than 1,000 acres of microphyll woodland that could be impacted by the project. This habitat type supports 85 % of all bird nests built in the Colorado/Sonoran desert, despite accounting for only 0.5 % of the desert land use base (McCreedy 2011). Avian point counts conducted by the applicant in 2011 are insufficient to support adequate CEQA and NEPA review, California Endangered Species Act review, or risk analysis pursuant to the MBTA and/or Bald and Golden Eagle Protection Act. The REAT agencies provided the applicant with a survey methodology in December 2011 that, if implemented, would meet the minimum requirements needed to support environmental review.

The applicant submitted a counterproposal to the REAT agency methodology in January 2012 that did not present a proposal for focused breeding bird surveys. Staff presumes that the additional surveys for migratory birds proposed by the applicant were also intended to address breeding birds. This is unacceptable because observation points proposed by the applicant do not provide adequate coverage of breeding habitat or the mobility needed to find nesting birds. In December, the REAT agencies requested use of line transects or similar method to provide absolute counts of breeding birds. The methodology presented below for surveys of Gila woodpecker will also adequately address other breeding birds, with the exception of raptors, which are discussed in data requests 46 and 49, below.

In its January counterproposal, the applicant proposed to conduct two surveys for Gila woodpecker during the breeding season (late February/early March and late March/early April) in microphyll woodland habitat within the project area using line transects. Two surveys are not sufficient to provide an absolute count of the Gila woodpeckers on site, nor is it consistent with the level of effort required in protocol surveys for other listed bird species. Furthermore, surveys in microphyll woodland habitat adjacent to the project area are necessary to evaluate indirect impacts to the species from potential indirect offsite impacts such as noise or other disturbance, and downstream degradation of microphyll woodlands. Although there is no established survey protocol for Gila woodpecker, the REAT agencies have conferred with species experts to develop the survey methodology presented below. This is the minimum level of effort and data necessary to support California Endangered Species Act permitting. As stated above, comprehensive accounting of all incidental observations during Gila woodpecker surveys will suffice for other non-raptor breeding birds and will be used to develop risk characterization necessary for development of a Bird and Bat Conservation Strategy (formerly titled Avian and Bat Protection Plan) regarding special-status bird species.

DATA REQUEST

45. Please provide results of the breeding bird and Gila woodpecker surveys to the Energy Commission, BLM, USFWS, and CDFG as soon as possible after their completion. The survey report should include a detailed description of the methodology; list of surveyors and their qualifications (pre-approval of surveyors by the agencies is recommended); time, date, and weather conditions during surveys; and species observed, including abundance, age class of individuals, numbers of nesting pairs or territories documented for each species, breeding success if known for each pair/territory, incidental observations of other species observed but no breeding/nesting behavior noted.

    The REAT agencies request that the applicant conduct focused surveys during the breeding season (March to May), to determine distribution and abundance of avifauna, including Gila woodpecker, in the microphyll woodlands and adjacent to the project footprint (within one mile) using the following methodology:

    - Conduct absolute counts by qualified[3] biologists using line-transect or comparable technique (Bibby et al. 2000). At least eight full coverage surveys beginning in early March and continuing on 8-10 day intervals through early May.
    - Surveys should provide complete coverage of the microphyll woodland in the project area and within a one mile buffer.
    - All observations of bird species should be documented along with information regarding presence of a nest or exhibition of nesting behavior to ultimately provide an absolute count of Gila woodpeckers and other breeding birds occurring within the survey area.

BACKGROUND: GOLDEN EAGLE SURVEYS

The applicant reviewed the results of previous golden eagle surveys conducted for other projects within the project area and surrounding 10-mile buffer area. Additionally, the applicant completed helicopter surveys in areas where the presence or absence of golden eagle was unknown. These helicopter surveys were conducted in mid-March 2011 to identify nests and again in early May 2011 to determine occupation of the nests identified in the March surveys. The applicant's golden eagle surveys provided in Appendix 5.2D of the Application for Certification (AFC) did not completely follow the most recent survey protocol for this species, *Interim Golden Eagle Inventory and Monitoring Protocols and other Recommendations* (Pagel et al. 2010). The survey results are insufficient to draw any conclusions about eagle use of the project area during the breeding season or throughout the year. The USFWS recommended a detailed raptor survey protocol, to include bald and golden eagles, in June 2011. The

[3] For surveys of passerines, a qualified biologist must have a Bachelor of Science or higher degree in avian biology/ornithology, prior experience conducting surveys for migratory bird species (verifiable experience should be presented to the BLM and USFWS prior to commencing surveys), likely to occur in the project area and the ability to identify birds visually while in flight as well as by their call.

REAT agencies reiterated that request, including additional breeding season golden eagle surveys, in December 2011.

The applicant's January counterproposal did not include additional helicopter surveys as requested by the REAT agencies. Additional helicopter surveys are necessary because the applicant's 2011 surveys were conducted too late to encompass the early breeding season (January-February), which would have identified any eagles that unsuccessfully attempted to nest. Additionally, two flights are not enough to detect eagles in the area. In the experience of USFWS, additional golden eagle territories are almost always identified that were missed in the first year of flights. As such, it is standard practice to request at least two years of helicopter surveys for golden eagles in the Sonoran/Colorado desert. Additionally, the fact that the applicant's botany survey crew documented the only observation of eagles supports the concern that eagles may be present in the area that could be detected with additional surveys.

The applicant's counterproposal included ground surveys of the four inactive nests observed within 10 miles of the project area. Each nest site would be observed for two days, four hours each day, in Feb/March and for two days, four hours each day in March/early April. The REAT agencies agree that ground surveys need to be conducted. However, ground surveys also need to be conducted in suitable habitat at the margins of suspected territories in January/early February to detect any unpaired eagles that are attempting to establish a mate and territory (i.e., floater eagles). These are not possible to detect by helicopter. Additionally, observation of interactions among eagles during courtship displays or foraging flights obtained by qualified biologists from ground observation points during the nesting season are opportunities for assessing occurrence and abundance of non-breeding eagles. Occurrence of non-breeding golden eagles within at least 10 miles of the project boundary during the breeding season would be used to quantify the occurrence of all age classes of golden eagles, including juveniles, sub-adults, adult floaters, and breeding adults.

