CALIFORNIA ENERGY COMMISSION
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April 1, 2009

Mr. Tony Penna
Inland Energy, Inc.
3501 Jamboree Road
South Tower, Suite 606
Newport Beach, CA 92660

RE: PALMDALE HYBRID POWER PROJECT (PHPP) (08-AFC-9)
DATA REQUEST SET 2 (#s 91-156)

Dear Mr. Penna:

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 (#s 91-156) is being made in the areas of Air Quality (91-114), Alternatives (#115-126), Biological Resources (#127-136), Cultural Resources (#137), Lane Use (#138-142), Traffic and Transportation (#143),Transmission System Engineering (#144-146), Visual Resources-Visible Plume (#147-155), and Water Resources (#156). Written responses to the enclosed data requests are due to the Energy Commission staff on or before May 1, 2009, or at such later date as may be mutually agreeable.

Staff would like to note that the continuing discussion about the applicant's objections to staff's data requests 86 and 87 (Waste) and data requests 22-25 (Cultural Resources) has resulted in resolution of both issues to the satisfaction of both parties. As noted in docketed correspondence, the applicant has proposed two conditions of certification that satisfactorily address our concerns about potential contamination issues along the transmission route. In light of those two conditions, staff withdraws data requests 86 and 87.

In addition, staff has provided significant clarification of its original Data Requests 22-25. The applicant has indicated that it does not object o this clarified data request. Therefore, we withdraw data requests 22-25, and submit the modified data request with this package.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to both the Committee and me within 20 days of receipt of this notice. The notification must contain the reasons for not providing the information, and the grounds for any objections (see Title 20, California Code of Regulations, Section 1716 (f)). If you have any questions, please call me at (916) 654-4640 or email me at fmiller@energy.state.ca.us.

Sincerely,

Felicia Miller
Project Manager

Enclosure

PROOF OF SERVICE (REVISED 2/27/09) FILED WITH ORIGINAL MAILED FROM SACRAMENTO ON 4/1/09
HA

Technical Area: Air Quality
Author: Steve Radis

BACKGROUND

The Application for Certification (AFC), page 5.2-55, states that the oxides of nitrogen (NOx) emissions from project construction equipment and activities may cause an impact as high as 349.7 µg/m^3 (with background and utilizing the ozone limiting method) for nitrogen dioxide (NO_2). This would cause a violation of the State's 1-hour NO_2 air quality standard, which is 339 µg/m^3. The AFC further indicates that the potential new violations of the State 1-hour NO_2 standard can be avoided with restrictions on the facility's construction hours. However, the construction modeling utilizes a source configuration that is not representative of the proposed grading of the facility. The modeling specifically limits grading of the solar field area to a small area source in the middle of the property and far from the property boundary (see AFC Appendix G.4, page 2-18). In reality, grading for the solar field will occur over a much wider area and adjacent to the property boundary. Therefore, it is likely that the project would cause a violation of the State 1-hour NO_2 standard.

DATA REQUESTS

91. Please provide a revised NO_2 construction modeling analysis using an area source (or multiple sources) that is more representative of proposed site preparation of the solar field (area sources SOLARC and SOLARF). The use of the AERMOD PVMRM modeling option might be useful in addressing near field NO_2 concentrations.

92. Please provide a NO_2 construction emission mitigation proposal that will reduce potential impacts and avoid a violation of the State NO_2 standard. Emission mitigation should include such measures as limiting construction equipment to CARB (California Air Resources Board) Tier 2 or Tier 3 engines, which would significantly reduce NO_x emissions from the OFFROAD2007 fleet average emissions used in the construction emission inventory.

BACKGROUND

The AFC, page 5.2-56, states that particulate matter less than 10 microns (PM10) emissions from construction equipment and activities may cause PM10 impact as high as 20.7 µg/m^3. This would cause and contribute to violations of the State and Federal 24-hour PM10 air quality standards (of 50 µg/m^3 and 150 µg/m^3respectively) in the air basin. The AFC also indicates that the restriction of daily construction hours “...has a positive impact on reducing modeled particulate concentrations." As noted above, the construction source configuration is not representative of proposed construction activities, and actual impacts would likely be much higher than the AFC modeling would indicate. Since the proposed project would contribute to an existing air quality standard violation, which would be considered a significant impact, the California Environmental Quality ACT (CEQA) requires the implementation of all feasible mitigation.

DATA REQUEST

93. Please provide a revised PM10 construction modeling analysis using an area source (or multiple sources) that is more representative of the proposed site preparation of the solar field (area sources SOLARC and SOLARF).

94. Please provide a PM10 construction emission mitigation proposal that will reduce potential impacts and minimize a violation of the State PM10 standard. Emission mitigation should include such measures as limiting construction equipment to CARB Tier 2 or Tier 3 engines, which would reduce PM10 emissions from the OFFROAD2007 fleet average emissions used in the construction emission inventory. In addition CARB Level 3 diesel particulate matter (DPM) catalysts should be considered, which would reduce combustion PM10 emissions by more than 85 percent.

BACKGROUND

It appears that not all PHPP-related sources have been included in the air quality modeling for the project. Specifically, emissions associated with the non-stationary sources (vehicles, fugitive dust, etc.) required for solar array operations and maintenance have not been included in the modeling analysis for all pollutants in the Class I and Class II modeling. In addition, it appears that the visibility modeling did not include all project operational sources.

DATA REQUEST

95. Please verify that all project-related emission sources, including the solar array operating and maintenance non-stationary emissions sources (including vehicle use, mirror washing, maintenance inspections and repairs of the piping network, herbicide application and dust suppressant application) have been included in the Class I, Class II and visibility modeling analyses. All relevant sources should be included in the modeling for commissioning, normal operations and startup/shutdown scenarios. These emissions are summarized in AFC Section 5.2.4.1 and Table 5.2-27. The Class I modeling does not need to be revisited if EPA does not require the inclusion of the non-stationary solar array operations and maintenance emission sources.

96. Please provide revised air quality modeling results for all scenarios and pollutants where the non-stationary solar array operations and maintenance emission sources (including vehicle use, mirror washing, maintenance inspections and repairs of the piping network, herbicide application and dust suppressant application) were excluded in the AFC modeling, as well as all relevant input, output and intermediary files in electronic format. These emissions are summarized in AFC Section 5.2.4.1 and Table 5.2-27.

BACKGROUND

The AFC, pages 5.2-52-53, provide an overview of project-related greenhouse gas (GHG) emissions. However, GHG emissions are not included for all source activities. The AFC does not contain any analysis of the significance of project-related GHG emissions. The Governor's Office of Planning and Research (OPR) recently published Preliminary Draft CEQA Guideline Amendments for Greenhouse Gas Emissions. While

currently a draft, the proposed CEQA Guideline Amendments provide the most up-to-date guidance on evaluating the significance of GHG emissions.

