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

May 29, 2009

DOCKET
02-AFC-2C
DATE MAY 29 2009
RECD. MAY 29 2009

Doug Hackley
Black Rock Project Manager
CalEnergy, Imperial Valley
7030 Gentry Road
Calipatria, California 92233

Dear Mr. Hackley,

SALTON SEA GEOTHERMAL POWER PLANT PROJECT AMENDMENT (02-AFC-2C) DATA REQUESTS

Pursuant to Title 20, California Code of Regulations, section 1769, the California Energy Commission staff requests the information specified in the enclosed data requests. The information requested is necessary to more fully understand the modifications proposed in the amendment petition filed on March 13, 2009 by CE Obsidian, LLC, project owner, for the Salton Sea Unit 6 Geothermal Power Plant Project.

Specifically, the requested information will assist Energy Commission staff to determine whether implementation of the proposed modifications will: 1) allow the Salton Sea Unit 6 Geothermal Power Plant to operate in a safe, efficient and reliable manner, 2) comply with applicable laws, ordinances, and regulations, or 3) result in significant environmental impacts.

This set of data requests, numbers 1-64, is being made in the areas of air quality, biological resources, cultural resources, efficiency, land use, project description, socioeconomics, visual resources, waste management, and soil & water resources. Written responses to the enclosed data requests are due to the Energy Commission staff on or before June 29, 2009 or at such later date as may be mutually agreed.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, you must send a written notice to both Commissioner Jeffrey Byron, Presiding Siting Committee Member for the Salton Sea Unit 6 Geothermal Power Plant Amendment Petition, and to me, within 20 days of receipt of this letter.

The notification must contain the reasons for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, section 1716).

If you have any questions, please call me at (916) 651-2935 or E-mail me at mtrask@energy.state.ca.us.

Sincerely,

Mathew Trask

Digitally signed by Mathew Trask
DN: cn=Mathew Trask, o=California Energy Commission, ou=Energy Facility Siting Division, emailemtrask@energy.state.ca.us, c=US
Date: 2009.05.29 13:52:48 -07'00'

Mathew Trask
Amendment Project Manager
Energy Facility Siting Division

Enclosures

Technical Area: Air Quality
Author: William Walters

BACKGROUND: MASS BALANCE – AMMONIA AND HYDROGEN SULFIDE

The estimated ammonia emissions and to a lesser degree the hydrogen sulfide emissions listed in the recent amendment petition for the Salton Sea Unit 6 (SSU6) project have been significantly revised from the licensed project, and from that of a previous SSU6 amendment analyzed by staff in April, 2005. While the project owner provided a water balance, there is no equivalent to understand the non-condensable gas (NCG) flow, including the ammonia and hydrogen sulfide flows. In order to evaluate the emission estimates, staff needs more information to understand how the process has been changed in regards to the total gas flow and the ammonia and hydrogen sulfide flow and emissions.

DATA REQUEST

1. Please provide a figure similar to Figure 2-12a in the amendment petition that provides the mass flow balance for gases entrained in the brine and in the NCGs, including: carbon dioxide, hydrogen sulfide, and ammonia. This should include values to be able to determine the emissions ducted to the cooling tower in the case of a recuperative thermal oxidizer (RTO) breakdown.

BACKGROUND: OTHER OPERATING EMISSION SOURCE MODELING

The applicant's emission estimates for "temporary" operating activities, such as well rework/new well drilling, well flow testing, initial commissioning, are very different than the estimates provided in the previously approved AFC. Staff is concerned that there are issues or there may be deficient information in the revised estimates and that impacts associated with increases in certain emission values may have not been fully evaluated as part of the project amendment petition documentation. Staff needs additional information to assess the impacts from these temporary operating activities.

DATA REQUEST

2. Particulate emissions from production well testing, injection/plant well testing, well flow during commissioning and startup have not been estimated. Please estimate the particulate emissions from these well steam flow events as was done for the initial licensing case and the first project amendment.

3. The well rework/new well drilling emissions were not provided in the amendment petition documentation. Please confirm that the per well and annual emission estimates from well rework/new well drilling have not increased from that estimated and shown in staff's April 2005 Staff Amendment Analysis Table 10.

4. The total emissions estimated for production well testing are three times that estimated in the last amendment petition. Please identify why these emissions are three times higher and provide a modeling analysis of the H_2S and PM10 impacts (please see the request regarding missing particulate emission estimates above) consistent with that performed previously and shown in staff's

April 2005 Staff Amendment Analysis Table 17, for any modeled time periods with increased emission rates.

5. The total emissions estimated for plant startup/shutdown are considerably higher than estimated in the last amendment request. Please identify why these emissions are so much higher than the last estimate and please provide a modeling analysis of the H_2S and PM10 impacts (please see the request regarding missing particulate emission estimates above) consistent with that performed previously and shown in staff's April 2005 Staff Amendment Analysis Table 17, for any modeled time periods with increased emission rates.

6. The injection well testing emissions estimated are much lower than the estimate provided for the last amendment petition. Please confirm these emissions and identify why the emissions are a small fraction of the previous estimate.

7. The Appendix E-3 emission tables introduce an emission source called "Flow Back," which is very briefly discussed in the project description. Please identify if this is a new emission source or was considered as part of another named emission source, such as well flow testing, evaluated as part of the last amendment request evaluation or original licensing evaluation.