The REAT agencies are concerned that the proposed project would result in take of bald and golden eagles. Incidental take of bald and golden eagle is prohibited by the Bald and Golden Eagle Protection Act, except with issuance of a take permit. The following data are necessary to support analysis of the project's potential impacts to eagles. It is the minimum necessary to prepare an Eagle Conservation Plan and to conduct a risk characterization to support possible issuance of a take permit pursuant to the Bald and Golden Eagle Protection Act.

DATA REQUESTS

46. Please conduct additional aerial and/or ground surveys for golden eagles within a 10-mile radius of the proposed project area according to *Interim Golden Eagle Inventory and Monitoring Protocols and other Recommendations* (Pagel et al. 2010). Objectives of the survey are to:

- Record and report occupancy and productivity of local golden eagle territories;
- Document and list historical and unsurveyed habitat for future analysis to assist in determining local and regional population trajectories;
- Determine nesting chronologies;
- Provide information to document whether local golden eagle conservation efforts meet permit conditions or goals for improvements in the status of golden eagles;
- Provide a foundation to evaluate whether and which proposed activities or conditions may be affecting golden eagles; and
- Document foraging behavior, diet, and habitat use within breeding and non-breeding home ranges.

To achieve these survey objectives, data collected shall include:

- Breeding season inventory and monitoring surveys timed early enough to note courtship and nest defense;
- Breeding season monitoring to determine occupancy and reproductive success at territories;
- Presence estimation (abundance, distribution, and duration) of juveniles, subadults, and floaters within and near the project footprint (within a 10-mile survey radius);
- Unlimited distance point counts/long-sit observations to determine/estimate eagle presence;
- Carcass placement with fixed cameras;
- Non-breeding season surveys (migration and wintering) conducted using Hawk Migration Association of North America (HMANA) protocol surveys and unlimited distance long-sit point counts; and
- Prey base evaluation.

Golden eagle surveys shall be designed by a qualified raptor biologist. The REAT agencies cannot tell the applicant whom to hire for surveys. For additional detail on required survey methodology and raptor biologist qualifications, refer to the USFWS memorandum regarding golden eagle survey clarification dated January 31, 2011.

47. Please provide results of thef surveys as a Supplement to the Phase II Golden Eagle Report for the Rio Mesa Project within 2 weeks of finishing the surveys. The survey report should be consistent with the requirements of Pagel et al. 2010. Submit interim survey results to the Energy Commission staff, BLM, USFWS, and CDFG.

48. At the conclusion of eagle surveys, please prepare and submit a draft Eagle Conservation Plan to Energy Commission staff and BLM, and provide copies concurrently to the USFWS for review.

BACKGROUND: SPECIAL-STATUS OWL SURVEYS

The state-endangered elf owl and the long-eared owl (California species of special concern) may occur within the project area. In its January counterproposal the Applicant stated that elf owls do not occur on site. The basis for this assertion is the lack of California Natural Diversity Database (CNDDB) occurrences proximate to the project area. However, staff contends that a lack of recorded occurrences does not mean absence of a species and field surveys are the best way to determine presence or absence.

The applicant also asserts that the project does not provide suitable habitat for elf owl because it is too far from the Colorado River and the microphyll woodlands within the project area are too sparse to support this species; therefore, surveys are not warranted. Elf owl was observed near Corn Springs (Garret and Dunn 1981; LaPre 2011), which is more than 40 miles east of the Colorado River. Robert McKernan (Director, San Bernardino County Museum, Redlands, California) has observed elf owls nesting in a palo verde tree near Wiley's Well, Riverside County, not far from the project site (pers. comm. with Scott White, January 31, 2012). Microphyll woodlands within the project area may support elf owl. The elf owl is a secondary cavity nester (it nests in cavities of trees and cacti, generally in disused woodpecker nests). Its nesting habitat is closely correlated with nesting habitat of woodpeckers, including Gila woodpecker. In Arizona, both elf owl and Gila woodpecker are best known for nesting in saguaro cacti. However, both species also nest in numerous trees, particularly riparian woodland trees such as cottonwood and willow. Both species also nest in mesquite (an upland microphyll species). Gila woodpeckers nest in blue palo verde (a significant component of the microphyll woodland on the Rio Mesa site), though elf owls evidently have not been documented using this species.

The likelihood that elf owls may nest in secondary woodpecker cavities in blue palo verde is unknown. According to Hardy et al. (1999), "to our knowledge, other than in mesic riparian areas, elf owls have been documented only to nest in saguaros in the Sonoran Desert, possibly due to thermoregulatory constraints." Although Johnsgard (2002) states, "...they also occur on the low plains of river bottoms and adjacent table lands where, if giant cacti are not present, they nest in woodpecker holes in cottonwoods, sycamores, and probably almost any other tree species within this general habitat type." And "[i]n Texas where the saguaro is lacking, the birds occur in thorny desert scrub ... riverside cottonwood groves, mesquite groves on floodplains, and mixed juniper pinyon oak woodlands thus occurring in nearly every type of xeric woody vegetation..."

There have been no reports of elf owl on the project site, but BrightSource has not conducted focused surveys for this State-listed species or other nocturnal species to determine absence. The REAT agencies remain firm on the need for focused elf owl

surveys as stated in the December 2011 recommended methodology due to the concern that the proposed project could take elf owls and occupied habitat, possibly including nest sites. The following data are the minimum necessary to evaluate significance or take pursuant to CEQA or the California Endangered Species Act, respectively.

Long-eared owls were reported nesting at four sites in California's eastern Sonoran Desert region (McCreedy 2011). The nests were in large microphyll woodland trees (ironwood and palo verde) which are characteristic and abundant in the microphyll woodlands on the Rio Mesa project site. Nocturnal surveys designed to detect elf owl, as requested below, would also detect long-eared owl if it is present (R. McKernan pers. comm.).

DATA REQUEST

49. Please conduct focused nocturnal elf owl surveys throughout the microphyll woodland in the project area and within one mile using line transects or comparable technique with recorded calls (play-back method). Survey methods should generally be based on the breeding season methods approved by Arizona Game and Fish Department for a similar species, cactus ferruginous pygmy-owl (AGFD 2000). That protocol requires three repeated site visits during the breeding season. The specific number of repeated surveys should be at least three, and should be developed by qualified ornithologists to maximize likelihood of detecting the species if it is present. The survey dates should be based on the species' behavior patterns and detectability (i.e., response to the recording), considering available records of nesting activity and timing in the low desert region. Survey results should provide absolute counts of the number of elf owls in the study area. All incidental observations of other nocturnal species, including long-eared owl, if detected, should also be recorded.