DATA REQUEST

97. a. Please provide GHG emission estimates for construction activities, including all of the GHG emissions from the offroad equipment and onroad vehicles shown in the construction emission tables within Appendix G.3.

    b. Please address the significance of the GHG emissions quantified above.

BACKGROUND

Staff's position for operating emissions CEQA impact determination is that all nonattainment pollutants and their precursors need to be mitigated through emission reductions at a minimum ratio of 1:1, with larger ratios required for inter-pollutant, inter-basin and distant emission reduction credit (ERC) sources. The Mojave Desert Air Basin in the area of the project site is classified as nonattainment for the state ozone and PM10 standards and federal ozone standard. Without proper emission reduction mitigation, this project could contribute to existing violations of the state and federal ambient air quality standards.

The applicant originally had proposed to utilize the South Coast Air Quality Management District (SCAQMD) Rule 1309.1 Priority Reserve to obtain offsets (Volatile Organic Compounds (VOCs) for their NOx liability) for the PHPP. Due to a court decision in 2008, emission offsets from the SCAQMD Rule 1309.1 Priority Reserve are not currently available for PHPP emission offsets. The PHPP is currently considering obtaining emission offsets from the San Joaquin Valley Air Pollution Control District (SJVAPCD) or from sources in the San Joaquin Air Basin (SJAB).

DATA REQUESTS

98. Please provide a revised emission offset proposal for the project's NOx emissions liability. The revised ERC proposal should clearly identify the source of all ERCs and include documentation of all offset ratios, including inter-pollutant and inter-basin ratios.

99. Please provide the analysis supporting the proposed inter-basin/inter-pollutant trading ratios for ERCs from the San Joaquin air basin for each pollutant.

100. Please provide documentation that the Antelope Valley Air Quality Management District (AVAQMD), SJVAPCD, CARB and US Environmental Protection Agency concur with the revised ERC proposal.

BACKGROUND

Staff is aware of a large NOx ERC located in the Mojave Desert Air Quality Management District in amount of approximately 907 tons from TXI – Riverside Cement Company in Oro Grande (see www.mdaqmd.ca.gov). This ERC, once the close of public comment on this banking action on February 11,2009, will be available to applicants such as the City of Palmdale (City) for the PHPP. Staff believes that the City should aggressively pursue the ERCs available within the Mojave Desert Air Basin to fully offset and mitigate their NOx liability.

DATA REQUESTS

101. Please provide documentation as to the status of negotiations between the City and TXI Riverside Cement Company in securing NOx ERCs, and if available an option contract between TXI and the City.

BACKGROUND

The AFC (p.5.2-80) states that the applicant intends to work with the Antelope Valley Air Quality Management District to develop a rule to allow for the banking of PM10 ERCs from the paving of unpaved roads. Staff needs to understand how this effort is proceeding and whether a rule will be developed, and roads identified for paving within the AFC review timeline.

DATA REQUESTS

102. Please identify the progress in developing a fugitive dust from paving roads banking rule with the AVAQMD.

103. Please identify the specific roads in the vicinity of the PHPP that would be used to generate the PM10 ERCs.

104. Please provide all appropriate calculations including vehicle miles traveled via traffic counts and silt content analysis used to quantify the emission reductions that are expected to be generated.

105. Please adjust all calculations quantified in Data Request 14 to quantify the necessary roads to be paved to generate PM2.5 mitigation.

BACKGROUND

Since the priority reserve option from the South Coast AQMD is not available to the applicant, then VOC ERCs will need to be secured within the Antelope Valley Air Quality Management District, or some interpollutant or inter-district/inter-basin mitigation proposal will need to be made by the applicant. Staff needs to know the status of where the VOC ERCs will be coming from and when the applicant will be able to reveal those sources of ERCs.

DATA REQUEST

106. Please identify the sources and quantities of VOC ERCs that will be secured within the AVAQMD or another air district through an inter-district or inter-basin offset proposal.

BACKGROUND

The applicant has proposed to provide SOx emissions offset mitigation, but the specifics of that mitigation proposal, including the source of the ERCs, has not been provided. Staff needs to know the status of where the SOx ERCs will be coming from and when the applicant will be able to reveal those sources of ERCs.

DATA REQUESTS

107. Please identify the sources and quantities of SOx ERCs, or interpollutant ERCs, that will be secured within the AVAQMD or another air district through an inter-district or inter-basin offset proposal.

BACKGROUND

A Determination of Compliance (DOC) analysis from the AVAQMD will be needed for staff's analysis. The application for the DOC has been submitted to the AVAQMD. Staff will need to coordinate with the AVAQMD to keep apprised of any air quality issues determined by the District during their permit review. The City of Palmdale has not yet submitted a Prevention of Significant Deterioration (PSD) permit application to EPA Region 9.

DATA REQUESTS

108. Please provide copies of any permit application materials, other than AFC materials, submitted to the AVAQMD and EPA.

109. Please provide copies of any subsequent submittals to or from the District and/or EPA within 5 days of their submittal to or their receipt from the AVAQMD.

BACKGROUND

Attachment 1 to the *Class II Area Dispersion Modeling Protocol for the Proposed Palmdale Hybrid Power Project* documents the Applicant's request to the AVAQMD for information on cumulative emission sources (see AFC Appendix G, p. 327-328). However, this request does not include new permit requests or yet to be built projects (5 tons/year or greater of any modeled pollutant) within 6 miles of the project site. Therefore, it is possible that the cumulative impact analysis does not reflect potential future projects and may have underestimated cumulative air quality impacts.

DATA REQUESTS

110. Please confirm in writing what permit applications or permitted future sources, if any, are located within six miles of the PHPP site. This list of sources should also include any projects that have been permitted but are not yet operating.

111. If additional cumulative emission sources are identified, please provide a revised cumulative air quality modeling analysis.

BACKGROUND

Staff understands that the applicant has chosen the GE Rapid Start Process design for their project which should dramatically reduce start-up durations and thus emissions during start-up. However, since this is a new state of the art technology for large combustion turbines, staff needs to see information from General Electric that substantiates the duration and emission claims stated in the AFC, so that the staff is reasonably confident that the durations and emission levels will be met. Staff also understands that the information being requested in the following data requests may be

confidential, and thus provisions could be used if necessary for this information to remain confidential at the Commission.

DATA REQUESTS

112. Please provide data, and/or graphical information from GE that substantiates the durations of cold, warm and hot start-up for both turbines using the Rapid Start Process as shown in Table 2-3 and in Appendix G Table 28.

113. Please provide data, and/or graphical information from GE that substantiates the NOx, VOC and CO emissions for cold, warm and hot start-ups and shutdowns (shown in pounds/event per turbine) presented on pp. 5.2-34, 5.2-35 and 5.2-37, and the hourly start-up emissions during start-up and shutdown shown in Table 5.2-21.

