CALIFORNIA ENERGY COMMISSION
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October 12, 2009

Mr. Gregory D. Skannal, HSSE Manager
Hydrogen Energy International LLC
One World Trade Center, Suite 1600
Long Beach, CA 90831-1600

DOCKET
08-AFC-8
DATE OCT 12 2009
RECD. OCT 12 2009

RE: HYDROGEN ENERGY CALIFORNIA PROJECT (08-AFC-8)
DATA REQUEST SET 1 (#s 1- 132)

Dear Mr. Skannal:

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 1-132) is being made in the areas of air quality, (#s 1-58), biological resources (#s 59-63), cultural resources (#s 64-79), efficiency (# 80), geology and paleontology (#s 81-82), hazardous materials (#s 83-84), public health (#s 85-91), reliability (# 92), socioeconomics (# 93), soil and water resources (#s 94-109), waste management (#s 110-124), and visual resources/visible plume (#s 125-132). We would appreciate written responses to the enclosed data requests on or before November 12, 2009.

If you are unable to provide the specific information requested, need additional time, or object to providing requested/specific information, please send a written notice to both Commissioner James Boyd, Vice Chair and Presiding Committee Member for the Hydrogen Energy California (HECA) project, and to me, within 20 days of receipt of this letter. If sent, this notification must contain the reason(s) for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, section 1716 (f)).

If you have any questions, please call me at (916) 654-5191 or email me at rjones@energy.state.ca.us.

Sincerely,
Original signed by:
Rod Jones
Project Manager

Enclosure
cc: Docket (08-AFC-8) and POS

PROOF OF SERVICE (REVISED 09/03/09) FILED WITH
ORIGINAL MAILED FROM SACRAMENTO ON 10/12/09
AA

Technical Area: Air Quality
Author: William Walters

BACKGROUND

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

DATA REQUEST

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

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

BACKGROUND

The construction fugitive dust emission calculations appear to be incomplete and do not use assumptions that appear relevant for the project site. The construction requirements at this site for this project are extensive and the site appears to have very fine soils, so the fugitive dust emission calculations should reflect the real construction needs and conditions for this project. Staff needs the applicant to revise these calculations to include all fugitive dust activities and include reasonable calculation assumptions, and then revise the construction PM10 and PM2.5 modeling assessments.

DATA REQUEST

3. Please add the following fugitive dust activity emissions, based on the equipment list provided, to the fugitive emission calculations.

   A. Dozing (AP-42, Section 11.9)

   B. Scraping (AP-42, Section 11.9)

   C. Grading (AP-42, Section 11.9)

4. Please revise all fugitive dust calculations that require a silt content assumption to use a reasonable site specific silt content value where graveling or paving is not implemented, which based on the geotechnical report in the AFC would be around 50 percent.

5. The calculations provided for unpaved road travel assume graveled roads. Please indicate if the applicant is planning to gravel the entrance and exits roads, parking areas, and lay down areas at the site during construction.

6. Please revise the construction PM10 and PM2.5 emission modeling analysis to include these revised fugitive dust emission calculations.

BACKGROUND

In general, staff is satisfied with applicant's off-road equipment emissions calculations. However, the horsepower assumptions for equipment primarily used in the initial grading phase of the site construction, where there will be a substantial amount of cut and fill do not appear appropriate. Staff needs the applicant to revise the equipment horsepower and emission for equipment sized appropriately for the amount of cut and fill necessary at this site.

DATA REQUEST

7. Please review the horsepower assumptions for the D10R dozer, the scraper, and the loader assumed in the emission calculation and revise as necessary for the type of equipment specified (D10R dozer is 580 hp, and scrapers are generally closer to or over 500 hp; well over the 250 hp assumed) or as necessary based on the work level needed for the site construction.

BACKGROUND

The AFC has not provided a list of specific emission reduction credits (ERCs) proposed to be used to offset this project's criteria pollutant emissions. Staff needs this information to complete its analysis, and the San Joaquin Valley Air Pollution Control District (SJVAPCD) needs this information in order to complete the Determination of Compliance (DOC).

DATA REQUEST

8. Please provide the list of ERC certificates or ERC banking activities that will be proposed to offset the project's emissions, along with each ERC certificate's quarterly amount, originating facility name and address, method of emission reduction, and date of reduction.

9. Please identify the potential for the creation of new emission reductions, particularly new emission reductions near the project site. This should include a discussion of the potential to shutdown steam boilers owned by Occidental whose need may be displaced by this projects' carbon dioxide (CO_2) injection.

BACKGROUND

The operations fugitive dust emission calculations appear to assume all travel is on paved roads. A review of the AFC did not find information to support that assertion, so staff needs additional information for the onsite roads construction.

DATA REQUEST

10. Please indicate if all onsite roads will be paved and whether all onsite travel will be restricted to paved roads.

BACKGROUND

The AFC does not provide energy and mass balances that are necessary for staff to fully understand the gasification technology and its emission sources. Additionally, some technical details on the gasification process need clarification. Staff needs this

information to understand the process and complete both its criteria pollutant impact analysis and its greenhouse gases (GHG) impact analysis.

DATA REQUEST

11. Please provide energy and mass balance data for the gasification process for both petroleum coke and coal. The mass balance data should clearly show carbon, water, sulfur, volatile organic compounds (VOC), toxic air contaminants (TACs), and total solids contents throughout the process.

12. Please indicate the gasifier turndown ratio and the speed and ability for the gasifier to turndown operations when there are CO_2 injection upsets requiring use of the CO_2 vent.

13. a. Please discuss how the gas turbine and duct firing fuel operating system will accommodate variations, particularly short-term spikes upward and downward in gasifier flow and heat content. b. Please discuss how the diluents gas and natural gas fuel input would compensate for gasifier output fluctuations to provide consistent fuel heat input to the gas turbine and duct burners considering that there is no proposed hydrogen fuel storage.

BACKGROUND

The AFC data is not clear on the maximum heat input rates for the CTG and HRSG. Staff needs this information to verify the criteria and GHG emissions estimates and regulatory requirements for the project.

DATA REQUEST

14. Please provide the maximum heat input rate, for each fuel type if different, for the combustion turbine generator (CTG) and the heat recovery steam generator (HRSG) duct burner.

BACKGROUND

The proposed BACT emission concentration level for nitrogen oxide (NOx) is 4 ppm regardless of the assumed fuel. Staff understands that the hydrogen rich fuel does not have an abundance of in practice facilities achieving lower NOx levels, but for natural gas BACT has been established in practice as 2 ppm (parts per million) for large combined cycle gas turbines. Additionally, staff has seen reference to a Japanese Integrated Gasification Combined Cycle (IGCC) facility that has been able to meet a 2 ppm NOx level. Staff needs more information to understand why this proposed facility cannot meet a 2 ppm NOx best available control technology (BACT) limit, particularly when operating with natural gas.

DATA REQUEST

15. Please indicate, in consideration of any international IGCC facilities that are meeting 2 ppm NOx, why this facility would not be able to meet that BACT permit limit when operating on hydrogen rich fuel.

16. Please indicate why when operating on natural gas that this facility, in contrast to the dozen or more other natural gas fired combined cycle gas turbine projects currently operating in California, cannot meet a 2 ppm NOx BACT limit.

BACKGROUND

The project description does not indicate that there is the potential for any fugitive VOC emissions. However, it is unclear if there are intermediate steps in the gasifier process that would include gaseous or liquid organic products that could result in fugitive VOC emissions.

DATA REQUEST

17. A. Please indicate if there are VOCs created as intermediate products in the gasification process and calculate the potential fugitive VOC emissions from piping components (flanges, valves, pumps, compressors, etc.).

    B. Please provide an estimated count of those piping components.

BACKGROUND

The cooling tower emission estimate uses what staff believes to be an inappropriate assumption that may underestimate the potential PM2.5 (particulate matter) emissions from the cooling towers. The applicant uses a factor from a South Coast Air Quality Management District (SCAQMD) website table that indicates only 60 percent of the cooling tower PM10 emissions are PM2.5. This table value assumption comes from the Air Resources Board (ARB) CEIDARS (data base) “unspecified” category that clearly is not specific to cooling towers and has not been technically justified for cooling tower use. Staff believes that, unless the applicant can provide technically justified rationale to lower PM2.5 emissions, it should be conservatively assumed that all particulate from cooling tower drift is PM10 and PM2.5. Staff needs the applicant to revise the cooling tower emission calculations.