    Please provide results of the elf owl surveys to the Energy Commission staff, BLM, USFWS, and CDFG within two weeks of their completion. The survey report should include a detailed description of the methodology; list of surveyors and their qualifications (pre-approval of surveyors by the agencies is recommended); time, date, and weather conditions during surveys; and individuals observed, including abundance, age class of individuals, numbers of nesting pairs or territories documented for each species, breeding success if known for each pair/territory, incidental observations of other species observed but no breeding/nesting behavior noted.

BACKGROUND: AVIAN POINT COUNT DATA AND ANALYSIS

The AFC and Biological Resources Technical Report (BRTR) indicate that breeding and winter season avian point count data were compiled for the project, but present only minimal description of the methods and results. The applicant provided further description of the work during a staff workshop on January 6, 2012. In response to the applicant's counterproposal, the REAT agencies will consider whether the 2011 BLM point count data can supplement or replace a fourth day of migratory bird surveys, as described above. In order to evaluate utility of the existing avian point count data, staff will need all of the raw data, as well as the applicant's detailed written explanation of analysis it has completed to date.

DATA REQUEST

50. Please provide a detailed, written report, describing all methods and results of the 2011 winter and breeding season avian point counts, including dates, times, and duration of surveys conducted, maps, tables, and summary data as applicable. Using map(s) of suitable scale, please illustrate the 16 survey transects that were surveyed for birds in 2011. Please also provide all raw data in an electronic format suitable for independent analysis by the resource agencies.

BACKGROUND: SPECIAL-STATUS BATS

The proximity of the proposed Rio Mesa SEGF to the lower Colorado River and associated floodplain, wetland, and agricultural habitats makes it an important migratory route as well as foraging and roosting habitat for numerous bat species. Extensive research has been conducted by the Bureau of Reclamation, Arizona Department of Game and Fish, USFWS, and others on bat usage of the lower Colorado River. At least 13 bat species are known to occur along the lower Colorado River (including the Cibola National Wildlife Refuge, four miles south of the project) and eight of these are special-status species: California leaf-nosed bat (BLMS, CSC[4]), Yuma myotis (BLMS), Townsend's big-eared bat (BLMS, CSC), pallid bat (BLMS, CSC), western yellow bat (CSC), cave myotis (BLMS), big free-tailed bat (CSC), western red bat (CSC), California myotis, big brown bat, hoary bat, Mexican free-tailed bat, and canyon bat. The largest known wintering colonies of California leaf-nosed bat (CSC) are located in mines approximately 1.4 miles northwest of the proposed project area.

Given the region's importance to resident and migratory bat species, USFWS, BLM, CDFG, and the Energy Commission staff are concerned that special-status bats may be impacted by construction and operation of the proposed project. As stated in the AFC (p. 5.2-54), unidentified bat species were observed flying over the project area at dusk. However, focused surveys were not conducted. It was disclosed that bats likely forage on site, but it was not stated whether the site provides suitable roosting habitat. To establish an environmental baseline for determining the project's potential for impacts to special-status bats, staff needs additional survey data and habitat suitability information.

[4] BLMS = BLM Sensitive; CSC = California Species of Special Concern

The REAT agencies recommended additional bat surveys of the applicant in their December 16, 2011 memorandum. The applicant agreed to conduct additional surveys in its January 12, 2011 memorandum and provided details regarding detection mechanisms and locations. REAT agency staff mostly concur with the applicant's proposal, which is reiterated in the data request below; the only exception is the location of one of the Anabat stations. The biologists retained by the applicant should be qualified to determine appropriate height and type of Anabat units in order to determine bat species present and habitat use in the proposed project area.

DATA REQUESTS

51. Please conduct and provide the results of one year of acoustic monitoring to provide adequate information to determine bat species present and habitat use in the proposed project area. Deploy three Anabat stations within microphyll woodland habitat to provide maximum coverage of the project area. To provide maximum coverage of the project area, please locate the Anabat stations at the northernmost and southernmost applicant-proposed locations (in Figure 1 of the January counterproposal), but locate the third station in the microphyll woodland due east of the southernmost power tower location. Data shall be collected continuously for no less than one year. Please report findings quarterly as data responses, and copy the Energy Commission staff, BLM, CDFG, and USFWS with the information.

52. Please perform an assessment of bat roost habitat, including identification of suitable day roosts, hibernacula, and maternity roosts, within the project area and vicinity. Please provide an illustration that identifies suitable roost habitat by the aforementioned types on a figure with the proposed project components and areas of proposed ground disturbance or vegetation/structure removal.

53. Provide a description of movement patterns of bats between roost sites in the vicinity of the project and foraging habitat within the project area, including a map depicting suitable roosts and foraging habitat. Also, provide an assessment of the project's impacts to these movement patterns for special-status bats.

BACKGROUND: BIRD AND BAT CONSERVATION STRATEGY

Although additional survey data is necessary to adequately analyze effects, as described above, the REAT agencies are concerned that the proposed project would result in take of migratory birds. Incidental take of migratory birds is prohibited by the Migratory Bird Treaty Act and a legal mechanism to exempt or permit such take generally is not available. To achieve compliance with the Migratory Bird Treaty Act, approval of a Bird and Bat Conservation Strategy (formerly Avian and Bat Protection Plan) is necessary prior to construction. The plan must demonstrate how the applicant would avoid and minimize incidental take of resident and migratory avian species to the extent possible. As described above, additional survey data is necessary to support development of this plan and the associated risk analysis to migratory birds. Development of this plan should be done in close coordination with the REAT agencies.

DATA REQUEST

54. Incorporating the complete survey results for breeding, migratory, and special-status birds and bats, please prepare and submit a draft Bird and Bat Conservation Strategy to Energy Commission staff and BLM, and provide copies concurrently to the USFWS for review. It is BLM's standard practice to publish this Draft Plan with the Draft Environmental Impact Statement (EIS) to provide opportunity for public review and comment.