BACKGROUND: EMISSION ESTIMATE CALCULATIONS

Staff cannot reproduce some of the emission calculations provided by the applicant in appendix E.3. Staff needs additional information to complete the review of these emission calculations.

DATA REQUEST

8. The warm start annual ton/year emissions in Appendix E-3 Table 2.21 appear to have inadvertently been multiplied by a factor of three, or alternatively the lb/year column above was divided by a factor of three. Please correct this emission column and the total emissions column.

9. Staff believes that the Appendix E-3 Table 2.21 does not provide lb/event emissions as noted in the top of the two tables for most of the columns but rather presents lbs/year, so please correct those columns listed as lb/event to lb/year.

10. Please add the estimated well rework/new well drilling emissions to the emission operating emissions Appendix E-3.

11. The shutdown emissions provided in Appendix E-3 Table 2.21 assumes three shutdown events per year; however, page 5.2-46 indicates four shutdown events per year. Please correct this table to provide emissions for four shutdown events per year.

BACKGROUND: CONDITIONS OF CERTIFICATION – REQUESTED REVISIONS

The applicant has proposed to revise a number of the conditions of certification. However, the applicant used the original license version of the conditions rather than the 2005 amended license version of the conditions, which are the current approved conditions for the project. Additionally, very little description was provided to support many of the requested revisions. For example, the applicant has requested that Conditions of Certification 37 and 38 be deleted; however, these conditions still seem to be at least partially appropriate as Condition 37 is still applicable to the cooling towers and Condition 38 would appear to be applicable for maintaining the reagent(s) used in the newly proposed CHEM-OX system.

Therefore, staff needs the applicant to revise their request based on the currently approved versions of the conditions, and staff requires a clear description of the rationale for these requested revisions.

DATA REQUEST

12. Please provide a revised request for revision of the conditions of certification with the following:
    a. The revised request based on the currently approved version of each condition of certification that is requested to be revised.
    b. Written rationale for each requested revision to the conditions of certification.

BACKGROUND: OFFSET PROPOSAL

The applicant has recommended removal of their PM10 and hydrogen sulfide offset proposals. Staff generally recommends that emissions from the nonattainment pollutants and their precursors be offset. While staff believes that the ozone nonattainment situation in Imperial County is directly attributable to pollutant transport and so staff is not currently recommending offsets for ozone precursors, staff believes that PM10 attainment problems in the District are more attributable to the man-made emissions occurring within Imperial County, so offsets from within the County will provide substantive mitigation. Staff needs additional information from the project owner to justify the removal of the PM10 offset proposal.

Additionally, the hydrogen sulfide offsets were considered necessary due to the potential direct emission impacts and the potential for the project to create new exceedances of the California hydrogen sulfide Ambient Air Quality Standard (CAAQS). Staff needs more detailed information from the project owner on how the proposed revisions to the project will reduce emissions to eliminate the potential for project or cumulative hydrogen sulfide impacts, including those from temporary operations.

DATA REQUEST

13. Given that the proposed revisions to the project would actually increase the direct PM10 emissions by almost 7.5 tons per year, and given staff's recommendation to offset all nonattainment pollutant and their precursors by a minimum 1:1 ratio; please provide clear rationale why the PM10 offset strategy previously proposed is no longer considered necessary.

14. Please identify, considering that the revised project will increase annual H_2S emissions by over 23.4 tons per year, how the proposed revisions to the project will eliminate the potential for project or cumulative hydrogen sulfide CAAQS exceedances including impacts from temporary operations (well flow testing, startup, etc.) that also are shown to have higher hydrogen sulfide emissions from those previously evaluated.

BACKGROUND – CONSTRUCTION EMISSIONS/MODELING

The derivation of the modeling inputs provided in the air dispersion modeling files is not clear and there appears to be errors in some of the values. Staff needs additional information to assess the applicant's construction modeling analysis.

DATA REQUEST

15. The PM10 and PM2.5 tailpipe emissions modeled higher and the fugitive dust emissions are significantly higher than the values provided in Table 1.22 of the construction emissions spreadsheet. Please identify how the much higher emissions were estimated or remodel consistent with the values provided in the spreadsheet.

16. Similar to the PM10 and PM2.5 issue noted above there are other pollutants where the modeled emission rate does not match the emission rate given on Table 1.22 of the construction emissions spreadsheet or do not match the emission rate given in Table 5.2-19 of the amendment. Please provide the correct construction emission rates for all pollutants/time periods/phases of construction and remodel where the modeling input is not the correct value.

17. The NO_2 modeling results exceed the state standard. Please remodel the NOx emissions using NOx Ozone Limiting Method (NOx_OLM) or Plume Volume Molar Ratio Method (PVMRM) or use a similar procedure to determine ozone limited NO_2 construction impacts.

BACKGROUND: OPERATING EMISSIONS – MODELING ASSUMPTIONS

The derivation of the modeling inputs provided in the air dispersion modeling files is not clear and there appear to be errors in the values. Staff needs additional information to assess the applicant's operations modeling analysis.

DATA REQUEST

18. Please confirm the RTO exhaust temperature is 342°K (156°F), and remodel all criteria pollutants and hydrogen sulfide if the exhaust temperature is incorrect.

BACKGROUND: OPERATING EMISSIONS – ODOR IMPACTS

The H_2S modeling is limited to 1-hour impacts and does not include a determination of shorter-term impacts that could occur and create odor impacts. Staff needs additional information regarding the potential of short-term odor impacts.