DATA REQUEST

18. Please recalculate the cooling tower particulate emissions considering the mist eliminator drift guarantee of 0.0005 percent of recirculating water flow, and assuming that all particulate emissions are both PM10 and PM2.5.

BACKGROUND

Staff is aware that the applicant has removed the LMS100 peaking turbine from the project design and that the applicant will be making other modifications to ensure operating PM2.5 emissions, subject to Federal New Source Review, remain below 100 tons per year. Based on the initial emission estimates for the project, staff believes that it will not be easy to reduce PM2.5 emissions below 100 tons per year. Staff has the following information requests/project design revisions for the applicant to consider while making these project modifications.

DATA REQUEST

19. Please revise the cooling tower operating data as needed to address the reduction in the maximum heat rejection load due to the removal of the LMS100 turbine.

20. Please indicate if the applicant is willing to increase the onsite water treatment capabilities to substantially reduce the total dissolved solids (TDS) content of the cooling towers' recirculating water.

21. Please indicate if the applicant is willing to revise the design to use an air cooled condenser for project cooling.

22. Please indicate if the applicant is willing to reduce the CTG/HRSG PM10/PM2.5 emission factor (18 lbs/hour) to values that would be similar to those used for other recent Frame F gas turbine projects (approximately 9 lbs/hour for non-duct fired operations and 10.5 to 12 lbs/hour for duct fired operations), either through a general reduction in the stipulated emission factor, or by modifying the full time duct firing operating assumption that would allow a reduced non-duct firing emission factor to be used for a substantial portion of the year.

BACKGROUND

The AFC provides information regarding fuel delivery truck trips, but does not indicate if there are any dedicated onsite vehicles. Staff needs additional information to determine if the operating emissions need to be revised to include dedicated onsite vehicles, and what mitigation the applicant would be willing to stipulate to for these emission sources.

DATA REQUEST

23. Please identify the number, make/model type, vehicle miles traveled (on-road vehicles), or hours of use (off-road vehicles), and fuel type of any necessary dedicated onsite off-road and on-road vehicles.

24. Please provide criteria pollutant and GHG emission estimates for the dedicated onsite vehicles emissions related to vehicle use such as including paved and unpaved road dust.

25. Please identify if the applicant would be willing to stipulate to a condition of certification that would require a review of available alternative low-emission vehicle technologies, including electric and hydrogen fueled vehicles. Staff needs to know whether the applicant would consider use of those technologies to replace any proposed onsite dedicated diesel and gasoline fueled vehicles used for operations and maintenance if lower emission alternative technology vehicles are both available and not cost prohibitive.

BACKGROUND

The applicant provided air basin by air basin fuel hauling emission summaries; however, staff has questions regarding the results, in particular the difference in magnitude for trucking carbon dioxide emissions which increased in all basins versus the criteria pollutant emissions which tended to decrease in all basins, except for the San Joaquin Valley Air Basin. Staff needs to understand the calculation assumptions that provide this unexpected difference between criteria and GHG emissions.

DATA REQUEST

26. Please explain the emission calculation assumptions that create GHG emission increases from petroleum coke hauling in the South Coast and South Central Coast Air Basins while the criteria pollutant emissions are estimated to decrease.

BACKGROUND

The offsite fuel and waste hauling emissions for this project are substantial. Staff needs to know if the applicant would be willing to stipulate to additional mitigation beyond only contracting for 2010 and newer trucks as provided in the AFC.

DATA REQUEST

27. Please identify if the applicant would be willing to stipulate to contracting for only new trucks for fuel delivery at the time of starting operations and maintaining a maximum average fleet age, or some other measures to mitigate this large emissions source.

BACKGROUND

The offsite trip parameter data appear incomplete in terms of specific destination for the outgoing waste and secondary product haul trips. Staff needs the applicant to determine the likely destination for these haul trips and modify the emission calculations appropriately. Additionally, staff needs more information regarding the final disposition for the gasification solids.

DATA REQUEST

28. Please identify likely destinations for the gasification solids, sulfur, and zero liquid discharge (ZLD) filter cake haul trips, and revise the offsite emissions calculations appropriately.

29. Please indicate if the gasification solids may be used, in a manner like fly ash, for concrete production; or be used for some other beneficial purpose.

BACKGROUND

The AFC notes that the applicant is proposing to use Tier 4 emergency engines, with very low NOx emission levels. However, but the data supplied to the San Joaquin Valley Air Pollution Control District (SJVAPCD) as part of the response to the SJVAPCD notice of incomplete application provides engine information that does not substantiate the emission levels provided in the AFC. Staff needs confirmation that the applicant will obtain Tier 4 engines and will stipulate to the emission levels provided in the AFC.

DATA REQUEST

30. Please confirm that the emergency engines will meet Tier 4 emission standards, and will meet the more stringent emission levels provided in the AFC.

BACKGROUND

The AFC does not show any gasoline diesel storage for vehicle refueling. Staff would like to confirm that the applicant does not plan to store gasoline or diesel for vehicle refueling.

DATA REQUEST

31. a. Please confirm that there will be no gasoline or diesel vehicle refueling storage at the site and that the onsite dedicated gasoline or diesel fueled vehicles will have to drive to the nearest gasoline station for fueling. The nearest station which is about 15 miles round trip from the site. b. Alternatively, or provide information for any proposed onsite gasoline storage and refueling facilities including throughput information and permitting requirements.

BACKGROUND

The AFC, page 5.1-70, indicates that the results of a cumulative impacts analysis will be provided under separate cover and that Appendix J provides a list of projects located within 6 miles of the site from the SJVAPCD. However, staff's review indicates that Appendix J contains a list of projects from Kern County and not stationary source projects from the SJVAPCD. Staff needs the applicant to obtain the project list from the SJVAPCD and complete the cumulative impacts analysis.

DATA REQUEST

32. Please provide a list from the SJVAPCD of large stationary source projects with permitted emissions, for projects with greater than 5 tons of permitted emissions of any single criteria pollutant, located within six miles of the project site that have been recently permitted, but did not start operation prior to 2009, or are in the process of being permitted.

33. Please provide a cumulative impacts modeling analysis in consultation with Energy Commission staff based on the project list provided by SJVAPCD.

BACKGROUND

The applicant provided additional emission data for various plant commissioning activities but did not provide a schedule to determine which activities would overlap. Staff needs to determine if the worst-case commissioning modeling analysis includes all of the emission sources necessary for worst-case conditions.

DATA REQUEST

34. Please provide a schedule for the commissioning of the CTG/HRSG and the balance of plant equipment in order to identify the worst-case overlapping short-term emission conditions.

35. Please identify if the applicant would be willing to stipulate to any commissioning constraints to prevent overlap and minimize the worst-case short-term emissions during plant commissioning.

BACKGROUND

The applicant has revised certain equipment and emission assumptions and staff's data requests are likely to create additional revisions to the operating emissions. Therefore, staff needs the applicant to remodel the operating emissions based on the finalized emission assumptions.

DATA REQUEST

36. Please revise the operations emission modeling, as appropriate, to include all of the revised onsite operating emission estimates.

BACKGROUND

Staff is aware of the applicant's desire to acquire existing adjacent/nearby residential properties. Staff's impact analysis needs to consider the nearest residential receptors, so staff needs additional information regarding which residential properties the applicant is trying to acquire and progress regarding that acquisition.

DATA REQUEST

37. Please identify all of the residential properties near/adjacent to the site that the applicant has or is trying to acquire, provide the current status of that acquisition, and provide staff with additional acquisition information as that process moves forward.

BACKGROUND

The fuel type flexibility for this project petroleum coke and coal for hydrogen rich fuel production and natural gas, makes an estimate of operations GHG emissions complex and variable depending on the fuel use assumptions. Staff needs additional information to understand the potential best-case and worst-case conditions for operations GHG emissions.

DATA REQUEST

38. Please indicate if the applicant is willing to formally stipulate to a maximum coal input of 75 percent of the project's gasification feedstock (heat input basis).

39. Please indicate the minimum required short-term and long-term (annual) coal input.

40. Please indicate if the applicant is willing to formally stipulate to a maximum annual natural gas input to the CTG/HRSG, and if so please provide that input limit.