BACKGROUND

The Applicant has made numerous modifications in their proposed project description (Supplemental Responses to CEC Data Requests Set 1, dated March 2, 2009) that will impact the air quality impact analysis (AQIA) for the PHPP. These modifications include:

- Changes to the conceptual site layout include slight changes to the primary site access road, addition of a second (emergency) access road, relocation of the gas metering station, adjustment to the locations of the detention basins, a decrease in the acres of solar field and a slight increase in the number of acres (5 acres) for the power plant site overall.
- Changes in the power block plot plan and sources include slight relocation of the combustion turbines, increase in the size of the Auxiliary Boiler from 100 MMBtu/hr to 110 MMBtu/hr including increasing the stack height (from 30 feet to 60 feet), decrease in the stack heights (from 30 feet to 16 feet) of the emergency diesel generator and fire water pump engine, and relocation of the ammonia storage tank.

An increase in the size of the Auxiliary Boiler, and associated increase in emissions, in combination with the decreased stack heights for the emergency diesel generator and fire water pump engine could result in higher air quality impacts than previously demonstrated by the Applicant. The Applicant's air quality impact analysis (AQIA) showed that one-hour nitrogen dioxide (NO_2) impacts were only 4.6 µg/m^3 (98.6% of the standard) under the State one-hour NO_2 standard. Therefore, potential changes in project emissions and stack parameters have the potential to result in a violation of the State one-hour NO_2 standard.

Changes in the site layout could also impact both the construction and operational impacts that were identified in the Applicant's AQIA. An increase in the number of acres for the power plant site will likely result in increase construction related impacts over the AQIA modeling results. Changes in equipment could also have a minor impact on modeled operational air quality impacts.

DATA REQUEST

114. Please provide a revised AQIA (including the modeling CD) for construction and operational air quality modeling that reflect the most recent project specifications and emissions.

Technical Area: Alternatives
Author: Hedy Koczwara

BACKGROUND

In Section 4.0 Project Alternatives, page 4-3 of the Application for Certification (AFC), the Applicant identified two potential site alternatives. However, each site was considered to have one or more fundamental flaw(s) that removed the site from consideration; one site was rejected because the available acreage was too small to accommodate the solar component of the project and the other site was rejected because of complications with acquiring ownership as it was made up of multiple, privately-owned parcels.

In order to define an alternative site that would be potentially viable and that would reduce potential impacts of the proposed PHPP site, staff looked for land parcels within the City of Palmdale that would have sufficient acreage to satisfy the City of Palmdale's site selection criteria. A potential site was identified along East Avenue P and 110th Street East. However, in the Palmdale Hybrid Power Project Supplemental Responses to CEC Data Requests Set 1 [Docket 08-AFC-9, February 13, 2009], the Applicant identified a number of environmental and technical constraints to an Alternative site at 110th East St. between E. Avenue O and E. Avenue P.

In the Supplemental Responses to CEC Data Requests Set 1 [Docket 08-AFC-9, March 2, 2009], the City of Palmdale further states that the proposed transmission route would met the City's goal of supporting future residential and commercial development in the eastern corridor of Palmdale.

DATA REQUEST

115. a. An alternative site located east or south of U.S. Air Force Plant 42 would require a transmission interconnection that would satisfy the City of Palmdale's goal of supporting future residential and commercial development in the eastern corridor of Palmdale. Therefore, staff needs to know whether there are there other alternative site(s) located east or south of Plant 42 that would reduce the potential impacts of building the power plant and associated linear facilities at the proposed site.

    b. Please address whether any alternative site(s) are identified in a. above would be preferred to the suggested site at 110th East St. between E. Avenue O and E. Avenue P.

BACKGROUND

As requested in CEC Data Request Set 1 (dated December 10, 2008) Land Use #47(e), knowledge of transmission line ownership and funding will help determine what existing corridors may be pursued for alternative routing and what transmission technologies fall within a reasonable range of alternatives.

DATA REQUEST

116. Please explain the parties involved, permitting, planning/engineering, construction and operation process regarding the transfer of ownership to SCE for Segments 1 & 2 of the 230 kV transmission line.

117. State when the transfer of ownership will occur.

118. Address whether the California Public Utilities Commission (CPUC) would become involved in the transmission line siting and permitting process, and if so, the timing of the CPUC's process.

119. Assuming that the line will eventually be operated by SCE, how will the cost of construction of the transmission line be funded?

BACKGROUND

In Section 4.0 Project Alternatives, page 4-4, Section 4.2.2.3, Transmission Line Route Alternatives of the AFC, three westerly alternative routes are considered. The most direct route, along Sierra Highway, would conflict with Plant 42's flight operations. The Applicant states that it had discussed the possibility of undergrounding the lines in the vicinity of the runway with SCE, but SCE would not accept ownership of underground high-voltage lines.

In the Supplemental Responses to CEC Data Requests Set 1 [Docket 08-AFC-9, March 2, 2009], the City of Palmdale further states that Sierra Highway has a "very congested utility sub-grade, which would complicate transmission line construction along this route."

Two investor-owned utilities within California, Pacific Gas & Electric Company and San Diego Gas & Electric Company, have voluntarily installed underground 230 kV transmission lines in their transmission systems.

DATA REQUEST

120. Given that undergrounding a 230 kV transmission line is a feasible technology, please provide evidence that the owner/operator of the transmission line, presumably SCE, would not accept an underground transmission line into its transmission system, including the rationale for this decision.

121. Please provide a list of the specific existing underground utilities located in Sierra Highway, including the type of utility, its owner, and the diameter of any pipeline(s), as well as any other identified constraints associated with undergrounding a transmission line in or alongside Sierra Highway.

122. What is the width of the right-of-way of Sierra Highway?

123. Given the potential utility constraints, are there any other roadways parallel to Sierra Highway that you would recommend for underground installation of the 230 kV transmission line?

BACKGROUND

In Section 4.0 Project Alternatives, page 4-5 of the AFC, the Applicant discusses an alternative route along 10th Street West that would satisfy aviation concerns and help

consolidate existing transmission infrastructure. The Applicant states that construction of a new transmission line along 10th Street West would disrupt one of the busiest sectors in the City of Palmdale. The Applicant states that the existing infrastructure could not be used because there were ownership issues.

DATA REQUEST

124. Please provide the width of the existing SCE right-of-way, and the number of and voltage(s) of the existing lines along 10th Street West.