BACKGROUND: EFFECTS OF POWER TOWERS ON AVIAN AND BAT SPECIES

The potential for large solar thermal projects to impact avian species protected under the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act and special-status bats is of concern to the resource agencies. REAT agencies have expressed concern about the potential effects of large power tower projects to birds, bats, and eagles due to the potential for direct injury and mortality from the energy flux surrounding the tower and indirect impacts due to loss of habitat. Staff needs to analyze the potential for direct and indirect impacts to birds and bats from the project's three 750-foot tall power towers, the energy flux that will be emitted from the towers, and the resultant changes in radiant heat, light, and humidity. The applicant described a model that addressed some of these issues in the January 6, 2012 public workshop. Staff requests this and additional data regarding expected energy flux and radiant heat to be emitted by the proposed towers and over the mirror field and the resultant changes in humidity that may affect habitat.

DATA REQUESTS

55. Please provide data (developed using Pro E, Solid Works or other equivalent 3D modeling package) showing expected energy flux emitted from each tower over a 24-hour period under several different weather (e.g., wind speed) scenarios. Translate this energy flux into expected increases in ambient temperature applied to a body located between the receiver, standby points/ring, and heliostats as well as changes in light and humidity between these locations. Based on 1-hour intervals, state the temperature applied to a body, humidity, and light at the top of the tower, and extending outward at reasonable, regularly occurring heights and distances. Please provide staff both a model and to-scale renderings shown in top down and side view.

56. Please provide an analysis of the impacts to desert dry wash woodland and other vegetation in the project area from reflected/concentrated solar energy flux and the potential resultant changes in light, heat, and humidity.

57. From the applicant's presentation at the January 6, 2012 public workshop, please provide the following pertaining to energy flux modeling and computations:

    a. raw data used for input to the model;

    b. boundary conditions and model parameters;

c. output files of the model runs and detailed computations;

d. an electronic copy of the model or web link to download in order to run the model and verify its findings; and

e. any publications pertinent to the development of the model or conclusions reached using its output.

58. Using the complete year of survey data requested in Data Requests 44 - 47, please conduct and provide a risk assessment for birds and bats that addresses the following questions:

a. What are the predicted fatality rates for each species or species group over the life of the project? Please provide predicted fatality rates for each special status species potentially occurring in the area, as well as for larger categories or species groups including, but not limited to waterfowl, shorebirds, passerines, and raptors.

b. How do the seasonal variation and weather conditions impact these fatality rates?

c. How do the fatality rates compare between breeding and non-breeding seasons?

d. What is the degree of accuracy in the predicted fatality rates?

Please show detailed computations with case examples in responding to each of these questions.

59. Please provide a description of the safety requirements for workers at active power tower facilities, including personal protective equipment, safety distances, and temporal and spatial restrictions.

BACKGROUND: DESERT TORTOISE

A desert tortoise translocation plan is required by the USFWS only if the applicant has demonstrated that desert tortoises and their habitats cannot be avoided and must be moved from the project site. Staff anticipates that desert tortoises and their occupied habitat cannot be avoided during project construction and operation. If desert tortoises are not translocated away from the project site, the project would likely cause mortality to the animals and cause significant degradation of occupied habitat, by removing or altering native soils and vegetation. Therefore, staff anticipates that a desert tortoise translocation plan will be required. The goals of this translocation effort should be to:

- translocate all desert tortoises from the project site to nearby suitable habitat;
- eliminate and/or minimize potential disease transmittal or spread within resident and translocated populations;
- eliminate and/or minimize impacts on resident desert tortoises outside the project site through disease testing and adhering to density thresholds;
- eliminate and/or minimize stress, disturbance, and injuries to translocated tortoises; and

- assess the success of the translocation effort through monitoring.

Staff requires a draft desert tortoise translocation plan to analyze the potential effects of translocation that may occur as a result of the proposed project's actions.

DATA REQUEST

60. Please provide a draft Desert Tortoise Translocation Plan that incorporates the most recent guidance from the BLM, USFWS, and CDFG. Please discuss the rationale for not avoiding occupied habitats, translocation procedures and guidance in the plan, including a description of clearance survey protocol and desert tortoise transportation and release procedures, and develop a long-term post-translocation monitoring and reporting plan. All methods discussed in the plan must be consistent with the most recent guidance provided by the USFWS.

    The translocation plan shall include, but shall not be limited to, the following information, which must be consistent with the most recent guidance provided by the USFWS as well as BLM and CDFG regulations:

    - Rationale for need to perform translocation;
    - Identification of potential translocation sites based first on resident desert tortoise densities (i.e., sites with depleted populations should be selected first), then on the presence of suitable soils, vegetation community, vegetation density and abundance, perennial plant cover, forage species, geomorphology, and slope;
    - Surveys of resident populations at proposed translocation sites to determine density and disease status, including health assessment sampling and attaching transmitters to individuals;
    - Description of measures that would be implemented to prevent translocated desert tortoises from entering the project site or other hazardous areas;
    - Description of quarantine facilities to provide individual quarantine for all tortoises prior to translocation;
    - Description of health assessments that would be performed by qualified biologist or veterinarian on each tortoise prior to translocation;
    - A treatment/disposition plan for each tortoise, including those unfit for translocation;
    - Description of translocation procedures, including timing (e.g., time of year, time of day);
    - Description of post-translocation monitoring and adaptive management activities;
    - Description of methods used to mark translocated tortoises and fit them with transmitters so that they can be located and identified during post-translocation monitoring;
    - Description of methods used to mark existing tortoises in the receiving population and fit them with transmitters so that they can be located and identified during post- translocation monitoring; and
    - Description of how data would be compiled, synthesized, and reported to USFWS, CDFG, BLM, and Energy Commission staff.

The proposed translocation site(s) must at a minimum:

- Be sited in accordance with all agency guidelines with respect to choice of land owner and land manager;
- Satisfy the requirements of the federal Endangered Species Act Section 7 lead (BLM) and USFWS; and
- Have no proposed rights-of-way or other encumbrances at the time of its establishment.

BACKGROUND:

As part of required project permitting, a federal Endangered Species Act Section 7 consultation must occur to address impacts to the federally-listed desert tortoise. The Palm Springs Office of USFWS has been designated to handle the Section 7 consultation with the BLM Renewable Energy Coordinating Office, the designated federal lead agency. The federal lead agency will work with the applicant to develop a Biological Assessment (BA) for the project and submit it to the USFWS as part of the consultation process.