41. Please provide a range of potential best-case and worst-case GHG operating emissions based on the range of stipulated fuel use limits and other GHG emission source limitations (such as the CO_2 vent). Please note that this estimate should be a line item estimate that includes the balance of operations GHG emissions, including fuel delivery, waste/product hauling, employee trips, etc.

BACKGROUND

This project will use petroleum coke from sources that are currently providing this fuel/raw material source to other users. Staff needs to understand how this facility may impact the operations of those facilities, including the potential for additional fuel transportation caused by this project.

DATA REQUEST

42. Please indicate if the applicant has obtained rights to the specified sources of petroleum coke and if that will restrict the operation of other power generation facilities in California, or require them to obtain fuel from other more distant sources.

BACKGROUND

GHG estimates are necessary for all phases of the project in order to complete the GHG analysis for the project.

DATA REQUEST

43. Please provide GHG emission estimates for the entire construction period. This estimate should include all GHG emission sources, including offsite truck trips, construction employee trips, etc.

BACKGROUND

The AFC notes that the CO_2 vent may operate up to 504 hours per year. However, staff is not certain how this number is derived or whether the applicant has guarantees in place for the carbon sequestration. Additionally, staff is uncertain how much of the injected CO_2 would stay sequestered permanently and how much may be emitted with the extracted petroleum. Staff needs additional information about the carbon sequestration and the CO_2 vent operation to complete the criteria pollutant and GHG emissions analysis for the project.

DATA REQUEST

44. Please provide information regarding guarantees from the location(s) that will be used for sequestration that provides assurance that the CO_2 vent will not need to operate for more than 504 hours per year.

45. Please identify how the value of 504 hours for maximum CO_2 venting was determined.

46. Please identify if the applicant is willing to stipulate to a condition limiting the CO_2 vent operation to no more than 504 hours per year, or some proportion of the regular operating hours where CO_2 is sequestered.

47. Please identify the CO_2 concentration in the CO_2 vent gas that was used in the GHG emissions calculation.

48. Please provide an estimate of the additional petroleum production that will be enabled by the project's CO_2 sequestration.

49. Please describe the life-cycle for the injected CO_2, in particular any steps that will be taken at the petroleum production sites to recover and re-inject the HECA injected CO_2 that would accompany the extracted crude petroleum products and what guarantees that these recovery and reinjection actions will occur throughout the life of the HECA project.

50. Please estimate the amount of injected CO_2 that will be emitted, with consideration of any guaranteed recovery and reinjection processes, with the extracted crude petroleum products.

BACKGROUND

A Determination of Compliance (DOC) analysis from the SJVAPCD will be needed for staff's analysis. Staff will need to coordinate with the applicant and SJVAPCD to keep apprised of any air quality issues determined by the District during their permit review.

DATA REQUESTS

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

BACKGROUND

In order to coordinate with U.S. Environmental Protection Agency (EPA) during the licensing process staff needs the name and contact information of the assigned U.S. EPA Prevention of Significant Determination (PSD) permit engineer. Additionally, staff needs an update on the PSD permit application status and needs to be copied on substantive communication with U.S. EPA.

DATA REQUEST

52. Please provide the name and contact information for the assigned U.S. EPA PSD permit engineer.

53. Please provide the current status of the PSD permit application review.

54. Please provide copies of any official submittals and correspondence to or from the U.S. EPA within 5 days of their submittal to or their receipt from the U.S. EPA.

55. Please provide, when available, the Federal Lands Manager's (FLM) official acceptance of the PSD Class 1 modeling analysis.

BACKGROUND

The project will require approval from the U.S. Department of Energy (DOE), which would appear to trigger General Conformity regulations. Staff needs additional information regarding the appropriate DOE air quality professional contact(s) and the applicant's proposal to show a positive General Conformity finding.

DATA REQUEST

56. Please identify the appropriate DOE air quality contact for this project, and provide their e-mail and phone number.

57. Please provide a comparison of the San Joaquin Valley Air Basin (SJVAB) total construction emissions and operating emissions (after addressing all other air quality data requests that may impact those emission estimates) versus the General Conformity applicability requirements. Please note that the applicability requirements should reflect both the current nonattainment status and any anticipated changes to the nonattainment status that are scheduled or likely to occur prior to the DOE Record of Decision.

58. Please provide a proposed methodology for the General Conformity determination (offsets, etc.) for the pollutants found to exceed the General Conformity applicability thresholds for construction and operation.

Technical Area: Biological Resources
Author: Brian McCollough

BACKGROUND

The project would involve pipeline routes crossing the Kern River and the Kern River Flood Control Channel, and passing through the Coles Levee Ecosystem Preserve. Staff contacted Julie Vance of the California Department of Fish and Game (CDFG) to discuss the proposed project. Ms. Vance recommended that Streambed Alteration Notification Packages be prepared for the Kern River and Kern River Flood Control Channel crossings, and submitted to the CDFG. The information submitted in the Streambed Alteration Notification Packages will be used to determine if Streambed Alteration Agreements would be necessary, but for the Energy Commission's exclusive jurisdiction, and then to develop the resource protection measures that will be included in staff's analysis and proposed conditions of certification.

Ms. Vance also expressed concern regarding the pipeline route passing through the Coles Levee Ecosystem Preserve. CDFG holds a conservation easement on this property, and the proposed pipeline route would conflict with the conservation easement.

DATA REQUESTS

59. Please consult with CDFG regarding the preparation of full and complete Streambed Alteration Notification Packages. Please also provide a report of conversation regarding any guidance provided by CDFG as to how to prepare complete Streambed Alteration Notification Packages. Please submit the completed packages to CDFG and provide a copy to Energy Commission staff.

60. Please consult with CDFG and the U.S. Fish and Wildlife Service (USFWS) regarding the pipeline route through the Coles Levee Ecosystem Preserve. As the linear routes have not yet been finalized, please consider design changes, including re-routing any linear project features around this sensitive area, such that the conditions of the conservation easement on that property are not violated. Please provide records of conversation regarding discussions with the wildlife agencies about protective measures, including the possibility of re-routing linear features that would result in compliance with the conservation easement for the Coles Levee Ecosystem Preserve.

BACKGROUND

The proposed project site and off-site linear routes provide potential habitat for several federal or state listed species. Staff will need to incorporate into its analysis the protective measures that would be included in federal and state incidental take permits. As a result of the Energy Commission's exclusive jurisdiction regarding siting power plants, CDFG will not be issuing permits, but the requirements that would have been in the CDFG permits will be incorporated into the Energy Commission license. The applicant needs to apply to CDFG and USFWS for the appropriate take permits. The applicant proposes obtaining the federal take permit through an Endangered Species Act Section 7 consultation initiated by the U.S. Environmental Protection Agency (EPA). The application for the state Incidental Take Permit (ITP) should include appropriate

mitigation measures, including a suggested habitat compensation strategy, such that impacts to state endangered species are fully mitigated. Staff needs the take permit applications to be completed and submitted to the wildlife agencies so that the wildlife agencies can develop the appropriate listed species protective measures, provide them to the applicant, and staff can then incorporate these measures into its analysis and conditions of certification.

DATA REQUESTS

61. Please provide a status update on the anticipated schedule for the EPA's initiation of the Section 7 consultation process with USFWS and the preparation of the Biological Assessment and Biological Opinion.

62. Please provide a schedule for the preparation and submittal of the state Incidental Take Permit application.

63. Please prepare and submit the ITP application to CDFG, and provide a copy of the completed state ITP application to staff.

Technical Area: Cultural Resources
Authors: Amanda Blosser, Beverly E. Bastian, and Michael McGuirt

Note: Any information that identifies the location of archaeological sites needs to be submitted under confidential cover.

BACKGROUND

The Hydrogen Energy California (HECA) Project anticipates a variety of ground-disturbing activities that have the potential to impact previously known and newly identified archaeological sites within and adjacent to the project Rights-of-Way (ROWs). The project ROWs are defined by the project as:

- The project site and laydown areas, plus 50 feet around them;
- A transmission line corridor 175 feet wide; and
- In or within 50 feet of the centerline of all other proposed linear facilities such as pipelines.

In addition to ground disturbance in these ROWs, the HECA project would construct both temporary and permanent access roads, use horizontal directional drilling (HDD) under extant linear facilities, and install tubular transmission line support structures. To identify all potential project impacts to cultural resources, staff needs additional location data on various project components, on the extent of cultural resources survey completed and remaining to be completed, and on all known and newly identified cultural resources.