BACKGROUND

In Section 4.0 Project Alternatives, page 4-5 of the AFC, the Applicant states that "from the standpoint of best serving the needs of the City, region, and State, it is necessary that capacity from the PHPP be delivered to the Vincent 500/230 kV Substation." However, the AFC does not explain why this is so. The SCE Oasis 69 kV Substation is approximately one mile east of the PHPP site and other larger substations, such as the Antelope Substation in the City of Lancaster, are located in the regional area. In the interest of evaluating a reasonable range of site alternatives and reducing the length of linear interconnections, other substation interconnections should be considered.

DATA REQUEST

125. Are there any other substations besides Vincent 500/230 kV Substation that could be used for interconnection with the PHPP project?

126. If so, please detail what additional transmission line upgrades would be necessary and whether the upgraded line(s) would still need to connect to Vincent Substation. If Vincent Substation is the only feasible interconnection, please provide evidence supporting this statement.

Technical Area: Biological Resources
Authors: Joy Nishida and Misa Milliron

BACKGROUND

Four infiltration basins would be built on the proposed project site. Man-made bodies of water in an arid environment attract wildlife, thus becoming an “attractive nuisance” and possibly posing a threat to wildlife through potential salt accumulation in the water over time and increased collision hazard related to the nearby airport. Man-made basins or ponds attract not only shorebirds and water fowl, but also ravens, which prey upon the state and federally listed desert tortoise. California Department of Fish and Game (CDFG) recommends the interior slope of man-made ponds have a slope of 3:1 or steeper to discourage shorebird use. Netting or covers can also be used to discourage bird use.

DATA REQUEST

127. Please provide details on how and when the infiltration basins will be designed, built, and operated to discourage wildlife use.

BACKGROUND

Some of the state and/or federally listed species (listed in Table 5.3-5) are presumed to inhabit the area, and potentially suitable habitat exists in the project area. There are several permitting agencies and permit types related to biological resources. The applicant must comply with all laws protecting biological resources, and the completion of required permits impacts the project schedule. Consultation with the U.S. Fish and Wildlife Service (USFWS) and CDFG is required under the law and the Energy’s Commission’s siting regulations. In addition, at the February 4, 2009 data response workshop, staff discussed with the applicant that discussions with CDFG regarding compensation for mitigating impacts to biological resources and habitat must be underway in order for staff to complete its analysis.

DATA REQUESTS

128. Please provide an update of progress and a detailed schedule for the USFWS Section 7 or 10 consultation and process (include a discussion of federal nexus, if any).

129. Please provide records of conversation, electronic mails, or other correspondence with CDFG regarding their expected compensation ratio and other mitigation measures for impacts to special-status species and their habitat.

BACKGROUND

Staff understands that the applicant plans to mitigate for the loss of Joshua trees and other desert plants by complying with the City of Palmdale’s vegetation ordinance, which requires transplantation where feasible. However, in comments on Appendix H of the AFC, the applicant’s biological technical study, CDFG stated that compliance with the City’s Joshua tree ordinance would be insufficient to mitigate for loss of Joshua tree woodland, which provides wildlife habitat.

DATA REQUESTS

130. Please provide the proposed landscape plan showing the placement of transplanted Joshua trees, California juniper, beavertail cactus, and golden cholla for the proposed project.

131. Please provide a discussion of the expected mitigation for impacts to Joshua tree woodland habitat (i.e., in addition to the planned transplantation required by the City ordinance).

BACKGROUND

In the data response to staff's previous Data Requests #5 through 7, the applicant reiterated that there would be no impacts to drainages, which are located along the transmission line route. The Energy Commission requires applicants to contact agencies (i.e., U. S. Army Corps of Engineers (USACE), CDFG, and Regional Water Quality Control Board (RWQCB)) even if there may not be impacts to resources under their jurisdictions. The Energy Commission looks to these agencies for their concurrence or disagreement with the applicant's assessment of impacts to biological resources. Staff needs this information to complete its analysis for the proposed project.

DATA REQUEST

132. Please provide evidence of concurrence from USACE, CDFG, and RWQCB that the proposed project will not impact jurisdictional/permitted waters and/or summarize their recommendations regarding potential impacts and any associated permitting and impact avoidance requirements.

BACKGROUND

In the data response to staff's previous Data Request #10, the applicant does not anticipate that a Raven Monitoring and Control Plan (Plan) is necessary but will work with USFWS and CDFG to determine whether such a Plan is necessary. Staff is aware of in-lieu fee collection by USFWS for regional raven monitoring and management; however, CDFG may have additional requirements to address this issue.

DATA REQUEST

133. Please consult with CDFG and provide a record of conversation regarding raven management and their requirements (if any) in addition to the in-lieu fee program of USFWS. Should a Plan be required, please provide the anticipated schedule for the completion of this document.

BACKGROUND

To evaluate the completeness of botanical surveys, staff and CDFG need additional information on the methodology. The California Native Plant Society protocol was cited as the survey methodology, but a detailed description was not included. CDFG has stated that 30-meter transect spacing, as described in Appendix H and correspondence with the applicant's consultant, is inadequate for botanical surveys. Many plants listed in Table 2 of Appendix H are noted as "Absent. Not observed during focused surveys;" however, botanical surveys were not done for the entire project area. In addition, the plant species list includes a manzanita (*Arctostaphylos* sp.), which was not identified to

the species level, and the special-status San Gabriel manzanita (*Arctostaphylos gabrielensis*) was listed in Table 5.3-5 as potentially occurring in the project vicinity.

DATA REQUESTS

134. Please provide the following information on the botanical survey methodology:
    a. Dates of botanical surveys;
    b. Names of personnel conducting botanical surveys;
    c. For each person involved with the botanical surveys, list which specific day(s) they participated in the survey and approximate number of hours spent; and
    d. Whether the botanical surveys were done exclusively looking for plants, or whether the same personnel conducted botanical surveys concurrently with wildlife surveys.

135. Please provide additional information (e.g., a discussion of soil types, suitable habitat, etc.) supporting the conclusions that plants in Table 2 of Appendix H are absent from the project area.

136. Please describe the characteristics used to distinguish the unidentified manzanita from San Gabriel manzanita and conclude that the special-status species was absent from the project area.

Technical Area: Cultural Resources
Author: Beverly E. Bastian

BACKGROUND

The City of Palmdale's (COP's) cultural resources consultant states in the Cultural Resources section of the AFC (WSA July, 2008) that the Mojave Desert, and particularly the Antelope Valley, where the proposed project would be located, "supported a long and occasionally dense human population," despite the perception that prehistoric food resources and surface water were limited there. Known archaeological site types in the Mojave include villages, camps, burials, quarries, rock features, and bedrock mortars (p. 5.4-9).

Archaeological analysis of grave goods indicates that during a period lasting from 1,800 to 900 years ago, the Antelope Valley was distinct from the rest of the Mojave Desert in having differential wealth distribution, suggestive of social complexity expressed through a status system. In the same period, large villages were present in the Antelope Valley. Archaeologists think these distinctions were the result of the Valley inhabitants' achieving greater wealth and the ability to support a larger population through participation in a trade network as "middle men" between coastal and interior groups (p. 5.4-11).