DATA REQUEST

61. Please coordinate with BLM Renewable Energy Coordination Office to prepare and submit a BA to the USFWS per federal guidelines, available from the Palm Springs Fish and Wildlife Office. Note that federally listed bird species (e.g., southwestern willow flycatcher) may also be identified during the breeding and migratory bird surveys requested in data requests 44 - 50. These will need to be addressed in the BA, but the timing of surveys may not be conducive to providing a BA at the time of Draft EIS publication, as is BLM's standard practice. Please coordinate with USFWS and BLM regarding how to address this issue in BA preparation. Please also provide a copy of the BA to the Energy Commission staff when it is deemed complete by the USFWS.

BACKGROUND: DESERT TORTOISE AND BURROWING OWL

The AFC and Biological Resources Technical Report include summaries of field surveys and results for desert tortoise (state and federally listed threatened) and burrowing owl (California Species of Special Concern), conducted concurrently in May and June 2011. In order to fully evaluate the existing conditions and potential impacts related to both species, staff will need to review complete descriptions of methods and results of field surveys for both species. Staff requests a complete survey report, to include all data relevant to recognized field survey protocols for both species.

DATA REQUEST

62. Please provide a complete report describing methods and results of the desert tortoise/burrowing owl field surveys, including:
    a. A complete list of all wildlife species observed during the field surveys;
    b. List of field staff and field survey dates, indicating which biologists participated on each date;

c. Time, air temperature, wind speed and other relevant data for each survey date, per California Burrowing Owl Consortium (1997) and USFWS (2010) survey protocol for desert tortoises;

d. Complete descriptions of field methods, in terms of USFWS survey protocol, and Phase I, II, and III burrowing owl survey protocol;

e. Detailed description of results and all parameters recorded in the field during different phases of surveys of the burrows and sightings of Burrowing Owls and desert tortoises, including description of all desert tortoise and burrowing owl sign (include descriptions of burrows, scat, and tortoise remains by USFWS defined "classes"; description of evidence of burrowing owl activities at burrows, etc.) and maps of all desert tortoises, burrowing owls, and sign of both species;

f. A completed "Burrowing Owl Burrow Surveys" form for all survey dates (a blank example of this form is provided in Appendix E of the BRTR);

g. Copies of CNDDB field survey forms submitted to the CNDDB; and

h. Copies of the field notes/logs from surveys.

BACKGROUND: STATE PERMIT APPLICATIONS

As part of its authority granted by the Warren-Alquist Act, the Energy Commission has in-lieu permitting authority for local and state permits, and Federal permits to the extent allowed by Federal law. This commonly includes the California Endangered Species Act Section 2081 Incidental Take Permit and California Fish and Game Code Section 1600 et seq. Lake and Streambed Alteration Agreement issued by CDFG. As discussed in the AFC Section 5.2.11, the applicant intends to pursue these permits through the Energy Commission's siting process. Energy Commission staff will coordinate with CDFG and the applicant to ensure that the Commission's Decision, as part of its in-lieu permit authority, contains all necessary requirements and meets all state standards and guidelines.

DATA REQUESTS

63. Please prepare and submit an Incidental Take Permit application to the Energy Commission staff, and provide copies concurrently to the CDFG for review. Species addressed in the application shall include, but are not limited to, desert tortoise, Gila woodpecker, and elf owl.

64. Pursuant to Section 1600 et seq. of the California Fish and Game Code, please submit an application for a Lake and Streambed Alteration Agreement, as well as an application fee, to the California Department of Fish and Game, and provide a copy of the application to the Energy Commission staff.

BACKGROUND: CONFORMANCE WITH THE LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM

It appears that the Lower Colorado River Multi-Species Conservation Program (LCRMSCP) area may overlap with the eastern extent of the proposed project area, and incidental take of migratory birds could interfere with achieving the biological goals and objectives in the plan. Particular focus is needed on the plan's habitat restoration activities for the benefit of migratory birds in the vicinity of the proposed project, and whether a potentially significant mortality source should be constructed proximate to productive and newly restored riparian habitats in the LCRMSCP area. Staff requests the following information to analyze conformance with the LCRMSCP.

DATA REQUEST

65. Because of the proposed project's proximity to the LCRMSCP area, please provide an analysis of the proposed project's conformance with the goals and objectives of the LCRMSCP, particularly as it relates to potential impacts to migratory birds.

BACKGROUND: SMALL MAMMAL SURVEYS

The AFC provides no information on special-status small mammal occurrence in the project area. AFC Table 5.2-4 states that Colorado River cotton rat (California Species of Special Concern) and pallid San Diego pocket mouse (California Species of Special Concern) have potential to occur within the project area, but the status onsite is "Undetermined". Staff requests additional information to be able to determine potential impacts of the proposed project to small mammals in the project area.

DATA REQUESTS

66. Please describe the surveys conducted for special-status small mammals within the project area. If no such surveys were conducted, please provide an explanation regarding why the surveys were not completed

67. Please provide an assessment of suitable habitat for special-status small mammals, including but not limited to Colorado River cotton rat and pallid San Diego pocket mouse, to occur in the project area and an explanatory rationale regarding whether these species could occur in the project area.

68. Please provide an assessment of potential impacts of the proposed project to small mammals. Include impact avoidance and minimization measures or a mitigation proposal for potentially significant impacts. These surveys also must address primary prey species of raptors, including golden eagle, such as cottontails, jackrabbits, and ground squirrels.

BACKGROUND: MOJAVE FRINGE-TOED LIZARD HABITAT

Many Mojave fringe-toed lizards (MFTL) were observed in the northern portion of the proposed gen-tie, near the Colorado River Substation. MFTL occur in fine, loose,

aeolian sand in arid, sparsely vegetated habitats and are associated with creosote bush scrub throughout much of its range. Habitat preferences are more closely tied to the landform than to the vegetation community, and Sonoran creosote bush scrub with an active sand layer can also support this species. The applicant's herpetologists classified approximately 565 acres of suitable MFTL habitat as good habitat, moderate habitat, or poor habitat (AFC p. 5.2-52). However, it is unclear how these classifications are defined. Further, it is unclear why only 565 acres were classified when the AFC identified 789 acres of desert dunes within the biological study area (BSA) (AFC Table 5.2-5). The Riverside County-owned parcel within the project area was not surveyed due to a lack of right-of-entry at the time, but was determined by the applicant to be not likely occupied by MFTL because there was no suitable habitat surrounding the parcel and a review of aerial imagery of the parcel did not indicate suitable habitat; it is not clear how the applicant defined suitable habitat in order to make this assertion. Staff requests clarification on these points to understand the quality of the MFTL data provided and the extent of MFTL habitat within the study area.