DATA REQUEST

64. Please provide, under confidential cover, a series of maps (based on USGS 7.5-minute topographic maps enlarged to a scale of 1"=1,000 feet) that includes the project site and all the proposed alternative routes of linear facilities. In addition to the project components, please depict the following:

    A. The boundaries of all project ROWs;

    B. All areas surveyed for cultural resources;

    C. All areas that are within the archaeological survey area required in the Energy Commission's siting regulations (in or within 200 feet of the project site, and in or within 50 feet of the centerline of all linear facilities) that were not surveyed by pedestrian archaeological survey related to this project, including the south-southwest side of the West Side Canal;

    D. All cultural resources that have been identified in or within 200 feet of the project ROWs. Please label the cultural resources with identifying site or isolate numbers;

    E. The proposed locations of pipeline laydown areas and HDD pits;

    F. The proposed installation locations of transmission line tubular support structures;

G. The proposed locations of both temporary and permanent access roads that the project would construct;

H. The proposed location of the carbon dioxide pipeline custody transfer point; and

I. The proposed locations of the five groundwater extraction wells that would provide process water for the HECA Project.

BACKGROUND

Staff's review of the Cultural Resources section of the Application for Certification (AFC) and the Archaeological Resources Report indicated that some areas that the Energy Commission Regulations require to be surveyed for cultural resources were not surveyed due to access or other limitations. To complete its inventory of cultural resources that may be subject to project impacts, staff needs these areas to be surveyed and to receive a report of the survey results.

DATA REQUESTS

65. Please survey for cultural resources those areas mapped under the previous Data Request, part c, as not surveyed by pedestrian archaeological survey related to this project.

66. Please provide a date or dates when reports for the additional survey will be provided to staff.

BACKGROUND

Although the proposed depth or width of disturbance was provided for some components of the project, comprehensive information was not provided for the proposed project site location, all the proposed linear facilities, and HDD pit locations. To assess the project's potential to impact buried cultural resources, staff needs to know the extent of the ground disturbance associated with the construction of these project components.

DATA REQUEST

67. Please provide a table showing the maximum depth of disturbance for the proposed project site; the length, width, and depth of the HDD pit locations and of both the temporary and permanent access roads; and the maximum trench depth and width for the process water line route, the transmission line alternative routes, the combination potable water and natural gas pipelines route, and the carbon dioxide pipeline alternative routes.

BACKGROUND

The confidential cultural resources technical report identified twenty-four archaeological sites that could be impacted by the construction activities of the proposed HECA project and that staff believes could hold archaeological deposits potentially eligible for the California Register of Historical Resources (CRHR). One site, P-15-3079, which now includes site P-15-6073, has been determined eligible for the National Register of Historic Places (NRHP), and project impacts to it would require mitigation. In addition,

site P-15-6087 was previously recommended NRHP-eligible, and the cultural resources consultant for the Applicant concurs with that recommendation. Sites P-15-171 (described as a burial mound) and P-15-126 were not relocated during the pedestrian survey. In addition, the cultural resources consultants to the Applicant have listed other previously recorded and newly identified archaeological sites situated within the project ROWs that may be impacted by the proposed project. At present, staff does not have enough information regarding these sites to determine whether they could be CRHR-eligible on the grounds that they could yield information important in prehistory. Consequently, staff believes that either these sites should be avoided or they should be tested to enable staff to better evaluate their potential to yield important data.

DATA REQUESTS

68. Please provide a plan to avoid project impacts to the following previously recorded or newly identified archaeological sites: P-15-125, P-15-666, P-15-2422, P-15-3077, P-15-3167, P-15-3254, P-15-6736, P-15-6767, P-15-6768, P-15-6769, P-15-9737, P-15-9738, HECA-1008-1, HECA-2009-1, HECA 2009-2, HECA-2009-3, HECA-2009-4, HECA-2009-5, HECA-2009-6, and HECA-2009-7.

69. If impacts to the sites listed in this data request cannot be avoided, please submit for staff approval a plan, including a research design, for using test excavations to determine if any subsurface deposits are present and to acquire sufficient data to make recommendations of CRHR eligibility for these sites, with the potential of the recovered data evaluated according to its applicability to the research questions posed in the research design.

70. Please provide to staff a letter report on the testing and results at these sites, presenting an analysis of the recovered data and recommendations regarding the eligibility of the sites.

BACKGROUND

The confidential Archaeological Resources Report, submitted for the HECA Project, included a map, Figure 1, which detailed the location of archaeological sites near the proposed project site and linear facilities. Since the boundaries of many of the sites are not well determined, and the locations of proposed access roads have not been provided by the Applicant, it appears that some sites might extend into areas where they could be impacted by project construction. The additional sites that appear close to project facilities and subject to impact from the project are P-15-89, P-15-179, P-15-173, P-15-2485, P-15-124, P-15-6782, P-15-6766, and P-15-3087. To identify all potential project impacts to cultural resources, staff needs additional location data on these sites.

DATA REQUEST

71. If the boundaries of sites P-15-89, P-15-179, P-15-173, P-15-2485, P-15-124, P-15-6782, P-15-6766, and P-15-3087 appear to be within 200 feet of any of the project ROWs, please provide a discussion of the potential for impacts to the site by the proposed project.

BACKGROUND

The AFC (p. 2-17) discusses the proposed carbon dioxide alternative pipelines and the selection, by Occidental of Elk Hills, of a custody transfer point to be located somewhere on the selected carbon dioxide pipeline route alternative. Even if components are outside our jurisdiction, under the California Environmental Quality Act staff must analyze the whole of the project.

DATA REQUEST

72. Please provide a description and discussion of the custody transfer point, including the location, potential extent of ground disturbance (length, width, and depth), and the potential to impact cultural resources.

BACKGROUND

Section 4.8 of the AFC provides a discussion of potential construction impacts that might occur during the installation of transmission line support structures. It appears that use of either transmission line alternative would make it necessary for the power line to change direction and continue at an angle to the previous route. Staff's understanding is that in situations where a transmission line route turns a corner, there would be potential ground disturbance over a wider area than that ordinarily impacted by the installation of in-line transmission line support structures.

DATA REQUEST

73. Please provide a discussion of the construction techniques likely to be used to accomplish the task of a transmission line turning a corner. Please include the extent of the area likely to experience impacts, the type of equipment to be used, and the depth and width of anticipated disturbance including that due to heavy equipment or access roads.

BACKGROUND

The applicant sent letters dated June 24, 2008, to notify Native Americans regarding the proposed HECA project. A map, also dated June 24, 2008, identifying the proposed project and linear facility locations was provided as an attachment to those letters. The map dated June 24, 2008, is not the same as the map provided in the Project Description Section of the AFC. The proposed project site has changed. To comment on the project and to facilitate mitigation (should mitigation be necessary), Native Americans need to have accurate project information.

DATA REQUEST

74. Please obtain a current list of Native Americans with heritage ties to the project area from the Native American Heritage Commission. Please send letters accurately describing, and a map accurately depicting, the project and inviting comments from Native Americans.

75. Please provide to staff copies of the information sent to Native Americans and provide copies of any comments received from Native Americans. If comments are received via telephone, please provide a brief summary of any conversations.

BACKGROUND

A recent synthesis of archaeological and geoarchaeological information on the California Central Valley ("The Central Valley: A View from the Catbird's Seat," by Jeffrey S. Rosenthal, Gregory G. White, and Mark Q. Sutton, in *California Prehistory: Colonization, Culture, and Complexity* (Terry L. Jones and Kathryn A. Klar, eds., 2007), suggests that prehistoric deposits in the Central Valley dating before 2,500 years ago have either been obliterated by agricultural activities or buried by ongoing alluvial processes (p. 150).