Yet the prehistoric sites identified in and within the vicinity of all the proposed PHPP areas, both previously and currently by the COP's cultural resources consultant, were few in number. This could be the result of prehistoric materials being buried by the ongoing natural deposition of silt, sand, and gravel which has characterized the last nearly 2,000,000 years in this region (AFC, pp. 5.9-9–5.9-10). While it is only in the last 12,000 years that man-made deposits could possibly be buried by this long and continuing geological process, the geological strata called the Younger Alluvium (representing the Holocene Epoch, dating 10,000 years BP to the present) occurs from the surface down to six feet deep in most parts of the proposed PHPP's impact areas (AFC, p. 5.9-11) and could be masking man-made deposits.

The COP's cultural resources consultant acknowledges that buried archaeological sites could be discovered during construction in the various project impact areas (WSA July, 2007, p. iii) and considers this possibility in proposing mitigation measures for project impacts (AFC, pp. 5.4-37–38).

Staff needs a more factual basis on which to assess the potential presence and locations of buried archaeological sites in the proposed project area and to gauge whether the construction and operation of the proposed project could impact them. So staff requests that the applicant provide a geoarchaeological analysis of the project area. By ascertaining the presence or absence of subsurface strata on which prehistoric Native Americans could have left remains of their activities, such an analysis could allow staff to either reduce the amount of archaeological monitoring that staff recommends in the conditions of certification for the project or focus the recommended monitoring more efficiently and cost effectively than would otherwise be possible.

In a Round 1 Data Request, staff asked the applicant to choose one of two ways to conduct the requested geoarchaeological study. The first option, Data Request # 22, was to compile extant geological and archaeological data and provide staff with information regarding the landforms on which PHPP components would be located and a summary of geologists' and archaeologists' understanding of the prehistoric use of the project area. The second option, encompassing Data Request #s 23-25, was to conduct a field investigation.

The applicant objected to Data Request #s 23-25, and staff withdrew them. Although the applicant initially objected to Data Request # 22 as well, after staff clarified the scope of Data Request # 22, and several subsequent discussions, the applicant agreed to respond to the revised version, below. The language is identical to what was docketed on March 3, 2009, except for additional language addressing qualifications that was requested by the applicant, and the use of a URL rather than inclusion of the actual pages from the Lodi Energy Center Data Response (both additions indicated by double-underlining). The Figure 1 referenced in Revised Data Request 22 can be found at the end of the Round 2 Data Request package.

DATA REQUEST

137. This additional clarification is specifically addressed to the geographic scope and level of detail intended in the language underlined below in staff's January 30th version of this Data Request.

Energy Commission Data Request 22, Revised by the Applicant on 1/29/09 and Further Revised by Staff on 1/30/09:

In response to Data Request 22, the Applicant proposes to provide additional information on which to assess the potential presence and locations of buried archaeological sites in the proposed project area for the purpose of gauging whether the construction and operation of the proposed project could impact such resources. The proposed study includes a review of the extant literatures for archaeology, geoarchaeology, and Quaternary science, and an assessment, based on this review, of what is currently known about the incidence of buried archaeological deposits in the portion of Antelope Valley that includes the proposed project area. The review will utilize materials pertinent to the study at the cultural resources records and curation facility at Edwards Air Force Base, and will also include reference to aerial photographs. The study will focus on the landscape contexts for archaeological resources that are characteristically found in the portion of the Antelope Valley that includes, but is not necessarily limited to, the proposed power plant site area as shown in the attached figure and on the landform or landforms traversed by the proposed project laterals, the reclaimed water supply pipeline, the SoCal natural gas pipeline, and the transmission line.

Although the study will focus on the historical geomorphology and archaeology of the proposed project area, the scope of the study will be broader in scale in order to develop an understanding of the regional geomorphic context (including the landforms and drainages) that played a role in the historical geomorphology of

the proposed project area and that has shaped the character of the surface and subsurface archaeological records there.

Applicant will prepare and submit, under confidential cover, an assessment of what is currently known about the landforms on which PHPP components will be located and the stratigraphy of those landforms, a discussion of the known incidence of buried archaeological deposits in this portion of Antelope Valley, a discussion of the volume of previous archaeological investigations in the same portion of the Antelope Valley that include subsurface inventory or subsurface monitoring efforts, and a summary of archaeologists', ethnohistorians', ethnographers', and historians' understanding of the prehistoric and historic utilization of the project area. The fewer archaeological data that are available, the more emphasis will be given to the historical geomorphology of the project area to provide a more substantive context for interpreting the possible presence of buried archaeological deposits. Where the data are available, emphasis will be on the distribution, depths, and kinds of buried archaeological deposits that have been found, and their stratigraphic context.

The study shall be prepared by a professional in geoarchaeology, a person who, at a minimum, meets the U.S. Secretary of the Interior's Professional Qualifications Standards for a professional in archaeology and is able to demonstrate the completion of graduate-level coursework in geoarchaeology, physical geography, geomorphology, or Quaternary science, or has a level of experience that staff determines is equivalent.

Staff's Clarification of Geographic Scope of Data Request 22

Geoarchaeological studies and cultural resources studies (and those of other research-oriented disciplines as well) use a similar two-phase approach to their subjects. They start with establishing a larger, more general context—historical and geologic for geoarchaeological studies, historical and ethnographic for cultural resources—that delimits the studies geographically and presents the framework within which to identify the phenomena of interest, to define research questions, and to interpret and evaluate data. That larger context is usually not elaborate or detailed. It just has to generally frame, in time and space, the subjects that are the focus of the second and more important phase of the study and for which greater detail is appropriate.

Within this general concept of a common approach to research, staff's Data Request 22 seeks information about the project's geoarchaeological setting at two scales: the regional (Phase 1) and the site-specific (Phase 2).

Phase 1 geomorphology is represented in Data Request 22 by the following language in the first paragraph:

"The study will focus on the landscape contexts for archaeological resources that are characteristically found in the portion of the Antelope Valley that includes, but is not necessarily limited to, the proposed power plant site area … and on the landform or landforms traversed by the proposed project laterals, the reclaimed water supply pipeline, the SoCal natural gas pipeline, and the transmission line."

Phase 1 geomorphology is also represented in Data Request 22 by the following language in the second paragraph:
"Although the study will focus on the historical geomorphology and archaeology of the proposed project area, the scope of the study will be broader in scale in order to develop an understanding of the regional geomorphic context (including the landforms and drainages)."