DATA REQUESTS

69. Please define the poor, moderate, and good habitat classifications used for MFTL (AFC p. 5.2-52) and include citations articulating this classification.

70. Delineate any areas of creosote scrub with an active sand layer in the BSA, possibly near the desert dunes, and clarify whether this habitat was surveyed for MFTL presence or assessed for habitat suitability.

71. Please explain why MFTL focused surveys were only conducted on 567 acres (AFC p. 5.2-38), when 789 acres of desert dunes, which is presumably suitable MFTL habitat, occurs in the BSA (AFC Table 5.2-5). Also, clarify the discrepancy between the 565 acres of habitat classification and 567 acres of survey area.

BACKGROUND: INVASIVE WEEDS

The AFC notes invasive plant species occurring on the project site (page 5.2-48). Invasive species increase fire risk, reduce natural habitat for native plants and wildlife, and compete with native plants for water and other resources. Noxious weeds can be accidentally introduced onto a site via equipment tires, soil imported from off-site, and various other vectors. The Soils section of the AFC indicates a variety of temporary erosion control measures may be necessary, including mulch barriers. Staff notes that, depending on the plant material and its source, mulch or straw could include seeds of invasive weed species. Staff needs to review a draft Weed Management Plan in order to evaluate whether it would reduce potential impacts on-site and to adjacent off-site habitat below a level of significance. In addition, BLM's NEPA review guidelines require that any proposed use of herbicides must be analyzed in the Draft Environmental Impact Statement.

DATA REQUESTS

72. Please prepare and submit a Draft Integrated Weed Management Plan. The plan shall only include weed control measures with a demonstrated record of success, based on the best available information from sources such as: The Nature

Conservancy's Global Invasive Species Team, Cooperative Extension, California Invasive Plant Council, and the California Department of Food & Agriculture Encyclopedia. The Draft Plan must include the following components:

a. An assessment of nonnative and invasive weeds occurring on the site and a one-mile adjacent buffer area prior to construction activities;
b. An assessment of nonnative and invasive weeds that could be introduced into the project area (e.g., via seeds adhering to construction equipment);
c. A prevention plan, to include installation and maintenance of vehicle wash and inspection stations, and close monitoring of materials brought onto the site;
d. A monitoring plan, to ensure early timely detection of weed invasions; the plan should describe methods to be used to evaluate the presence and abundance, and evaluate threat, of introduced weeds during construction, operation, and decommissioning;
e. An action or mobilization plan to ensure timely and appropriate control of infestations. Weed infestations must be controlled or eradicated as soon as possible upon discovery, and before they go to seed, to prevent further expansion. Control methods shall meet the following criteria:
    i. Manual. Well-timed removal of plants or seed heads with hand tools; seed heads and plants must be disposed of in accordance with guidelines from the Riverside County Agricultural Commissioner.
    ii. Chemical. Herbicides known to have residual toxicity, such as pre-emergents and pelts, shall not be used in natural areas or within channels (engineered or not) where they could run off into downstream areas. Only the following application methods may be used: wick (wiping onto leaves); inner bark injection; cut stump; frill or hack & squirt (into cuts in the trunk); basal bark girdling; foliar spot spraying with backpack sprayers or pump sprayers at low pressure or with a shield attachment to control drift, and only on windless days, or with a squeeze bottle for small infestations;
    iii. Specific and detailed guidelines for herbicide use to prevent overspray onto surrounding areas where it would adversely affect wildlife or native plants and to avoid herbicide use in or around any environmentally sensitive areas within or adjacent to the project site.
f. Monitoring and weed control methods shall be consistent with BLM's Vegetation Treatments Using Herbicides on BLM Lands in 17 Western States (BLM 2007) and the National Invasive Species Management Plan (NISC 2008); and
g. Reporting schedule and report contents.

The Weed Management Plan shall address California Department of Food and Agricultural (CDFA) "A" and "B" rated weeds, BLM "A" and "B" ranked weeds,

and Californian Invasive Plan Council (Cal-IPC) "High" and "Moderate" ranked weeds.

73. Please provide the following information on all herbicides proposed for use in the project area during construction and/or operation:
    a. Herbicide common name, trade name, formulation, and chemical composition;
    b. Proposed use and application method;
    c. Toxicity, leaching potential, persistence in soil;
    d. State- or agency-specific restrictions; and
    e. Analysis of potential for exposure to adjacent desirable vegetation, potential pollution of surface water based on proximity and topography, potential pollution of groundwater based on geology/soils and depth to groundwater, and potential exposure of wildlife including aquatic species.

BACKGROUND: GEOGRAPHIC INFORMATION SYSTEM DATA

Staff requests Geographic Information System (GIS) data of all biological survey results and proposed project components in order to create figures for the Staff Assessment and conduct quantitative analyses.

DATA REQUESTS

74. Please provide GIS data for all biological survey results (e.g., special-status species occurrences, vegetation mapping, desert tortoise habitat, delineation of waters of the U.S. and State, etc.) to the Energy Commission staff, USFWS, BLM, and CDFG.

75. Please provide GIS data for all proposed project components, including those depicted on figures 5.2-2 through 5.2-4 to all of the above agencies.