The construction of the HECA Project would entail ground disturbance of the 473-acre project site and project linear facilities. The project site and much of the area traversed by the proposed liner facilities are covered by late Quaternary alluvium (AFC, pp. 5.16-5 and 5.16-11; Figure 5.15-1), potentially obscuring archaeological sites. Staff assumes parts of the project site and project linear facilities rights of way (ROWs) have been disturbed by agriculture to a depth of 3 feet, but considerable project ground disturbance would exceed that depth. The ground disturbance resulting from the construction of equipment installations at the plant site would be likely to extend as deep as 12 feet below the surface. The 8-mile-long gas and potable water pipelines would be installed together in a trench at least 5 feet below grade. The 15-mile-long process water pipeline would presumably be installed at least 5 feet below grade. The carbon dioxide pipeline would also be buried approximately 5 feet below the ground surface, and the directional drilling used to install the carbon dioxide pipeline below canals and rivers would extend to a depth of 100 feet. The amount of relatively deep ground disturbance proposed in an area sensitive for archaeological resources is considerable.

Although the Archaeological Resources Report acknowledges that archaeological deposits could be inadvertently exposed during construction activities, the Cultural Resources section of the AFC and the Archaeological Resources Report provide no information on the potential for the construction of the proposed project to truncate archaeological deposits that may lie buried beneath the surface of the project area. These deposits may be too deep to present surface manifestations, but may be within reach of construction impacts. Staff needs information of a finer resolution on the age, the structure, and the character of the geologic units beneath the surface of the project area to evaluate the project's potential to substantially and adversely change the CRHR-eligibility of archaeological deposits that may lie buried in the project ROWs.

DATA REQUESTS

76. Please obtain the services of a professional in geoarchaeology: a person who, at a minimum, meets the U.S. Secretary of Interior's Professional Qualifications Standards for prehistoric archaeology, as published in Title 36, Code of Federal Regulations, part 61, and includes the completion of graduate-level coursework in geoarchaeology, physical geography, geomorphology, or Quaternary science, or education and experience acceptable to cultural resources staff. Please submit the resume of the proposed geoarchaeologist for staff review and approval.

77. Please have the approved geoarchaeologist provide a discussion, based on the available Quaternary science and geoarchaeological literature, of the historical geomorphology of the project ROWs.

    A. Describe the development of the landforms on which the ROWs are proposed, with a focus on the character of the depositional regime of each landform since the Late Pleistocene epoch.

    B. Provide data on the geomorphology, sedimentology, pedology, hydrology, and stratigraphy of the ROWs, and the near vicinity. The discussion should relate landform development to the potential in the ROWs for buried archaeological deposits.

    C. Provide overlaying the above data on the project ROWs.

78. In the absence of sufficient extant Quaternary science and/or geoarchaeological literature pertinent to the reconstruction of the historical geomorphology of the project area, please have the approved geoarchaeologist design a primary geoarchaeological field study of the project ROWs. Submit a research plan for staff approval, and conduct the approved research. The purpose of the study is to facilitate staff's assessment of the likelihood of the presence of archaeological deposits buried deeper than 3 feet in the project's ROWs. The primary study and resulting report should, at a minimum, include the following elements:

    A. A map of the present landforms in the project area at a scale of not less than 1:24,000; the data sources for the map may be any combination of published maps, satellite or aerial imagery that has been subject to field verification, and the result of field mapping efforts;

    B. A sampling strategy to document the stratigraphy of the portions of the landforms in the project ROWs where the construction of the proposed project will involve disturbance at depths greater than 3 feet;

    C. Data collection necessary for 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 the project ROWs 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 sample (3 5-gallon buckets) of sediment from the major sedimentary deposits in each profile through ¼- 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; and

    D. An analysis of the collected field data and an assessment, based on those data, of the likelihood of the presence of buried archaeological deposits in the project ROWs, and, to the extent possible, the likely age and character of such deposits.

79. Please have the approved geoarchaeologist prepare a report of the primary field study and submit it to staff under confidential cover.

Technical Area: Efficiency
Author: Steve Baker

BACKGROUND

Solid fuel and other feedstocks will be delivered to the plant by truck and by train. Solid byproducts and waste materials will be removed from the project by truck. The fuel consumed by these trucks represents a significant energy use, and affects the overall fuel efficiency of the project.

DATA REQUEST

80. Please quantify the amount of diesel fuel that will be consumed each year by trucks and trains to provide necessary transportation of fuel, feedstocks, byproducts, waste materials and any other such materials to and from the project.

Technical Area: Geology and Paleontology
Author: Michael S. Lindholm, P.G.

BACKGROUND

The Confidential Paleontological Resources Technical Report, provided separately from the AFC, states that several paleontological archival records searches were conducted for Hydrogen Energy California (HECA) by the San Bernardino County Museum, the Los Angeles County Natural History Museum, and the University of California Museum of Paleontology. These reports provide an inventory of paleontological resources in the museum's collection from the proposed plant site and project linears, as well as from geological units in the surrounding area that are present on the site. The reports also give independent assessments of the paleontological sensitivity of geological units and the potential for impacting any paleontological resources.

DATA REQUEST

81. Please provide a copy of the archival records search reports prepared by the San Bernardino County Museum, the Los Angeles County Natural History Museum, and the University of California Museum of Paleontology.

BACKGROUND

Injection of fluids into subsurface formations, as is proposed for HECA as part of the CO_2 sequestration plan, may have the effect of increasing the seismicity in the area. Commonly, faults in the vicinity of the injected fluids may experience more frequent, but lower magnitude earthquakes. An internal report prepared for Hydrogen Energy International, LLC by Terralog Technologies USA, Inc. titled *Potential for Induced Seismicity from CO_2 Injection Operations at Elk Hills* is referenced in Section 5.15 Geological Hazards and Resources of the AFC. This report could be useful in evaluating the geologic hazards that might result from injection of CO_2 produced by HECA.

DATA REQUEST

82. Please provide a copy of the Terralog Technologies USA, Inc. report titled *Potential for Induced Seismicity from CO_2 Injection Operations at Elk Hills* that is referenced in the AFC.

Technical Area: Hazardous Materials
Author: Dr. Alvin Greenberg

BACKGROUND

Table 5.12-5 lists the frequency of hazardous materials deliveries and states for aqueous ammonia the maximum number of deliveries per hour, per 24-hour period, and per year. However, this information is confusing and contradictory. To assess the risk of hazardous materials transportation to workers and the public, staff needs to know the maximum number of deliveries on a daily, weekly, and yearly basis.

DATA REQUEST

83. Please clarify the number of deliveries of aqueous ammonia on a daily, weekly, and annual basis.

BACKGROUND

The Off-site Consequence Analysis (OCA) for aqueous ammonia did not include the estimated distance to the staff's benchmark exposure level of 75ppm; 200ppm is the lowest concentration modeled. Also, a map (figure) depicting the distances to each modeled concentration in visual format was not provided. Staff needs this information in order to fully and completely assess the risk of hazardous materials storage to workers and the public.

DATA REQUESTS

84. Please provide OCA modeling results for an ammonia spill in map format showing the distances to each modeled concentration including staff's benchmark level of 75 ppm.

Technical Area: Public Health
Author: Dr. Alvin Greenberg

BACKGROUND

The AFC did not provide diesel particulate matter (DPM) emission factors for equipment and vehicles that will be used during construction activities nor was a health risk assessment prepared for diesel emissions from construction activities. Table 5.1-10 of the AFC provides modeling results for combustion sources during construction activities for criteria pollutants, including PM10 and PM2.5, but not DPM. While staff understands that project construction emissions are short-term and may indeed pose an insignificant risk to public health as the AFC states, staff needs to verify this by reviewing the DPM emission factors and health risk assessment for construction activities.

DATA REQUEST

85. Please provide DPM emission factors from construction activities, the AERMOD air dispersion results (Chi/Q in ug/m^3 per g/sec) at the PMI, MEIR and MEIW (as defined in data requests 86, 87,and 88 below), and a health risk assessment for diesel construction equipment emissions.

BACKGROUND

Public health impacts are modeled in the Health Risk Assessment at grid receptors located outside of both the Project Site and the Controlled Area. Impacts should also be determined for the Point of Maximum Impact (PMI) regardless of whether it occurs inside or outside of the Project Site and Controlled Area. Impacts at the location of the Maximally Exposed Individual Worker (MEIW) should likewise be determined.

DATA REQUESTS

86. Please provide the location (in UTM coordinates), the AERMOD air dispersion results (Chi/Q in ug/m^3 per g/sec) at that location, and the estimated cancer risk, chronic hazard index and acute hazard index at the Point of Maximum Impact within the Project Site area, within the Controlled Area, and outside of both areas.