Phase 1 geoarchaeology is represented in Data Request 22 by the following language in the first paragraph, requesting:

"…an assessment, based on this review [of the extant literatures for archaeology, geoarchaeology, and Quaternary science], of what is currently known about the incidence of buried archaeological deposits in the portion of Antelope Valley that includes the proposed project area."

Phase 1 geoarchaeology is also represented in Data Request 22 by the following language in the third paragraph, requesting:

"…a discussion of the volume of previous archaeological investigations in the same portion of the Antelope Valley [the portion of the Antelope Valley that includes, *but is not necessarily limited to*, the proposed power plant site area] that include subsurface inventory or subsurface monitoring efforts…."

Phase 1 geoarchaeology is also represented in Data Request 22 by the following additional language in the third paragraph:

"Where the data are available, emphasis will be on the distribution, depths, and kinds of buried archaeological deposits that have been found, and their stratigraphic context."

Phase 1 is "the big picture," a general description of the landforms in the region of the project site and an account of the geomorphic history of the region. It should provide the broad context for understanding the formation of the landforms on which proposed project components would be located, the ages of these landforms as they may relate to human occupation, and the geomorphic forces, particularly, in the case of the PHPP's proposed location, erosion and deposition of sediments, that have shaped the landforms and affected the three-dimensional distribution of the potential array of prehistoric archaeological deposits in the project areas.

The specific area for which staff is requesting a "big picture" summary is outlined on the attached figure (Energy Commission DR22 Figure 1). It is necessarily large to include the project site's landform and those nearby landforms with which it has a historical geomorphic relationship. So the Phase 1 study area includes:

- the source of and the transporting vectors for the project site's sediments—the San Gabriel Mountains and the canyons in the foothills of the San Gabriel Mountains to the south and southwest;
- the project site's landform—the merged alluvial fans forming a bajada extending to the northwest and southeast; and
- the landform of the proposed project's most extensive component, the transmission line—the slightly sloping plain to the north and northeast

dissected by numerous shallow washes, which further drain the two higher landforms.

PHPP counsel noted that the phrase in the first paragraph ("…on the landform or landforms traversed by the proposed project laterals, the reclaimed water supply pipeline, the SoCal natural gas pipeline, and the transmission line…"), in which staff specified the Phase 1 geographic coverage, appears to be including areas additional to that staff indicated in the original Data Request 22 ("…landforms traversed by the western part of Segment 2 of the proposed transmission line…"). Staff believes the revised January 30th version just specifies more clearly the coverage staff intended, which was determined by landform, not by project component. That is, the western part of Segment 2 of the proposed transmission line cuts across all three landforms about which staff seeks information, so staff used that phrase to indicate the landforms the study should include. Listing, instead, all the project components in the revised version further clarifies that all the landforms need to be included in the Phase 1 discussion.

Because the Phase 1 context need not be detailed, it need not be expensive to compile. To minimize cost, it would be important to retain a geoarchaeologist familiar with efficiently finding information in the literature of the archaeological, geological, and Quaternary science fields, and familiar, ideally, with the Antelope Valley region. For the geological and Quaternary science literature, a review of a few articles or monographs about the historical geomorphology of the southwestern Antelope Valley and of current geological maps and aerial photographs would probably suffice to provide the general information for the context.

For the archaeological literature, the acquisition and digestion of every archaeological survey report for the entire region would not be required for Phase 1. Rather, articles that synthesize raw archaeological data from multiple reports, most especially from excavation reports, should be sought (such as Sutton 1980, cited in the Cultural Resources section of the AFC) to provide the archaeological assessment that staff seeks in Data Request 22: "what is currently known about the incidence of buried archaeological deposits in the portion of Antelope Valley that includes the proposed project area" (first paragraph; similar language in the third paragraph). Staff also wants, as a measure of the reliability of the data on buried prehistoric archaeological deposits in the southern Antelope Valley, to have a perspective on how much subsurface archaeology has been done in the region, hence the request, in the third paragraph, for information on "…the volume of previous archaeological investigations in the same portion of the Antelope Valley…."

Phase 2 geomorphology is represented in Data Request 22 by the following language in the third paragraph, requesting:

"…an assessment of what is currently known about the landforms on which PHPP components will be located and the stratigraphy of those landforms…."

Phase 2 geomorphology is also represented in Data Request 22 by the following language in the third paragraph:

"The fewer archaeological data that are available, the more emphasis will be given to the historical geomorphology of the project area."

Phase 2 geoarchaeology is represented in Data Request 22 by the following language in the third paragraph, requesting:

"…a summary of archaeologists', ethnohistorians', ethnographers', and historians' understanding of the prehistoric and historic utilization of the project area…."

Phase 2 would require an analysis of greater detail, with the focus on the project's construction areas, particularly the main plant site. Staff seeks site-specific information on what subsurface sedimentary layers of what ages are present in PHPP construction areas. Such data are best obtained through a field study entailing actual excavation, but, in the absence of any previous study that produced subsurface soil data pertinent to PHPP construction areas, extrapolation of the sedimentary layers likely to be found in the project's construction areas, based on Phase 1 information on the landforms, their age, and their developmental processes, can provide indications of the potential for buried archaeological resources. Phase 1 information can also address the age of the relevant landforms, when site-specific field data are not available (landforms older than 14,000 years will be considered, for our purpose here, too old for humans in this hemisphere to have used or lived on them).

Staff expects that the requested Phase 2 summaries and assessments will focus on the geomorphology of the landforms where the PHPP construction areas would be located because the prehistoric archaeological data, presented in the AFC, apparently represent only surface deposits, which are infrequent and do not represent much variation in site types. Because those more direct data pertinent to the types and ages of subsurface archaeological deposits that are likely are not available, staff also requested that the PHPP's geoarchaeologist summarize the perspectives of archaeologists, ethnohistorians, ethnographers, and historians on the past uses of the project vicinity, since these can provide indirect but useful evidence for the types and ages of subsurface archaeological deposits possible in the project's construction areas.

Clarification of Level of Detail

The expected level of detail is represented in Data Request 22 by the following language in the first paragraph, asking for :

"…a review of the extant literatures for archaeology, geoarchaeology, and Quaternary science…."

The expected level of detail is also represented in Data Request 22 by the following language in the first paragraph, advising the PHPP geoarchaeologist to:

"…utilize materials pertinent to the study at the cultural resources records and curation facility at Edwards Air Force Base, and will also include reference to aerial photographs."

Staff specified a literature review for archaeology, geoarchaeology, and Quaternary science for the PHPP region because staff recognizes that the information staff seeks is both of an interdisciplinary nature, and may have limited availability, so the more kinds of sources reviewed, the more likely the desired information can be found. Staff directed the applicant's geoarchaeologist to the cultural resources records and curation facility at

Edwards Air Force Base because staff believes that, since it is dedicated specifically to the region's cultural resources, that repository may have collected particularly pertinent archaeological reports and other data. Consequently, seeking information and consulting with the staff there may be more useful than going back to the California Historical Resources Information System (CHRIS) center at California State University, Fullerton.