DATA REQUEST

19. Please determine the potential and extent for odor impacts from the normal operating emission sources of H_2S for shorter time periods than one hour (one minute or more) using an established power law relationship for the lower time period concentration and available published odor threshold data.

20. Please determine the potential and extent for odor impacts from the temporary operating emission sources of H_2S, where those sources are estimated to have higher short-term emission rates than previously estimated modeled for the SSU6 project, for shorter time periods than one hour (one minute or more) using an established power law relationship for the lower time period concentration and available published odor threshold data.

BACKGROUND: CUMULATIVE IMPACTS

The Amendment Petition does not provide a cumulative project evaluation or cumulative modeling analysis. Staff requires that an analysis of potential cumulative sources be performed and if necessary a cumulative modeling analysis be completed by the project owner. The Imperial County Air Pollution Control District should be able to determine if any new stationary sources have been recently built or are proposed to be built. Staff requests that the applicant make this request to confirm that either no cumulative modeling analysis is necessary or that additional cumulative impact assessment may be necessary for this project.

DATA REQUEST

21. Please provide a list of recently built or proposed stationary source projects, including modifications, within a six mile radius of the project site, from the Imperial County Air Pollution Control District for the project area.

22. If there are any new or modified projects with an operating emission increase of PM10/PM2.5 or hydrogen sulfide of more than 5 tons per year then please provide a cumulative modeling analysis that includes such sources and the SSU6.

BACKGROUND: AIR QUALITY PERMIT/DETERMINATION OF COMPLIANCE

A Determination of Compliance (DOC) analysis from the Imperial County Air Pollution Control District (District) will be needed for staff to complete its analysis. Staff will need to coordinate with the applicant and District to keep apprised of any air quality issues determined by the District during their permit review.

DATA REQUEST

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

BACKGROUND – CONSTRUCTION GREENHOUSE GAS EMISSIONS

The Petition for License Amendment does not include an estimate for construction related greenhouse gas (GHG) emissions. Staff needs this estimate to complete the greenhouse gas analysis for the project.

DATA REQUEST

24. Please provide calculations for the project construction greenhouse gas emissions in CO_2-equivalent tons for the entire construction period, and include estimates of total fuel use by type of fuel.

BACKGROUND: OPERATIONS GREENHOUSE GAS EMISSIONS

Staff believes that the greenhouse gas emission calculations provided by the project owner are incomplete. For example the emission calculations do not include sulfur hexafluoride emissions. Staff needs additional information to ensure that the greenhouse gas emission estimate is complete.

DATA REQUEST

25. Please provide an emission estimate for the sulfur hexafluoride assumed to be necessary for use in various electrical equipment at the proposed project.

26. The greenhouse gas emission estimate does not seem to include the annual emissions from the temporary emission sources. Please add methane to Appendix E.3 Table 2.21 and include the temporary emission source GHG emissions, including estimated annual well drilling emissions, in the summary of GHG emissions in Appendix E.3 Table 2.23.

27. Please provide an estimate of worker and delivery vehicle GHG emissions for operations.

Technical Area: Biological Resources
Author: Misa Milliron

BACKGROUND

Appendix D of the Amendment Petition contains letters to the U.S. Army Corps of Engineers (USACE) and the California Department of Fish and Game (CDFG) requesting concurrence on the applicant's proposed permitting approaches for listed species and jurisdictional waters. Page 5.3-4 states "the USACE is expected to request consultation with the USFWS pursuant to Section 7 of the ESA" but does not explain what impacts to jurisdictional waters would constitute a federal nexus. Energy Commission staff could not find any agency responses or summaries of follow-up communications related to these letters or subsequent contact with the U.S. Fish and Wildlife Service (USFWS).

DATA REQUESTS

28. Please provide documents (i.e., response letters or records of conversation including dates and names of agency personnel) that resulted from communication with CDFG, USACE, and USFWS staff regarding the permitting processes for listed species, jurisdictional waters, and other sensitive biological resources.
29. Please determine whether the USACE still has a permitting requirement with the amended project, which maintains the federal nexus for a Section 7 consultation, and describe the reasons and resulting permitting process related to this determination.

BACKGROUND

Page 5.3-7 states that a Streambed Alteration Agreement may be required by CDFG for ephemeral drainage impacts along the transmission line route and that if applicable, the related requirements would be incorporated in the Energy Commission's licensing process. A condition of certification requiring a Streambed Alteration Agreement is included, but the petition does not describe the potential impacts that would trigger the need for this condition of certification. In addition, it appears that the expanded project site could overlap one or more agricultural ditches, but this is unclear because these waterways are indiscernible from roadways in Figure 5.3-2. Potential impacts to the ditches would also require consultation with CDFG to incorporate appropriate mitigation into the Energy Commission amended license.

DATA REQUESTS

30. Please describe the project impacts that would trigger the need for including Streambed Alteration Agreement requirements in the Energy Commission license.

31. Please clarify whether the amended project site would adversely affect any agricultural ditches and provide a detailed description of the potential impacts (i.e., quantify and provide location(s), determine whether impacts are direct or indirect, temporary or permanent).

BACKGROUND

Condition of Certification BIO-7 directs the project owner to acquire an Incidental Take Permit from CDFG, and notes that the condition of certification only applies to transmission lines. However, staff's supplemental testimony following the final staff assessment stated that CDFG will not require the project to secure this permit for the project. It is unclear whether there are any impacts to state-listed species that would necessitate the continued inclusion of this condition of certification.