87. Please provide the location (in UTM coordinates), the AERMOD air dispersion results (Chi/Q in ug/m3 per g/sec) at that location, and the estimated cancer risk, chronic hazard index and acute hazard index at the MEIW within the Project Site area, within the Controlled Area, and outside of both areas.

BACKGROUND

Staff identified two potential nearest Maximally Exposed Individual Residents (MEIRs). One is located next to the facility to the northwest and is evaluated in the AFC. The applicant is attempting to purchase this property. The other nearest residence is located east of the Project Site, at the intersection of Station Road and Tupman Road. The location of this residence should also be evaluated in the HRA for public health impacts.

DATA REQUESTS

88. Please provide the location (in UTM coordinates), the AERMOD air dispersion results (Chi/Q in ug/m^3 per g/sec) at that location, and the estimated cancer risk, chronic hazard index and acute hazard index at the nearest residence located at the intersection of Station Road and Tule Park Road.

BACKGROUND

The AFC identifies all HECA Toxic Air Contaminant (TAC) emission sources on page 5.6-10 of the Revised AFC under the subheading "Stationary Sources." Staff is concerned that not all sources are contained in that list. Staff needs a list of all sources, all TACs emitted from those sources, and all emissions factors in order to properly and fully assess the potential for impacts to workers and the off-site public.

Also, Tables 5.6-2 through 13 show that emissions factors of TACs emitted from the facility are derived from various sources including EPA AP-42 tables, the Ventura County APCD, CARB CATEF tables, and the project itself ("HECA Project"). Staff needs to know the basis for all decisions to use these sources of emissions factors and whether for an explanation of the project itself can serve as a source of information.

DATA REQUESTS

89. Please provide an updated list of all sources of TACs in tabular format listing the source, the identity of the TAC, and the emission factor. Please include all fugitive emissions of TACs from valves and flanges (especially hydrogen sulfide) and from all mobile sources (such as DPM from the trucks that would deliver petcoke and coal feedstock to the facility). Please use the maximum number of truck deliveries expected to and from the facility. (Mobile sources can be modeled as an area source in the facility fenceline and when within 0.1 mile of the facility.)

90. Please provide a discussion to support the choice of emission factors and explain why emission factors from a similar facility were not used.

BACKGROUND

Three flares are proposed for use at the emission point of pressure relief valves. Flares are a constant source of TACs, must be burning all the time, and provide incomplete combustion. The risk due to the production of TACs is included in the HRA. Staff needs to know the rationale for these flares and why collection, compression, and storage for recycling with a back-up flare to prevent over-pressure was not an option considered.

DATA REQUEST

91. Please provide a rationale for not designing a pressure relief valve capture and recycling system for the three sources.

Technical Area: Reliability
Author: Steve Baker

BACKGROUND

The General Electric Frame 7FB gas turbine must be started on natural gas before it can be operated on hydrogen. The AFC explains (§ 2.1.8.3, page 2-14) that pressure in the natural gas supply pipeline is adequate to power this machine only 95.8 percent of the time. No gas compressor will be provided to ensure adequate pressure to this machine.

DATA REQUEST

92. Please describe and quantify the likely impact on project generating reliability due to the possibility that gas pressure may be inadequate to start the Frame 7FB gas turbine.

Technical Area: Socioeconomics
Author: Scott Debauche

BACKGROUND

Section 5.8.1.3 indicates that Hall Ambulance Service in Bakersfield will respond to the project site if an ambulance service is required. It is vague whether that would be for project construction and operation.

DATA REQUEST

93. Please provide protocol for on-site first responder emergency medical care during both project construction and operation.

Technical Area: Soil and Water Resources
Author: Cheryl Closson

BACKGROUND

To help determine the potential impacts to soil and water resources from the construction and operation of a power plant project, the Energy Commission staff generally requests that the applicant prepare a draft Drainage, Erosion and Sediment Control Plan (DESCP). The DESCP would be a separate document from any Construction and/or Industrial Storm Water Pollution Prevention Plans (SWPPP) required under the federal National Pollutant Discharge Elimination System (NPDES) program, unless an applicant intends to combine the DESCP and any required SWPPPs into one document. Once a project is approved, the draft DESCP would be required to be updated and revised as the project moves from the preliminary to final design phases, on through to construction and operation of the facility. In addition, the DESCP submitted prior to site mobilization would be required to be designed and sealed by a professional engineer/erosion control specialist.

While the HECA project applicant has submitted a preliminary storm water drainage plan (Figure 2-36), a preliminary grading plan (Figure 2-41), and a preliminary hydrology study (Appendix O3) as part of the project AFC, more information is needed to fully assess the adequacy of the erosion control and storm water management features and mitigation proposed for project activities and operation.

DATA REQUESTS

94. Please identify whether or not the project will prepare a combined SWPPP and DESCP document, or if the plans will be prepared and maintained separately.

95. Please provide a draft DESCP that contains elements “A” through “I” below outlining the site management activities and erosion/sediment control Best Management Practices (BMPs) to be implemented during site mobilization, grading, construction, and operation of the proposed project (including linear features). The level of detail in the draft DESCP should be commensurate with the current level of planning for site grading and drainage. Please provide all conceptual erosion control information for those phases of construction and operation that have been developed or provide a statement identifying when such information will be available.

    A. Vicinity Map – Provide a map(s) at a minimum scale 1”=100’ indicating the location of all project elements, including depictions of all significant geographic features including swales, storm drains, and sensitive areas. (Note: Smaller map scales may be used for linear features due to the large distances covered by some of the features. Large scale inserts may be used to highlight detail for areas of concern, etc.)

    B. Site Delineation – Identify all areas subject to soil disturbance (i.e., project site, lay down areas, all linear facilities, landscaping areas, and any other project elements) and show boundary lines of all construction/demolition areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

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

D. Drainage Map – Provide a topographic site map(s) at a minimum scale 1"=100' showing all existing, interim and proposed drainage systems and drainage area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours should be extended off-site for a minimum distance of 100 feet in flat terrain. (Note: Smaller map scales may be used for linear features due to the large distances covered by some of the features. Large scale inserts may be used to highlight detail for areas of concern, etc.)

E. Narrative Discussion of Project Site Drainage – Include a narrative discussion of the drainage management measures to be taken to protect the site and downstream facilities. The narrative should include the summary pages from the hydraulic analysis prepared by a professional engineer/erosion control specialist. The narrative should state the watershed size(s) (in acres) that was used in the calculation of drainage control measures, and include discussions justifying selection of the control measures to be used. Information from the hydraulic analysis should also be provided to support the selection of BMPs and structural controls to divert off-site and on-site drainage around or through the project construction and laydown area, as well as post-construction and operation areas.

F. Clearing and Grading Plans – Identify all areas to be cleared of vegetation and areas to be preserved. Provide elevations, slopes, locations, and extent of all proposed grading using contours, cross sections or other means and include locations of any disposal areas, fills, or other special features. Illustrate existing and proposed topography tying in proposed contours with existing topography.

G. Clearing and Grading Narrative – Include a table that identifies all of the following: all project elements where material will be excavated or fill added; the type and quantities of material to be excavated or filled for each element; whether the excavation or fill is temporary or permanent; and the amount of material to be imported or exported.

H. Construction Best Management Practices Plan – Identify on the topographic site map(s) the location of the site-specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). The BMPs identified should include measures designed to prevent wind and water erosion in areas with existing soil contamination. Any treatment BMPs used during construction should also allow for testing of storm water runoff prior to discharge to receiving water.

I. BMP Narrative – Provide a narrative discussion on the selection, location, timing, and maintenance schedule for all erosion and sediment control BMPs to be used prior to initial grading, during project element excavation and

construction, at final grading/stabilization, and for post-construction. A narrative discussion with supporting calculations should also be included addressing any project specific BMPs. Separate BMP implementation schedules should be provided for each project element for each phase of construction. The maintenance schedule should include post-construction maintenance of structural control BMPs or a statement when such information will be available.

BACKGROUND

Page 5.9-14 of the project AFC states that approximately 1.1 million cubic yards of soil required for project construction will be imported from offsite sources. The potential source identified for procuring the necessary fill material is Syndex Ready Mix, a commercial aggregate company located approximately five miles west of the project site. Staff needs to clarify if the project will only be using commercial aggregate companies for project fill material or if non-commercial borrow sites will also be used for any project construction fill material. In the event that non-commercial borrow sites are to be used, staff would need documentation that any proposed fill material is clean and uncontaminated prior to use of the material by the project.