Finally, staff does not expect the PHPP's geoarchaeologist to exhaust all possible sources. Staff expects just a good faith effort to provide the requested information. If some of the requested information is not available, then the geoarchaeologist should just document the effort to obtain it and provide such information as could be obtained.

Examples of Geoarchaeological Studies Similar to What Staff Seeks in Data Request 22:

Ivanpah SEGS project, San Bernardino County, see pp. 19–35 in the following document on the Energy Commission's website:
http://www.energy.ca.gov/sitingcases/ivanpah/documents/applicant/DR_1b/07-AFC-5_ISEGS_Data_Response_Set_1B_LR.pdf

Beacon Solar Energy Project, Kern County, see pp. 70-79 in the following document on the Energy Commission's website:
http://www.energy.ca.gov/sitingcases/beacon/documents/applicant/2008-08-25_Supplemental_Response_to_CEC_Data_Request_TN-47643.pdf

Lodi Energy Center project, San Joaquin County, see pp. 10-16 in the following document on the Energy Commission's website:
http://www.energy.ca.gov/sitingcases/lodi/documents/applicant/2009-02-19_DATA_RESPONSE__SET_1B_13+37_TN-50204.PDF

Technical Area: Land Use
Author: Negar Vahidi

BACKGROUND

On page PD-2, the applicant states that the proposed gas metering station has been *"moved to a location outside the facility fence to allow for easier access but still with security of a dedicated entrance…the station was moved to a location that will be more convenient for future development on the remaining 300 acres to the west on property also owned by the City."*

DATA REQUEST

138. Please provide information on the new gas metering station location. Specifically, although the station is proposed to be located outside of the PHPP fenced area, would it be located within the PHPP parcel.

139. In addition, address whether the general plan land use and zoning designations for the metering station would be the same as the PHPP site.

140. Please provide information regarding the type of land uses and development timeline, if any, the city anticipates for the 300 acres to the west of the PHPP.

141. Please address whether the gas metering station for the PHPP would be shared by the land uses that are anticipated for development on the 300 acres adjacent to the PHPP.

BACKGROUND

Page PD-4 states that the routes for the sanitary wastewater pipeline and potable water line have changed, and provides text narrative describing the location of these linear routes with Figure PD-1 illustrating these routes.

DATA REQUEST

142. Please update the applicable AFC Land Use figures (e.g., jurisdictional boundaries, Important Farmlands, general plan land use designations, zoning designations, etc.) showing the revised linear route alignments. This information is needed for staff to accurately describe the land use setting through which these lines traverse.

Technical Area: Traffic
Author: Robert Fiore

BACKGROUND

In terms of aviation safety, and given the proximity of the Palmdale airport runway, storm water retention ponds attracting birds could be an adverse impact. In particular, flocks of birds present the greatest danger to aircraft taking off or landing. A Federal Aviation Administration Advisory Circular (No: 150/5200-33B) recommends a distance of five statute miles from an approach, departure and circling airspace and any hazardous wildlife attractant.

DATA REQUEST

143. Please provide information about mitigation measures that could be implemented to discourage congregations of birds at the storm water retention ponds.

Technical Area: Transmission System Engineering
Author: 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 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 System Impact and Facilities 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 System Impact Study (SIS) or Facilities Study Report (FSR), staff is not able to fulfill the CEQA requirement to identify the indirect effects of the proposed project.

DATA REQUEST

144. The existing Southern California Edison (SCE) 230 kV transmission lines from the Vincent Substation to the Pearblossom Substation provides power to the California Department of Water Resources (CDWR) Pearblossom water pumping plant. The applicant proposes to reconductor and relocate this 230 kV transmission line.

    - Provide evidence showing that SCE has been informed and has agreed to the proposed changes to the Pearblossom-Vincent 230 kV line and any possible interruption to the normal operation of the existing 230 kV circuit.
    - Provide conductor type, size, and length of the existing 230 kV circuit.
    - Provide conductor type, size, and length of reconductored lines.
    - Provide a general environmental analysis and any recommended mitigation measures sufficient to meet CEQA requirements for indirect project impacts.

145. The existing 230 kV transmission lines from Vincent to Pearblossom would cross under four 500 kV bundled circuits. Two of these 500 kV circuits are owned by SCE and two are owned by Los Angeles Department of Water and Power (LADWP). As described in the AFC and supplementary material, the Vincent - Pearblossom 230 kV circuit together with the proposed new PHPP 230 kV transmission circuit would be placed on the new PHPP double circuit poles. Therefore, the applicant should inform the proposed modification to SCE and LADWP of the proposed change and should comply with CPUC G.O. 95 overhead electric line construction standards.

a. Provide the existing and proposed 230 kV pole configurations, pole heights, pole types, and transmission line clearance for the undercrossing section.

b. Provide evidence showing both SCE and LADWP are informed of the proposed changes and any possible interruption to the normal operation of their 500 kV circuits.

146. During reconductoring and relocation of the Vincent to Pearblossom 230 kV transmission lines, staff expects the Pearblossom Pumping Plant would have temporary power interruptions. Therefore, the applicant should coordinate with the CDWR for water pumping and maintenance schedules. Provide evidence that the CDWR agrees to any changes to the Vincent - Pearblossom 230 kV line and any service interruptions.

Technical Area: Visual Resources – Visible Plume
Author: William Walters

Staff plans to review the applicant's visual water vapor plume modeling analysis and perform a separate modeling analysis. The modeling file disc provided by the applicant containing the visible plume modeling files was corrupt so staff could not access any of the modeling files. Staff needs a copy of the applicant's plume modeling files.

DATA REQUEST

147. Please provide a CD or DVD copy of the plume modeling input files (including meteorological data files), output files, and as applicable the freeware executable files that were used to complete the applicant's visible plume modeling analysis. This should include all of the SACTI and the AERMOD/VISDET files used for the cooling tower and gas turbine plume analyses, respectively.

BACKGROUND

Staff plans to perform a visible plume modeling analysis for the Gas Turbine/HRSGs. Staff requires additional HRSG operating information to complete this analysis. Staff also requires additional information to review and verify the applicant's gas Turbine/HRSG visible plume modeling analysis noted to be based on the USEPA guideline air dispersion (AERMOD) model and the applicant's consultant (ENSR) developed VIZDET model.

DATA REQUEST

148. a. Please describe how duct firing is planned to be used considering the variability of solar generation. While 2,000 hours of duct firing is specified on page 5.2-48 of the AFC it is unclear when duct firing will be used.

    b. Address whether duct firing would be used to supplement when solar is not a full capacity would be or whether the steam turbine capacity such that duct firing can also be used for peaking power regardless of solar output.