BACKGROUND: JURISDICTIONAL WETLANDS AND WATERS

The AFC and BRTR briefly mention "surface water control" (e.g., AFC page 5.2-81 and BRTR page 5-19). The Water Resources section of the AFC indicates that surface flows throughout most of the project area will not be redirected, but that a "storm water management system" to include "berms/ditches, bypass channels, or swales to direct run-on flow from upstream areas and run-off flow through and around each facility.... Additionally, storm drainage channels will include a downstream flow dispersion feature to reduce the depth and velocity of the flows." Similar language is found in the Soils section (page 5.11-18). The AFC does not include maps or descriptions of an internal transportation system (i.e., access routes to various facility components, including power blocks and heliostat fields for administration, operations, and maintenance). Additionally, the AFC does not indicate construction methods for buried infrastructure components. Finally, the AFC does not indicate the numbers or locations of heliostat support structures to be constructed in jurisdictional waters. All construction activities within jurisdictional channels have the potential to alter net flow rates, peak flow rates, sedimentation, and water quality parameters of surface flows on the site and in channels downstream from the site. All permanent alterations to jurisdictional channels, such as (but not limited to) road or trench crossings, channel armoring, foundations, and heliostat support structures, have the potential to alter flow rates and water quality on the site and in downstream channels. In order to evaluate the project's potential to affect jurisdiction waters on the site and downstream, staff requires additional description of storm water control structures and all project components that would be located permanently or temporarily within jurisdictional channels.

Energy Commission staff will coordinate closely with CDFG staff to evaluate the project's potential impacts to state jurisdictional streambeds, pursuant to Section 1600 et seq. of the California Fish and Game Code. CDFG requires the applicant to submit an application for a Lake and Streambed Alteration Agreement, as well as an application fee, in order to initiate review of the project. The project also would affect jurisdictional waters of the US, regulated under Section 404 of the Federal Clean Water Act. Staff will need to evaluate impacts to federally jurisdictional resources in its staff assessment.

The AFC identified direct impacts to 1,264.94 acres of CDFG-jurisdictional washes, including 621 acres of USACE-jurisdictional washes (AFC page 5.2-82; Table 5.2-14), and 1,120 acres of microphyll (blue palo verde/ironwood) woodland (AFC page 5.2-66, Table 5.2-11). Staff has not verified these acreages, or considered potential indirect or off-site impacts to additional acreage. Recent solar projects approved by the Energy Commission as well as BLM have required compensatory mitigation up to three acres for every one acre of microphyll woodland impacted. This ratio is consistent with BLM's Northern and Eastern Colorado Desert Coordinated Management (NECO) Plan. Impacts to jurisdictional wetlands and other waters may have additional or separate mitigation requirements, including but not limited to on-site enhancement, restoration, or creation, or purchase of credits at an approved mitigation bank. Impacts have not yet been assessed by Energy Commission staff and this report does not preclude requiring higher mitigation ratios, if appropriate. At this time it is unclear whether enough

appropriate compensatory habitat acreage or credits is available for acquisition, which has been the standard mitigation approach. If sufficient compensation acreage is not available, alternate mitigation approaches (e.g., enhancement, restoration, or creation) must be developed and demonstrated to be feasible. Staff will work with the applicant and agencies to identify and ascertain the feasibility of mitigation for impacts to desert washes, including jurisdictional wetlands and other waters as well as microphyll woodland habitat.

DATA REQUESTS

76. Pedestrian survey/delineation methodology. Expanding on the methodology provided to CDFG on October 7, 2011 and summarized in the AFC (pg. 5.2-40-43), please provide: a detailed description of the pedestrian survey methodology, the number of data collection points taken in the field during pedestrian surveys, a figure illustrating the locations of data collection points, coordinates of each data collection point, the geographic extent of each data collection point, the criteria for selection of the data collection points, all parameters recorded at each data collection point, and copies of field notes/logs for each data collection point.

77. Storm water management system. Please provide plan views and cross sections of all proposed components of the storm water management system.

78. Off-site downstream flows. Please provide narrative descriptions, maps, and flow calculations for all jurisdictional channels that may convey surface flow onto and off of the site. Include clear explanations of the existing conditions in and adjacent to these channels, as well as explanations of any project-related alterations to existing conditions and the locations of these alterations (i.e., inside or outside of the perimeter fence). In particular, please indicate which channels (if any) would have peak flows substantially increased or decreased, and how those increases or decreases may affect downstream erosion, hydrology, and vegetation.

79. Temporary and permanent channel alterations. Please provide narrative descriptions of all proposed internal transportation system components and buried infrastructure components, with examples (plan view and cross section) of typical construction at channel crossings and across upland area. Drawings should include locations of any proposed ditches or berms relative to the road or other infrastructure component, their depth or height, and any proposed armoring.

80. Best Management Practices. Please provide narrative descriptions of any proposed best management practices or other techniques to be implemented in jurisdictional channels, or in any upstream areas where runoff might enter jurisdictional channels. Please incorporate applicable soils, drainage, erosion, storm water, and flooding BMPs in the Best Management Practices and Guidance Manual: Desert Renewable Energy Projects (Energy Commission Publication #REAT-1000-2010-009-F).

81. Feasibility of compensation or other mitigation strategies. Please provide a review and summary describing the availability of suitable compensation lands to offset the project's anticipated impacts to state jurisdictional streambeds, including microphyll woodland habitats. In addition, please provide a review and summary of any feasible alternate approaches to mitigating impacts to these resources, including habitat creation or enhancement and supporting literature demonstrating success of these activities.

BACKGROUND: SPECIAL-STATUS PLANTS

The applicant's botanical surveys and results are briefly described in the AFC and accompanying Biological Resources Technical Report (BRTR). However, neither the AFC nor the BRTR provide a full report of the methods, results, and interpretation of the botanical survey work, per the recommended contents and format of the two applicable agency guideline documents (CDFG 2009; BLM 2009). The AFC and BRTR provide confusing and sometimes contradictory conclusions in tables summarizing potential occurrence of special-status plants on the site. In particular, the BRTR provides unsupported conclusive determinations of "not present" for many species. Staff needs a more complete explanation of the field work and follow-up analysis for its evaluation of the project's potential impacts to special status plants.

Based on a review of the California Native Plant Society's (CNPS) online *Inventory of Rare and Endangered Plants*, staff believes that at least one additional special status species, *Astragalus sabulonum* (gravel milk-vetch), may have potential to occur on the project site, but was not addressed in the AFC and may not have been adequately addressed in botanical field survey methods.

Expected project impacts to rare plants documented on the site are discussed briefly. It is unclear to what extent the project would affect Harwood's milk-vetch, or what project design features would minimize impacts. It also is unclear whether the project may have indirect or off-site impacts to other special status plants. There is no evaluation of potential impacts to special-status plants with potential to occur on the site but not found during field surveys. Mitigation measures proposed in the AFC for vegetation and plants do not include measures to reduce impacts to Harwood's milk vetch or other special-status plants located on the site or with potential to occur on the site.