DATA REQUEST

32. Please clarify and describe the project-related impacts to state-listed species that would require the incorporation of Incidental Take Permit requirements into the Energy Commission license.

BACKGROUND

Condition of Certification BIO-16 addresses noise and vibration management to avoid harassment or harm to wildlife, particularly the state and federally listed Yuma clapper rail. Noise monitoring would be required to determine when remedial actions are needed to ensure noise levels during the Yuma clapper rail mating and nesting season do not impact mating activity. The applicant's proposed modification to Condition of Certification BIO-16 on page 5.3-37 deletes noise measurement locations ML2, ML3, and ML4 and defers the selection of new locations.

DATA REQUEST

33. Please consult USFWS regarding appropriate noise measurement locations for monitoring impacts to Yuma clapper rail, and provide a map showing suggested new locations and a description of any modifications to the original mitigation measures suggested by USFWS.

Technical Area: Cultural Resources
Author: Michael D. McGuirt

BACKGROUND

The Prehistory section of the January 2009 Amended Salton Sea Unit 6 Project Cultural Resources Survey Report, Imperial County, California (Amended Inventory Report) provides a broad overview of the prehistory of the Colorado Desert. While the overview contributes important basic contextual information for the analysis of the proposed project amendment, it does not offer the specificity necessary to develop a useful assessment of the potential for the amended project to have an impact on cultural resources. Staff needs to know what the archaeology is in the vicinity of the amended project area rather than the Colorado Desert as a whole. As a point of guidance, Appendix B of the Energy Commission's Power Plant Site Certification Regulations requires that an application for certification provide a summary of the prehistory of the project area region "with emphasis on the area within no more than a 5-mile radius of the project location" (§ (g)(2)(A)). If the minimum scopes of the records search and literature review areas fail to capture sufficient information to characterize the archaeological site distribution patterns in the vicinity of the project area, additional research at the California Historical Resources Information System's South Coastal Information Center may facilitate gathering such information.

Because the project area is near the southern shore of the Salton Sea in the basin of what was ancient Lake Cahuilla, staff needs to know the known surface and subsurface archaeological site distribution patterns and archaeological site types across the amended project area east and west up the former relict shorelines of Lake Cahuilla, along the Alamo and New Rivers, and across the bottom of the basin near the project area. The purpose of this information would be to provide evidence of our consideration of the character of the local archaeological record and our use of that information in our analysis.

DATA REQUESTS

34. Please provide a summary of the archaeology in the vicinity of the amended project area that includes discussions of the surface and subsurface distributions of archaeological sites from the project area up across the relict shorelines of Lake Cahuilla, along the Alamo and New Rivers, and across the bottom of the Salton Trough toward the south, a discussion of the quantity of archaeological research that has been done in the vicinity of the project area, and a discussion of the basic archaeological site types that are known in that vicinity.

BACKGROUND

Obsidian Butte is approximately 0.4 miles northwest of the northwestern corner of the project site. The formation is a dome of rhyolite that rises roughly 90 feet above the adjacent floor of the Salton Sea basin. Rhyolite flows with large inclusions of rhyolitic obsidian and a weathered, light gray mantle of pumice encircles the central dome. The

butte appears to be the major source of volcanic glass toolstone in the Colorado Desert. It was the primary source of obsidian for Native American groups in the Colorado Desert and along the southern coast of California during approximately the last one thousand years of prehistory.

Obsidian Butte appears to have had and may continue to have value to Native American groups for reasons other than the material value of the obsidian there. Native American consultation during the preparation of the original Energy Commission staff assessment for the project in 2002 and 2003 documents interest in the landform as a place of ongoing cultural value. Obsidian Butte was said at that time to play a prominent role in the creation myths of both the Quechan and Kumeyaay people, and there was informal testimony that suggested an ongoing tradition of cultural practices on the landform. The ongoing cultural value of the butte was reiterated during Native American consultation for the present major amendment.

It would be difficult to argue that Obsidian Butte and its related remnant volcanoes, Rock Hill, Red Island, and Mullet Island, each protruding above the shoreline of the Salton Sea, were not integral components of the ethnogeography of the Native American people of the region into the early historic period. The construction of the amended project among these landforms, which would result in a more expansive visual impact to the local landscape than the originally licensed project, may compromise the integrity of Obsidian Butte as a stand-alone historical resource or the integrity of a traditional cultural landscape of which Obsidian Butte is but one element. The question for our consideration is whether the proposed construction would substantively diminish the integrity of the setting, feeling, and association of Obsidian Butte or a broader remnant volcano landscape as traditional cultural places for which Native American groups may be able to demonstrate historic continuity of use.

DATA REQUESTS

35. Please provide an analysis of the ethnogeography of the vicinity of the amended project area that includes a description of the landscape, a summary of the known ethnographic uses of Obsidian Butte and nearby remnant volcanoes, a discussion of the potential continuity of the Native American use of these landforms from late prehistory through the present and the character of any such use, and a discussion of potential sources of information to more firmly establish the use history of the landforms.

BACKGROUND

Construction of the amended project will occur on the alluvial floor of the Salton Trough adjacent to the present southern shoreline of the Salton Sea between the Alamo and New Rivers. Project construction is presently proposed to include:

- excavation of a number of detention basins,
- excavation of trenches for fire protection, sewage, and water supply pipelines,

- drilling of production and injection wells,
- excavation of mud sumps to support well drilling,
- excavation of foundations for above-ground production well and injection well pipelines,
- excavation of a new, 34-acre borrow site immediately southeast of the project area and the further excavation of an existing borrow site approximately two miles northeast of the project area (Leathers geothermal plant borrow site), and,
- stripping of the topsoil on the project site to backfill the borrow sites.