149. Please describe what time of day and time of year that the duct burners would be most likely to operate.

150. Please summarize for the gas turbine/HRSGs the exhaust conditions to complete the table, and additional data as necessary for staff to be able to determine how the gas turbine/HRSG operating conditions will vary with solar generation.

Parameter	**Gas Turbine/HRSG Exhausts (each)**					
Stack Height*	44.20 meters (145 feet)					
Stack Diameter*	5.49 meters (18 feet)					
Stack Separation*	37.35 meters (123 feet)					
Ambient Temperature*	23°F		64° F		98°F	
Ambient Relative Humidity	92%		40 %		17%	
Solar On/Off	Solar On					
Duct Firing	Yes	No	Yes	No	Yes	No

Exhaust Temperature (°F)			174.1			
Exhaust Flow Rate (1000 lbs/hr)			3,549			
Exhaust Moisture Content (vol %)						
Solar On/Off	Solar Off					
Duct Firing	Yes	No	Yes	No	Yes	No
Exhaust Temperature (°F)			176.1	190.6		
Exhaust Flow Rate (1000 lbs/hr)			3,564	3,544		
Exhaust Moisture Content (vol %)						

*Ambient conditions are based on three of the five cases provided in Appendix G of the AFC. Stack height and diameter are from page 5.2-60 of the AFC, and the stack separation is estimated from figure 2-5 of the AFC. Various available exhaust condition data are from the heat and mass balance figures in Section 2 of the AFC.

Additional combinations of temperature and relative humidity, if provided by the applicant, will be used to more accurately represent the gas turbine/HRSG exhaust conditions.

BACKGROUND

Staff plans to perform a plume modeling analysis for the cooling tower. Staff requires additional cooling tower operating information to complete this analysis. Staff must assess several of the design and operating parameters of the Palmdale Hybrid Power Plant Project cooling tower to confirm its visible plume frequency potential.

DATA REQUEST

151. Please describe the daily profile and the seasonal heat rejection profile for the cooling tower.

152. Please summarize for the cooling tower the conditions that affect vapor plume formation including cooling tower heat rejection, exhaust temperature, and exhaust mass flow rate. Please provide values to complete the table, and additional data as necessary for staff to be able to determine how the heat rejection load varies with ambient conditions and also determine at what ambient conditions cooling tower cells may be shut down.

Parameter	**Cooling Tower Exhausts**					
Number of Cells	10 ells (2 by 5)					
Cell Height*	18.90 meters (62 feet)					
Cell Diameter*	8.53 meters (28 feet)					
Tower Housing Length*	91.75 eters (301 feet)					
Tower Housing Width*	33.22 meters (109 feet)					
Ambient Temperature*	23°F		64°F		98°F	
Ambient Relative Humidity	92%		40%		17%	
Solar On/Off	Solar On					
Duct Firing	Yes	No	Yes	No	Yes	No
Number of Cells in Operation						
Heat Rejection (MW/hr)*			537.5			
Exhaust Temperature (°F)						
Exhaust Flow Rate (lb/hr)						
Solar On/Off	Solar Off					
Duct Firing	Yes	No	Yes	No	Yes	No

Number of Cells in Operation						
Heat Rejection (MW/hr)*			512.5	372.9		
Exhaust Temperature (°F)						
Exhaust Flow Rate (lb/hr)						

*Ambient conditions are based on three of the five cases provided in Appendix G of the AFC. Cell height and diameter and tower length and width are from Table 5.13-12 of the AFC. Heat rejection values provided, neglecting water makeup and blowdown, are based on the three heat balance and mass balance figures in Section 2 of the AFC.

Additional combinations of temperature and relative humidity or curves showing heat rejection vs. ambient condition and solar condition, if provided by the applicant, will be used to more accurately represent the cooling tower exhaust conditions. Please include appropriate design safety margins for the heat rejection, exhaust flow rate and exhaust temperature in consideration that the air flow per heat rejection ratio is often used as Condition of Certification confirmation of design limit.

153. Please provide the cooling tower manufacturer and model number information and a fogging frequency curve from the cooling tower vendor, if available, that corresponds to the altitude of the project site.

154. Please confirm that the cooling tower fan motors will not have variable speed/flow controllers.

BACKGROUND

Staff plans to review the applicant's thermal plume modeling analysis and perform a separate modeling analysis for the gas turbine/HRSG exhaust plumes and the cooling tower exhaust plumes. The applicant's analysis as described on pages 5.13-21 and 5.13-22 only considered the gas turbine/HRSGs and did not provide any description of the thermal plume modeling methods and assumptions used or a meaningful numeric summary of the modeling results. Staff needs the applicant's thermal plume modeling files to complete the review of the applicant's thermal plume modeling analysis. Staff will be using the cooling tower data supplied to answer staff's Visual Resources - Visible Plume data requests to model the thermal plume potential for the cooling tower.

DATA REQUEST

155. Please provide a CD or DVD copy of the gas turbine/HRSG thermal plume modeling input files (including meteorological data files), output files, and as applicable any freeware executable files that were used to complete the applicant's gas turbine/HRSG thermal plume modeling analysis.

Technical Area: Waste Management
Author: Suzanne Phinney

BACKGROUND

Pursuant to Data Request #86, on February 13, 2009 the Applicant provided a Phase I Environmental Site Assessment (ESA) that included the 1.0 mile Sanitary Wastewater Pipeline route. The pipeline route that was evaluated extends north on 15th Street East and terminates at the intersection of 15th Street East and East Avenue L. On March 2, 2009, the Applicant submitted supplemental information that shows a new route for the Sanitary Wastewater Pipeline. This route extends east along East Avenue M to approximately 25th Street E. This route is not evaluated in the Phase I ESA submitted in February.

DATA REQUEST

156. Please provide a Phase I ESA for the new Sanitary Sewer Pipeline route.

Palmdale Project Boundary

N

1 in = 1.35 miles
1 inch = 7,103 feet

0 1 2 4 6 8 Miles

California Energy Commission DR22
Figure1

Legend

Phase 1 Geographic Scope

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

APPLICATION FOR CERTIFICATION
For the *PALMDALE HYBRID POWER PROJECT*

Docket No. 08-AFC-9

PROOF OF SERVICE
(Revised 2/27/2009)

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DECLARATION OF SERVICE

I, Hilarie Anderson , declare that on April 1, 2009, I served and filed copies of the attached Data Request Set 2 (#'s 91-156). The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[http://www.energy.ca.gov/sitingcases/palmdale/index.html]. The document has been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

For service to all other parties:

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

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

AND

For filing with the Energy Commission:

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

OR

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

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-9
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

docket@energy.state.ca.us

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

Original Signature in Dockets
Hilarie Anderson