DATA REQUEST

96. Please clarify whether or not the HECA project will use non-commercial fill material sources for any project-related activities. If non-commercial fill borrow sites are to be used for the project, please identify the steps the project will take to ensure that any fill material is certified to be clean and uncontaminated.

BACKGROUND

The project AFC states that the West Kern Water District (WKWD) will provide potable water for both the project construction water needs as well as the potable water supply for facility operation. However, the AFC does not include a copy of a will-serve letter or water supply contract from WKWD confirming that that the district has the necessary water and is willing to supply the water to the project. In addition, the AFC states that the potable water for construction would be transported to the project site via the proposed potable water pipeline. Staff needs additional information on what alternative construction water supplies could be used by the project in lieu of potable water, as well as how and what water will be used for construction of the project linears, including construction of the potable water pipeline.

DATA REQUESTS

97. Please provide additional information on the availability and feasibility of using alternative water supplies (such as treated municipal wastewater) for project construction activities in lieu of using potable water.

98. Please provide additional information on the water supplies and transport mechanisms to be used for construction of the project linears.

99. Please provide a water supply contract or will-serve letter from the WKWD stating that the district is willing to provide potable water to the HECA project for construction water use.

100. Please provide a water supply contract or will-serve letter from the WKWD stating that the district is willing to provide potable water to the HECA project for facility operation potable water uses for the life of the project.

101. Please provide detailed construction water use estimates for project site construction needs, as well as project horizontal directional drilling (HDD) activities and any other water uses for project linear construction. The construction water use estimates should be submitted both in narrative format and in a table that clearly shows estimated water use for each of the main project construction activities (i.e., grading, dust suppression, HDD, trenching, hydrotesting, or other major water use activities, etc.), water source, and method of delivery to be employed to transport the water to the use site.

BACKGROUND

Appendix O1 provides a signed summary document of the proposed water transfer terms between the Applicant and Buena Vista Water Storage District (BVWSD). This document states that "the Sale Water is available upon completion of environmental review and facilities for the marketing program contemplated by this agreement." Appendix O2, Groundwater Model Documentation, was prepared by URS and is dated April 30, 2009. This URS report cites in its references two studies by Sierra Scientific Services addressing BVWSD water quality and the potential impacts of the district's proposed Brackish Groundwater Remediation Project. These studies are listed with 2009 dates and an indication that the studies are in preparation. In addition, page 5.14-14 of the project AFC states that the Brackish Groundwater Remediation Project is Component 4 of the district's Groundwater Management Plan, for which an EIR is currently under preparation.

Staff requests copies of the following studies, or most recent drafts of the studies, to help staff evaluate both the availability and the potential impacts associated with the HECA project's proposed water supply.

DATA REQUESTS

102. Please provide a copy of the completed document, or most recent draft, of the following report: "A Baseline Water Quality Analysis of the Buena Vista Water Storage District", prepared by Sierra Scientific Services, Bakersfield, California, dated 2009.

103. Please provide a copy of the completed document, or most recent draft, of the following report: "An Evaluation of the Geology, Hydrology, Well Placements and Potential Impacts of the Buena Vista Water Storage District's proposed Brackish Groundwater Remediation Project", prepared by Sierra Scientific Services, Bakersfield, California, dated 2009.

104. Please provide copies of any available draft or final Environmental Impact eports or other environmental documents or materials developed or in development for the BVWSD's Groundwater Management Plan and the associated Brackish Groundwater Remediation Project.

105. Please provide updated information on the status of the BVWSD Groundwater Management Plan environmental review and approval. Please include updated information and schedule (if available) for approval and implementation of the district's Brackish Groundwater Remediation Project.

BACKGROUND

The HECA project proposes to use horizontal directional drilling (HDD) to install project linears (carbon dioxide, natural gas, and potable water pipelines) under the California Aqueduct, Kern River Flood Control Channel, and West Side/Outlet Canal, in order to minimize disturbance of and impacts to water courses and sensitive areas. While use of HDD helps minimize impacts in sensitive areas, one of the risks associated with HDD is the release of drilling mud into the environment due to spills, tunnel collapse, or fractures developed in the subsurface rock/soil from drilling pressures (known as a "frac-out"). Staff requires additional information on what steps the project will take to prevent frac-outs or other releases from project HDD activities.

DATA REQUEST

106. Please provide an appropriate frac-out contingency plan for project horizontal directional drilling (HDD) activities. (The level of detail for the plan should be equivalent to what would normally be required by a Department of Fish and Game Stream Bed Alteration agreement.)

BACKGROUND

Page 5.14-26 states that once hydrotesting is complete the test water will be discharged to upland areas, to canals, or returned to the source from which it was obtained. Discharges of wastewater (such as construction dewatering fluids and hydrotest waters) to surface waters, as well as discharges to land that threaten surface or groundwater, are activities regulated by the California Regional Water Quality Control Board, Central Valley Region (CVRWQCB). Staff needs additional information on the proposed hydrotest water discharge and how the applicant plans to address CVRWQCB requirements for discharge of the hydrotest wastewaters.

DATA REQUESTS

107. Please clarify whether or not the proposed discharge of project hydrotest wastewater will require authorization from the CVRWQCB, either in the form of compliance with the general National Pollutant Discharge Elimination System (NPDES) permit for low threat discharges (Order No. R5-2008-0081) or through issuance of an individual NPDES permit or waste discharge to land requirements.

108. If the proposed discharge meets the conditions for the general NPDES permit, please submit to both the CVRWQCB and Energy Commission staff all the information necessary for preliminary completion of the Notice of Intent required for application and coverage under the general order.

109. If the proposed discharge does not meet the conditions for coverage under the general permit, but would still require authorization for discharge, please provide to both the CVRWQCB (with the appropriate filing fee) and Energy Commission staff all the information necessary for a Report of Waste Discharge as normally required by the CVRWQB for issuance of waste discharge requirements, but for the Energy Commission's in-lieu permitting authority.

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

110. Please indicate whether Kern County operates a Construction and Demolition Waste Diversion Program.

111. Please provide information on how the HECA project will meet each of the requirements of the program cited in the previous data request.

BACKGROUND

Staff reviews the capacity available at off-site treatment and disposal sites and determines whether or not the proposed power plant's waste would have a significant impact on the volume of waste a facility can accept. The California Integrated Waste Management Board provides guidance in their "Construction and Demolition and Inert Debris Tools and Resources Kit" which provides information on waste materials, densities, and methods for calculating waste volumes. This guidance can be found at http://www.ciwmb.ca.gov/leatraining/Resources/CDI/Tools/Calculations.htm.

Landfill capacities, in cubic yards, are identified in AFC section 5.13.1. Although Tables 5.13-1, and 5.13-2, provide information on the estimated quantities of wastes generated during construction and operation, they do not provide a total volume of waste that would be generated during construction and operation. Therefore, staff cannot compare the volume of waste associated with the HECA power plant with the remaining volumetric capacity at potential landfill disposal sites.

DATA REQUEST

112. Please provide information on the total volume of waste, in cubic yards, that will be generated during construction and operation.

BACKGROUND

Table 5.13-3 of the AFC provides information on the operation wastes expected to be generated by the project and briefly describes onsite and offsite management methods for the wastes. "Dispose at an incinerator" is listed as an onsite management method, however, no additional information explaining this management method is provided.

DATA REQUEST

113. A. For the methyldiethanol amine sludge from tail-gas treating unit (MDEA Sludge TGTU) and sour water sludge waste stream in Table 5.13-3 where the onsite management method is identified as "dispose at an incinerator", please explain what facilities will be used as a management method.

B. Provide more on how the wastes will be managed onsite (i.e., how the waste will be stored or accumulated, and/or transported off-site).

BACKGROUND

The HECA project proposes to recycle both non-hazardous and hazardous wastes as much as possible and also proposes to implement a waste minimization program. Staff fully supports these efforts. Table 5.13-3 shows that as much as 274,000 tons per year of gasification solids waste could be generated. The applicant has provided no information on the location of on-site storage of gasification solids, transportation off-site, and the evaluation process for reuse of gasification solids (Page 5.13-12).

DATA REQUESTS

114. Please provide a description of the process that will be used to evaluate and determine how the gasification solids will be reused or recycled.