As ground disturbance during the construction of the project would exceed three feet in depth and in accordance with more recent Energy Commission staff standards for cultural resources impact analyses, a fact-based consideration of the potential presence of buried archaeological deposits in the project area is now prudent. If the depositional environment across the project site is one of net aggradation or ongoing thickening of surface sediments, archaeological deposits related to the use of former near-shoreline surfaces may lie beneath the present surface of the project site. Staff needs additional information to evaluate the potential for encountering buried archaeological deposits during the construction, operation, and maintenance of the project.

DATA REQUEST

36. Please provide a discussion of the historical geomorphology of the project site to better evidence a consideration of the potential there for buried archaeological deposits. The discussion should describe the development of the landforms on which the project area is proposed, with a focus on the character of the depositional regime of each landform since the Late Pleistocene era. The basis for the discussion should be data on the geomorphology, sedimentology, pedology, hydrology, and stratigraphy of the project area or the near vicinity. The source of these data should be the available Quaternary science or geoarchaeological literature. The presentation of the discussion should also include maps that overlay the above data on the project area.

37. In the absence of extant Quaternary science or geoarchaeological literature pertinent to the reconstruction of the historical geomorphology of the project area, staff requests that the applicant please conduct a primary geoarchaeological field study of the project area to facilitate the assessment of the likelihood that archaeological deposits are buried beneath the project area surface, where the construction and operation of the proposed project will involve disturbance at depth (greater than one meter below the present ground surface). The primary study should, at a minimum, include for the following elements:

    a. A map of the present landforms in the project area at a scale not less than 1:24,000. The map may be the result of any combination of satellite or aerial imagery that has been subject to field verification, or the result of a field mapping effort.

b. A sampling strategy to document the stratigraphy of the portions of the landforms in the project area where the construction and operation of the proposed project will involve disturbance at depth.

c. The collection of the data requisite to determinations of the physical character, the ages, and the depositional rates of the various sedimentary deposits and paleosols that may be beneath the surface of each sampled landform, to the proposed maximum depth of ground disturbance. Data collection at each sampling locale should include a measured profile drawing and a profile photograph with a metric scale, and the screening of a small (three, 5 gal. buckets) sample of sediment from the major sedimentary deposits in each profile through 1/4 inch hardware cloth. Data collection should also include the collection and assaying of enough soil humate samples to reliably radiocarbon date a master stratigraphic column for each sampled landform.

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

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

BACKGROUND

The Amended Inventory Report indicates that the construction of the amended project would avoid impacts to the three laterals of the Vail Canal that traverse the amended project area. The Project Description section of the amendment petition, however, states that the amended project would connect to Vail Lateral 4A at Gate 460. Staff needs to know the character of the connection to assess whether the connection may constitute a significant impact to a potential historical resource.

DATA REQUESTS

38. Please provide a thorough description of the character of the connection of the project to Vail Lateral 4A.

Technical Area: Efficiency
Author: Shahab Khoshmashrab

BACKGROUND

In order to evaluate the project's power cycle efficiency, staff needs the heat and mass balance diagrams for each mode of operation. Section 2.5.2 of the amendment states that the heat balance diagram will be provided on a confidential basis to staff upon request.

DATA REQUESTS

39. Please provide to staff the heat and mass balance diagrams for design conditions for each mode of operation (cold startup, warm startup, and base load). These diagrams should include the heat rate figure (in lower heating value) for each mode of operation.

Technical Area: Land Use
Author: Robert Fiore

BACKGROUND

Section 5.7.4.1, Page 5.7-15 (Well Pads, Pipelines and Borrow Pits) states "...construction impacts will be temporary as the borrow site will be returned to its preexisting condition." If soil is to be removed for fill in other locations, then the borrow pit site could present a different condition than what currently exists, possibly creating an impact.

DATA REQUESTS

40. Please provide information on how the borrow pit will be returned to preexisting condition.

BACKGROUND

For land planning purposes it is important to understand easements and encumbrances on properties. Encumbrances such as assessment districts or service provider districts and easements help staff understand limitations to use of property.

DATA REQUESTS

41. Please provide preliminary title reports and lease agreements for the project site and well pad sites.

BACKGROUND

The original Conditions of Compliance (Land-5) states that the applicant is to ensure compliance with setbacks, height limits, etc. by submitting a site plan to the County.

DATA REQUESTS

42. Because the site will be redesigned, please provide a site plan to Commission staff showing legal assessor parcel boundaries and setbacks, height limits, parking, etc.

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

BACKGROUND: RTO OPERATING DATA

The exhaust data for the Recuperative Thermal Oxidizer (RTO) in the amendment petition does not include the amount of water vapor in the exhaust. While this is not a large exhaust stream, it is shown in the modeling files to have a lower than expected exhaust temperature (156°F), while the project description notes it that it should be much higher (700°F). So, staff needs to be able to characterize whether the RTO exhaust could form visible water vapor plumes. Staff needs additional RTO exhaust data from the project owner to determine the visible plume potential.

DATA REQUEST

43. Please provide the following exhaust parameter data for the RTO exhausts:
    a. The exhaust temperature. Please note if the exhaust temperature is at or near 700°F, then no response is needed for items b. and c. below.
    b. The exhaust flow rate (lbs/hour).
    c. The exhaust moisture content (percent by weight).