In order to complete its staff assessment for the project, Energy Commission staff needs additional information on methods, results, and interpretation of special status botanical surveys completed to date, as detailed in the data requests below. Staff also requests a proposal for a feasible approach to mitigation of potentially significant impacts to special-status plants to replace or complement measures adopted by the Energy Commission on previous similar projects. Staff recommends coordination with the BLM State botanist to develop any special-status plant mitigation proposals.

DATA REQUESTS

82. Comprehensive special-status plant survey report. Please provide a complete report, describing methods and results of all botanical surveys completed to date. The report must address all content as recommended by CDFG (2009) and BLM (2009), including the following:

    a. A complete list of all plant taxa located during the field surveys, either on the project site or on any off-site locations where there is potential for off-site impacts (e.g., impacts of dust or other site activities in buffer areas surrounding the project site, or wash habitats downstream of the site, that may be affected by altered on-site hydrology);
    b. List of field staff and field survey dates, indicating which botanists participated on each date;
    c. Copies of California Natural Diversity Data Base (CNDDB) field survey forms submitted to the CNDDB;
    d. Revisions to tables in the AFC, BRTR, and Fall 2011 Botany Report to reconcile the columns titled "Potential to occur onsite" and "Status onsite," as well as the BRTR column titled "Potential onsite status." These two or three columns should either be combined into a single column or, if retained as separate columns, should all convey consistent information. In numerous cases, the BRTR "Status onsite" column indicates "not present," an absolute, while we find that methods described can support, at most, a conclusion of "low likelihood" and, in some cases, "unknown." Similarly, the AFC columns "Potential to occur on project site" and "status onsite" often seem to contradict one another. For example, ribbed cryptantha is ranked as "moderate" potential to occur on project site, and also "observed" on the site. The phrase "suitable habitat present onsite" appears frequently throughout the table, and in one case (Wiggins' cholla) reads "suitable habitat, present onsite." The comma seems to indicate that the plant (not just the habitat) is present on the site. In cases where suitable habitat is present, but the plant was not observed, please provide expanded rationale to support the characterization of its potential to occur. For example, in cases where suitable habitat for a particular taxon is present and there are known occurrences nearby, staff would generally presume that the plant has a high probability of occurring on the site. However, if sufficiently detailed field surveys were completed within the habitat, and scheduled during a period when observations off-site confirmed that the plant could be found, then we generally would presume lower probability. Please add *Astragalus sabulonum* ("gravel milk-vetch") to the table and text as appropriate, throughout this section of the AFC.

e. Clarification of Biological Resources Technical Report (BRTR) information. Please provide clarification of the following points from the BRTR and other documents:
    i. BRTR page 3-5 and Fall 2011 Botany Report p. 203 uses the phrase "to the degree feasible". Please describe in detail any modifications that were made to the CDFG (2009) and BLM (2009) botanical survey guidelines protocols; the reasons for judging adherence to the guidelines "infeasible"; and documentation of approval of any modifications by the respective agencies.
    ii. BRTR, page 3-6, uses the phrase "most survey sections". Please clarify the definition as used in the report (e.g., is a "survey section" equivalent to a square-mile section as shown on topographic maps, or were project specific survey areas termed as "sections" for the purpose of assigning field staff to specific areas?).
f. Please assess likelihood of occurrence of *Astragalus sabulonum* (gravel milk-vetch) in the survey areas and, if it may occur, evaluate potential impacts. Please base this assessment on available data and a review of field work completed to date.
g. BRTR, pages 5-5 and 5-6. Please expand the discussions of expected project impacts to each special-status plant taxon observed on the site. For annual or short-lived perennial species, the field survey observations reflect only ephemeral census numbers; for these taxa, please describe impacts in terms of occupied or suitable habitat rather than census numbers. Please confirm that all locations of ribbed cryptantha are outside any areas to be disturbed directly or indirectly by project activities; and describe in detail any "appropriate project design and implementation" that would reduce or minimize impacts potential impacts to Harwood's milk-vetch.

83 As requested by Riverside County in its comments on the project (Riverside 2012), please clarify (and preferably quantify) the amount of rainfall needed in summer 2012 to be determined as adequate to conduct late-season botanical surveys in fall 2012.

84. Special-status plant mitigation: Please provide a description of mitigation measures for any potentially significant project impacts to special status plants, including a strong rationale to support each measure's feasibility and efficacy.

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BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION FOR THE *RIO MESA SOLAR ELECTRIC GENERATING FACILITY*

DOCKET NO. 11-AFC-04
PROOF OF SERVICE
(Revised 1/23/12)

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*indicates change

DECLARATION OF SERVICE

I, Cenne Jackson, declare that on, February 7, 2012, I served and filed copies of the attached All Parties Letter dated January 23, 2012. This document is accompanied by the most recent Proof of Service List, located on the web page for this project at:

[http://www.energy.ca.gov/sitingcases/riomesa/index.html].

These documents have been sent to the other parties in this proceeding (as shown on the attached Proof of Service list) and to the Commission's Docket Unit or Chief Counsel, as appropriate, in the following manner:

(Check all that Apply)

For service to all other parties:

_x_ Served electronically to all e-mail addresses on the Proof of Service list;

_x_ Served by delivering on this date, either personally, or for mailing with the U.S. Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses **NOT** marked "e-mail preferred."

AND

For filing with the Docket Unit at the Energy Commission:

_x_ by sending electronic copies to the e-mail address below (preferred method); ***OR***

___ by depositing an original and 12 paper copies in the mail with the U.S. Postal Service with first class postage thereon fully prepaid, as follows:

CALIFORNIA ENERGY COMMISSION – DOCKET UNIT
Attn: Docket No. 11-AFC-4
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

OR, if filing a Petition for Reconsideration of Decision or Order pursuant to Title 20, § 1720:

___ Served by delivering on this date one electronic copy by e-mail, and an original paper copy to the Chief Counsel at the following address, either personally, or for mailing with the U.S. Postal Service with first class postage thereon fully prepaid:

California Energy Commission
Michael J. Levy, Chief Counsel
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I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

Original signed by:
Cenne Jackson
Siting Office