115. Please provide a summary table of information on proposed businesses that would purchase gasification solids from the project. At a minimum, please include the following information for each facility: facility location, distance from project site, frequency and method of delivery, capacity, materials accepted, acceptance limits (if any), volume they would purchase or accept, and terms of agreement under which they would purchase or accept gasification solids from the project.

116. Please describe where and how the gasification solids will be stored prior to reuse or disposal. Please describe the location, size, containment, and any regulatory permits required.

BACKGROUND

The Phase I Environmental Site Assessment (Phase I ESA) prepared in accordance with ASTM Standard E 1527-05 guidelines by URS Corporation for the proposed HECA project (Appendix M, Volume II of the project Application for Certification (AFC)) provides information on the main project site but does not address the areas associated with linear facilities to be constructed as part of the project.

The applicant is proposing an 8-mile long transmission line, 8-mile long natural gas pipeline, 7-mile long water line and a 4-mile long carbon dioxide pipeline. A Phase I ESA, or equivalent information, is needed for the properties along linear facilities to determine if past or present uses of the property have caused, or threaten to cause, contamination that might impact, or be impacted by, construction and operation of the proposed project.

DATA REQUESTS

117. Please provide a Phase I ESA, or equivalent information, addressing the past and present uses of property along, adjacent to, or in proximity of the project's transmission line, natural-gas pipeline, water line, and carbon dioxide pipeline. The requested information should include an evaluation addressing whether or not past or present site conditions may have resulted in contamination or potential contamination that could impact construction and/or operation of the proposed project.

118. Where the alignments traverse properties where there has been agricultural land use, the Phase I ESA shall identify the type of crops grown over as long a period as records indicate, the historical use and identity of pesticides (including organic and inorganic pesticides, and herbicides), and a statement of the likelihood of finding levels of pesticides along the pipeline/transmission routes that might present a risk to workers and/or the public.

BACKGROUND

The Phase I Environmental Site Assessment (ESA) identified recognized environmental conditions (RECs) at the site which establishes the need for the applicant to complete and submit a Phase II to evaluate whether they present a significant health and safety risk. The RECs included staining on the ground surface, underground fuel oil storage tanks, and contaminated soil. In addition, there is an unidentified liquid discharge, and an uncontained tailings pile associated with the operation of the existing Port Organics Products, LTD (PO) natural fertilizer manufacturing plant located on a portion of the proposed site. The presence of these conditions establishes the need for the applicant to complete and submit a Phase II ESA to staff.

The historical use of the proposed project site was agricultural, which suggests that pesticides and herbicides were likely used on the site. Common agricultural practices can result in residual concentrations of fertilizers, pesticides or herbicides in near-surface soil. The Phase I ESA did not identify this land use as a REC. To ensure that the concentrations of agricultural chemicals do not pose a potential health risk or hazard, the applicant should provide soil sampling and characterization 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 equivalent may be appropriate for further site analysis.

DATA REQUESTS

119. Please provide results of field sampling and analysis which adequately characterize the presence of harmful chemicals or conditions at the site if any, and identify whether there will be any risk to construction or plant personnel due to the presence of these chemicals.

120. Please confirm that there is no site contamination related to underground storage tanks located on the proposed project site.

121. Please provide an estimated date for the demolition of the fuel oil tanks on the proposed project site, along with a schedule and work plan for investigation and possible remediation of soils in the vicinity of the tanks.

122. Please identify what constituents are in the PO fertilizer plant’s contaminated soil and tailing piles located on the proposed project site.

123. Please provide a schedule and work plan for investigation and possible remediation of soils and tailing piles that may pose a health and safety risk.

124. Please provide information on any soil sampling and analysis or regulatory enforcement action that may have been taken related to the discharge pictured in Photo 21 of the Phase 1 ESA or other discharges related to the PO operation.

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

BACKGROUND

Staff needs additional information to review the applicant's visible plume modeling analysis for the CTG/HRSG. Staff requires additional CTG/HRSG exhaust information to confirm the modeling inputs used in the applicant's analysis and complete this review.

DATA REQUEST

125. Please summarize for the gas turbine/HRSGs the exhaust conditions to complete or correct data in the table below.

Parameter	**CTG/HRSG Exhaust**					
Stackl Height*	65 meters (213 feet)					
Stack Diameter*	6.1 meters (20 feet)					
Ambient Temperature*	30°F		65°F		100°F	
	Non-Duct Fired					
Fuel Type	H_2-Rich	Nat Gas	H_2-Rich	Nat Gas	H_2-Rich	Nat Gas
Full Load Exhaust Temperature (°F)						
Full Load Exhaust Flow Rate (1000 lbs/hr)						
Full Load Exhaust Moisture Content (wt %)						
	Duct Fired					
Fuel Type	H_2-Rich	Nat Gas	H_2-Rich	Nat Gas	H_2-Rich	Nat Gas
Full Load Exhaust Temperature (°F)						
Full Load Exhaust Flow Rate (1000 lbs/hr)						
Full Load Exhaust Moisture Content (wt %)						

* Stack height and diameter are from Appendix D of the AFC. Limited exhaust data is available for Appendix D but does not provide the ambient conditions assumed.

Different cold weather, average annual, and hot weather temperature conditions can be provided as available.

BACKGROUND

Staff plans to perform a plume modeling analysis for the cooling tower and review the applicant's visible plume modeling analysis. Staff requires additional cooling tower operating information to complete this analysis.

DATA REQUEST

126. Please summarize for the main power block/gas 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	**Main Power Block/Gas Cooling Tower Exhausts**					
Number of Cells	17 cells (1 by 17)					
Cell Height*	16.76 meters (55 feet)					
Cell Diameter*	9.14 meters (30 feet)					
Tower Housing Length*	259.20 meters (850 feet)					
Tower Housing Width*	18.29 meters (60 feet)					
Ambient Temperature*	30°F		65°F		100°F	
Ambient Relative Humidity	90%		40%		15%	
Duct Firing	Yes	No	Yes	No	Yes	No
Number of Cells in Operation						
Heat Rejection (MW/hr)						
Exhaust Temperature (°F)						
Exhaust Flow Rate (lb/hr)						

*Cell height and diameter and tower length and width are from air quality modeling files, where the tower height is somewhat different than the value given in the SACTI visible plume modeling files.

127. 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 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.

128. Please summarize for the main power block/gas 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	ASU Cooling Tower Exhausts		
Number of Cells	4 cells (1 by 4)		
Cell Height*	16.76 meters (55 feet)		
Cell Diameter*	9.14 meters (30 feet)		
Tower Housing Length*	60.70 meters (199 feet)		
Tower Housing Width*	18.29 meters (60 feet)		
Ambient Temperature*	30°F	65°F	100°F
Ambient Relative Humidity	90%	40%	15%
Number of Cells in Operation			
Heat Rejection (MW/hr)			
Exhaust Temperature (°F)			
Exhaust Flow Rate (lb/hr)			

*Cell height and diameter and tower length and width are from air quality modeling files, where the tower height is somewhat different than the value given in the SACTI visible plume modeling files.

129. 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 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.

130. Staff is concerned that the very high air flow rates per heat rejection values provided in the applicant's SACTI modeling files will be difficult to meet if they are required as a design condition. Please review the air flow rate and heat rejection data and confirm that following values used in the SACTI modeling are correct.

    A. Main Power Block/Gas Cooling Tower – 27.8 kg/s air flow per MWh of cooling

    B. ASU Cooling Tower – 30.9 kg/s air flow per MWh of cooling.

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

132. Please identify if the cooling tower fan motors will be dual speed or have variable speed/flow controllers for either of the two cooling towers.

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 *HYDROGEN ENERGY CALIFORNIA PROJECT*

Docket No. 08-AFC-8

PROOF OF SERVICE LIST
(Rev. 9/3/09)

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DECLARATION OF SERVICE

I, April Albright, declare that on October 12, 2009, I served and filed copies of the attached Hydrogen Energy California Project (08-Afc-8) Data Request Set 1 (#s 1- 132) dated, October 12, 2009. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at:
[www.energy.ca.gov/sitingcases/hydrogen_energy].

The documents have 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:

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

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

AND

FOR FILING WITH THE ENERGY COMMISSION:

✓ 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-8
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 signed by
April Albright