BACKGROUND: COOLING TOWER OPERATING DATA

Staff plans to perform a plume modeling analysis of the cooling towers. Staff requires additional cooling tower operating information to complete this analysis.

DATA REQUEST

44. Please summarize the cooling tower exhaust 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 below, and provide additional data as necessary for staff to be able to determine how the heat rejection load varies with ambient conditions. Also, please correct any of the cooling tower dimensions as necessary.

Parameter	Cooling Tower Exhausts		
Number of Cells	5 cells (each for three towers)		
Cell Height*	19.812 m (65 ft)		
Cell Diameter*	9.95 m (32.6 ft)		
Tower Housing Length*	85.95 meters (282 feet)		
Tower Housing Width*	16.46 meters (54 feet)		
Ambient Temperature*	40 °F	60 °F	90 °F
Ambient Relative Humidity	80%	60%	20%
Number of Cells in Operation			
Heat Rejection (MW/hr)			
Exhaust Temperature (°F)			
Exhaust Flow Rate (lb/hr)			

*Ambient conditions were selected to represent a normal range; the applicant can select a different range if necessary. Stack height and diameter are from the AQ modeling files, and the tower length and width are from the visual resources section of the amendment petition.

Additional combinations of temperature and relative humidity, if provided by the applicant, will be used to more accurately represent the cooling tower exhaust conditions.

Please note that if the cooling tower design, in terms of the amount of air flow per amount of heat rejection (kg/s air flow/MWh heat rejection), has not changed from the last evaluated design then the only information needed from the table is the MW/hr of heat rejection for each tower at each ambient condition and information on how many cells are in operation.

45. Please provide the cooling tower manufacturer and model number information and a fogging frequency curve from the cooling tower vendor, if available.

    Please confirm that the cooling tower fan motors will not have dual speed or variable speed/flow controllers. If the cooling tower will have a dual speed or variable speed option, then the exhaust flow rate data given for the cooling tower to complete the exhaust condition table data request should both reflect this assumption and note the specific fan speed(s) assumed.

BACKGROUND: REVISIONS TO EMISSION SOURCES

Staff believes that the only continuous exhausts from the amended project design are the cooling towers and the RTOs. Staff needs to confirm this to complete a revised visible plume analysis.

DATA REQUEST

46. Please confirm that the only continuous exhausts/emission sources at the facility are the RTOs and the cooling towers

Technical Area: Socioeconomics
Author: Joseph Diamond Ph. D.

BACKGROUND

The year for the IMPLAN model economic impacts (secondary impacts i.e., indirect and induced impacts) caused by the construction and operation of the project was provided as 2008. However, the time value of money should be reflected for all economic estimates. Staff needs to know the year that corresponds to all dollar estimates.

DATA REQUESTS

47. Please indicate the year for all economic estimates (e.g., construction costs, construction and operation payroll, property taxes, and school impact fees etc.).

BACKGROUND

Economic benefits, including capital costs (plant and equipment) are an important part of socioeconomic analysis.

DATA REQUESTS

48. Please provide an estimate of the Salton Sea Unit 6 Project Amendment capital costs.

BACKGROUND

Economic benefits, including property taxes, are an important part of socioeconomic analysis.

DATA REQUESTS

49. Please show all the numeric calculations for the property taxes for the Salton Sea Unit 6 Project Amendment given a tax rate of 1.71500 for Imperial County which would yield approximately $8.5 million to $9 million annually.
50. Given the planned operational life for the Salton Sea 6 Project Amendment was estimated at 30 years in the Application For Certification (AFC), why was the property tax estimated for only 22 years from 2013 to 2035?

BACKGROUND

Economic benefits, including sales taxes, are an important part of socioeconomic analysis.

DATA REQUESTS

51. Construction tax revenues were reported as $10.2 million in the AFC. Was this for sales taxes or does it include other tax revenue? (If appropriate, please

specify the types of tax revenues and break out the amounts by totals and percentages.)

52. For construction and operations, please provide an estimate of the distribution of tax revenues among different governmental units e.g., state, county, city etc.

BACKGROUND

The non-local project construction workforce may commute/locate to the local area (study area communities of Imperial County, El Centro, Brawley, Calipatria, Westmoreland, and Niland etc.) during construction of the Salton Sea Unit 6 Project Amendment. Knowledge of RV and mobile home sites is an important part of Staff's socioeconomic analysis in order to assess potential socioeconomic impacts.

DATA REQUESTS

53. Please provide the quantity and vacancy rates for the study area communities' RV and mobile home sites?

Technical Area: Project Description
Author: Mathew Trask

BACKGROUND

The applicant's petition to amend states in both the Executive Summary and in the Project Description (Section 2.0, Page 2-4):

> "The Project will initially be owned by CE Obsidian and operated by CalEnergy Operating Corporation, an affiliate of CEOE, except for the transmission lines. The transmission lines will be constructed, owned, maintained, and operated by IID. It is contemplated that there will ultimately (pre- or post-construction) be three different owners of the three power plants and their associated production and injection wells. Each of those Project owners will likely have their own, separate lenders who will insist that permit compliance conditions be limited to the Project it has lent to. As such, Conditions of Certification should be tailored to provide clear rights and obligations for the three plants with certain overall conditions of compliance remaining the obligation of CE Obsidian."

Staff needs more details on the ownership and financing of the three plants in order to accommodate the request for separate treatment of the Conditions of Certification applied to each plant.

DATA REQUEST

54. In the event that the ownership of the Salton Sea Unit 6 project changes, whether during or after this amendment process, please provide the information requested in Title 20, Section 1769(b) of the California Code of Regulations (CCR). This would include, but not be limited to:
    a. a discussion of any significant changes in the operational relationship between the owner and operator;
    b. a statement identifying the party responsible for compliance with the commission's conditions of certification; and
    c. a statement verified by the new owner or operator in the same manner as provided in Section 1707 of the CCR that the new owner or operator understands the conditions of certification and agrees to comply with those conditions.

Technical Area: Soil and Water Resources
Author: Cheryl Closson

WATER SUPPLY AND USE REQUIREMENTS

BACKGROUND

The proposed amendment to the license for the Salton Sea Unit 6 Geothermal Power Plant estimated that the facility's conservative case fresh water usage would be 953 acre-feet per year (afy). The project would utilize surface water supplied by the Imperial Irrigation District (IID) under an existing agreement allowing a total maximum water delivery of 1,000 acre-feet during any calendar year. However, section 4.3 of the agreement provides that, in the event of a government directive reducing the volume of Colorado River water available to IID, IID may reduce the maximum water amount available to the project. While the project's actual water usage is anticipated to be much less than 953 afy, given the existing drought conditions in the state, staff needs additional information on what actions the project would take in the event that water deliveries to the project are reduced below the projected conservative water usage of 953 afy.

DATA REQUEST

55. a. Please identify what steps the project would take in the event that water deliveries from IID are reduced below project maximum water use levels.

    b. Please provide a timeline for the steps discussed in #55a. above, regarding a back-up water supply, in the event of an IID curtailment.

    c. Please discuss how the possibility of curtailment of IID water would be addressed in a utility power purchase agreement.

BACKGROUND

The amended project would include a minimum water supply storage capacity equivalent to six days of facility operation in order to accommodate potential IID canal water outages. The storage would be provided by an onsite 1.1 million gallon raw water pond. The pond's evaporative water loss is estimated to be up to 30 afy. To mitigate the loss, the original project was conditioned in Condition of Certification Soil & Water-6 to pay IID an increased conservation rate annually for the 30 afy lost to evaporation. In addition, IID surface water is identified for use in cement slab washdown and other non-potable water uses in the control building and elsewhere in the facilities. Staff notes that the project has already incorporated significant water conservation measures in several process design elements (such as use of reverse osmosis reject in cooling tower makeup water, etc.). However, given the existing drought conditions in the state and the potential increase in average annual water use by the project, staff requests

additional information on alternative water storage options and additional water conservation activities that the project itself could implement to further prevent the waste of high quality surface water.

56. Please provide additional detailed information on alternative onsite water storage options for raw water that would help prevent onsite loss of high quality water due to evaporation.

57. Please provide detailed information on additional water conservation measures that could be undertaken at the project site to prevent waste of high quality surface water. Please include options for cement slab washdown and other facility water uses that could help conserve surface water supplies and reduce water use at the facilities.

WASTEWATER DISCHARGE PONDS

BACK GROUND

While the geothermal production wells and associated mud sumps are expressly excluded from the Energy Commission licensing process (Public Resources Code section 25120), the plant wastewater injection wells, associated mud sumps and aerated brine ponds would not be excluded. The Colorado River Basin Regional Water Quality Control Board (CRBRWQCB) would normally establish standards and Waste Discharge Requirements (non-federal) for operation of both the production and injection well mud sumps and brine ponds. However, Public Resources Code section 25500 vests the Energy Commission with sole jurisdiction for all state and local permits associated with construction and operation of the proposed power plant. Consequently, the Energy Commission, in consultation and coordination with the CRBRWQCB, will issue in-lieu discharge requirements for the plant injection well mud sumps and facility aerated brine ponds.

In addition, page 5.17-24 of the amendment petition states that monitoring wells will be provided adjacent to the brine ponds to comply with CRBRWQCB groundwater protection requirements. Any permits for groundwater monitoring wells necessary for operation of the mud sumps and brine ponds that would normally be issued by Imperial County would also need to be addressed as part of the Energy Commission amendment process. The Energy Commission will consult and coordinate with the County to address local requirements for construction, operation, and abandonment of groundwater monitoring wells.

DATA REQUEST

58. Please provide all of the waste discharge information and documentation, normally required by the CRBRWQCB in a report of waste discharge, for all site injection well mud sumps and aerated brine ponds.

59. Please provide additional information on any requirements or permits necessary for groundwater monitoring wells for the mud sumps and brine ponds that would otherwise be required by a permitting agency if not for the Energy Commission's sole permitting jurisdiction. Assuming groundwater monitoring wells would be necessary (per statement on amendment petition page 5.17-24), please provide all the information and documentation normally required by the County and/or CRBRWQCB for construction and operation of any groundwater monitoring wells that may be necessary for the project injection well mud sumps and aerated brine ponds.

BACKGROUND

The amendment petition includes a construction storm water pollution prevention plan (SWPPP) in Appendix J. The plan provided is titled "Construction Drainage, Erosion, and Sediment Control/Stormwater Pollution Prevention Plan". However, the document appears to be primarily a construction SWPPP and does not include drainage, erosion, and sediment control plans/actions likely to be undertaken during facility operation. The Drainage, Erosion, and Sediment Control Plan (DESCP) required by the Energy Commission is meant to be a living document that is updated and revised as necessary for the life of the project/facility. As such, the plan would be revised and updated as the project moves from preliminary to final design phases, construction, and into facility operation. A draft DESCP that addresses both facility construction and operation phases generally allows staff to evaluate the project developer's proposed plans for managing site drainage, storm water and potential erosion impacts during facility operation (including monitoring and maintenance plans for detention basins, and best management practices (BMPs) to be employed during facility operation). However, submittal of a separate operation DESCP would be acceptable if the applicant would prefer to continue to use the combined construction DESCP/SWPPP provided in Appendix J.

DATA REQUEST

60. Please provide a draft facility operation DESCP addressing site management activities, control structures, and erosion/sediment control BMPs to be implemented during operation of the proposed project. At a minimum, the draft DESCP should contain all appropriate maps, diagrams, supporting calculations and narrative descriptions necessary to address elements A through G below.

    A. Vicinity Map – Provide a map(s) at a minimum scale 1"=100' indicating the location of all project operation elements, including depictions of all significant geographic features including canals, drainage ditches, and any wetland habitat areas.

B. Site Delineation – Identify the location of all proposed facility structures (i.e., buildings, pipelines, well pads, ponds, roads, etc.) and all drainage control structures and facilities to be employed during project operation.

C. Watercourses and Critical Areas – Show the location of all nearby watercourses and wetland habitat and indicate the proximity of those features to the project operation structures, landscape areas, and all transmission and pipeline corridors.

D. Drainage Map – Provide a topographic site map(s) at a minimum scale 1"=100' showing all proposed operation drainage systems and drainage area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours should be extended off-site for a minimum distance of 100 feet in flat terrain.

E. Best Management Practices (BMPs) – Identify on the above drainage map all facility operation BMPs and include BMP descriptions and design features in map legend.

F. Narrative Discussion of Project Site Drainage – Include a narrative discussion of the drainage management measures to be taken to protect the site and adjacent properties from impacts from storm water, erosion, or flooding during facility operation. The narrative (and associated diagrams, plans, and maps) should include applicable information from a site hydraulic analysis prepared by a professional engineer/erosion control specialist for the project site and all operation drainage design features. The narrative should state the watershed size(s) in acres and identify all assumptions made in the calculation of drainage measures. The hydraulic analysis should be used to support the selection of BMPs and any structural controls planned to divert off-site and/or on-site drainage around or through the project site operation facilities. In addition, please include a discussion of the location, timing, and maintenance schedule for all erosion and sediment control BMPs to be used at the site during facility operation.

G. Landscaping and Ground Cover Plans – Identify all areas to be cleared of vegetation, areas to be preserved or landscaped, and areas with impervious cover.

SANITARY WASTES

BACKGROUND

Page 2-44 of the amendment petition states that sanitary waste would be directed to a septic tank, which would be constructed according to the County building code. The petition also states that "this tank will be pumped out as necessary; there will be leach

field" (sic). Page 5.17-26 of the petition also states that operation of the septic system would require a WDR from the CRBRWQCB. However, existing condition of certification Soil and Water-11 requires the project owner to meet county septic system requirements and does not address a need for CRBRWQCB WDRs for the septic system. Staff needs more information on the septic system design parameters, who in fact permits the septic system operation, how the tank system will comply with County (and CRBRWQCB, if applicable) requirements, and clarification on whether or not the system will include a leach field.

DATA REQUEST

61. a. Please provide the proposed facility septic system design parameters and identify how the design and operation will comply with County (and CRBRWQCB, if applicable) septic system requirements.

    b. Provide clarification on which agency would normally issue septic system permits, if not for the Energy Commission's authority, and include regulatory citations for the applicable requirements.

    c. Clarify whether or not the system will use a leach field for wastewater disposal.

    d. Discuss what means will be employed to dispose sanitary wastes collected in the proposed septic tank.

Technical Area: Waste Management
Author: Ellie Townsend-Hough

BACKGROUND

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

DATA REQUESTS

62. Please indicate whether Imperial County operates a Construction and Demolition Waste Diversion Program.
63. Please provide information on how the amended Salton Sea Unit 6 Geothermal Power Plant would meet each of the requirements of the program cited in the previous data request.

BACKGROUND

The historical use of the proposed project site was agricultural, which suggests that pesticides and herbicides were used on the site. The Phase I Environmental Site Assessment (ESA) did not identify any recognized environmental conditions, thereby eliminating the need for a Phase II ESA. Although a Phase II ESA was not completed, staff believes that given past land uses and proposed construction the project owner should verify that no harmful concentrations of any contaminants will be encountered at the proposed project site.

Common agricultural practices can result in residual concentrations of fertilizers, pesticides or herbicides in near-surface soil. To ensure that the concentrations of various chemicals do not pose a potential health risk or hazard, the project owners should provide soil sampling of the parcel/project site. The California Department of Toxic Substances Control (DTSC) has prepared the "Interim Guidance for Sampling Agricultural Fields for School Sites (Second Revision August 26, 2002)." Staff believes this guidance or the equivalent may be appropriate for further site analysis.

DATA REQUEST

64. Please provide results of field sampling and analysis that adequately characterize the presence of harmful chemicals or conditions and whether there will be any risk to construction or plant personnel due to the presence of these chemicals. The project owner should determine if there are any analytical characterization data for the agricultural chemicals that were applied to the land. Samples should be assessed for persistent agricultural chemicals, such as organochlorine pesticides that were applied to the project property.