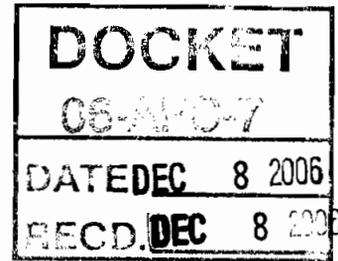


## CALIFORNIA ENERGY COMMISSION

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December 8, 2006



Mr. Gregory Lamberg  
Manager, Project Development  
Pacific Gas and Electric Company  
Mail Code N12G  
P.O. Box 770000  
San Francisco, CA 94177-0001

**RE: HUMBOLDT BAY REPOWERING PROJECT - DATA REQUESTS (1-57)**

Dear Mr. Lamberg:

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 (#1-57) is being made in the areas of Air Quality (#1-18), Biological Resources (#19), Cultural Resources (#20-27), Geology and Paleontology (#28), Hazardous Materials (#29-30), Land Use (#31-32), Noise and Vibration (#33), Public Health (#34-35), Socioeconomics (#36), Soil and Water Resources (#37-44), Transmission System Engineering (#45-48), Waste Management (#49-51), and Worker Safety and Fire Protection (#52-57). Written responses to the enclosed data requests are due to the Energy Commission staff on or before January 12, 2006, or at such later date as may be mutually agreeable.

If you are unable to provide the information requested, need additional time, or object to providing the requested information, please send a written notice to both the Committee and me within 10 days of receipt of this notice. The notification must contain the reasons for not providing the information, the need for additional time, and the grounds for any objections (see Title 20, California Code of Regulations, Section 1716 (f)).

If you have any questions, please call me at (916) 654-4679 or email me at [jkessler@energy.state.ca.us](mailto:jkessler@energy.state.ca.us).

Sincerely,

John S. Kessler  
Project Manager

Enclosure

cc: Docket (06-AFC-7)  
Proof of Service List  
Agencies

**Technical Area:** Air Quality  
**Author:** Brewster Birdsall

## **BACKGROUND**

### **Reduce Potential PM10 and PM2.5 Impacts**

The U.S. EPA recently revised the national ambient air quality standards (NAAQS) for particulate matter less than 2.5 micrometers (PM2.5) downward from 65 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) to 35  $\mu\text{g}/\text{m}^3$  for the 24-hour average concentration (see Federal Register Vol. 71, No. 200, p. 61144, October 17, 2006; effective December 18, 2006).

Tables 8.1-24 and 26 of the AFC show that the project would cause a maximum impact of roughly 21.7  $\mu\text{g}/\text{m}^3$  PM2.5 over a 24-hour averaging period from the direct emissions of PM2.5. Background PM2.5 concentrations occur at or above the new NAAQS. With background concentrations possibly causing a violation of the new NAAQS, the project could contribute to violations of the new PM2.5 NAAQS.

The proposed PM10/2.5 emission rates are from the manufacturer's guarantees (AFC page 8.1-28); however, staff believes that use of more-stringent emission factors instead of manufacturer's guarantees should be explored. Lean-burn, spark ignition, engines firing only natural gas achieve particulate matter emission rates of 0.02 grams per brake-horsepower-hour (g/bhp-hr) (AFC Appendix 8.1E). Although this level is not directly applicable to the proposed engines, because they would be pilot-ignited with diesel, a level lower than the proposed 0.1 to 0.2 g/bhp-hr may need to be met in order for the proposed engines to comply with Best Available Control Technology (BACT) requirements. The local air district and California Air Resources Board will determine the BACT requirements for the proposed engines, but because ambient air quality impacts of PM10/2.5 are a concern, staff seeks more information on whether the equipment would be able to meet PM10/2.5 limits more stringent than those proposed.

## **DATA REQUEST**

1. Please analyze a more-stringent PM10 and PM2.5 emission limit (e.g., develop a factor based on 0.02 g/bhp-hr during natural gas firing with an additional emission factor to account for diesel pilot fuel heat input) to minimize PM10/2.5 impacts.
2. Please identify other existing installations of natural-gas fired, diesel-pilot compression ignition engines, identify the owner and manufacturer of the engines, and summarize any available information on particulate matter emission test results. This information should be focused on other installations of the proposed Wartsila engines.

## **BACKGROUND**

### **Applicability of Airborne Toxic Control Measure**

Emissions of diesel particulate matter (PM10/2.5) would be subject to the California Air Resources Board (CARB) Airborne Toxic Control Measure (ATCM) for compression ignition engines (AFC Section 8.1.5.2.2.2) (Cal. Code Regs., tit 17, §93115). The AFC presents an interpretation of the ATCM's definition of "compression ignition engine" in order to demonstrate that the ATCM's requirements should not apply to the Wartsila engines in diesel pilot injection mode.

Staff believes that the proposed reciprocating engines may be defined as “compression ignition engines” and may be subject to the ATCM in backup diesel fuel firing mode as well as in diesel pilot injection mode. Staff believes the ATCM could be applicable to the engines, regardless of operating mode because the ATCM is focused on the equipment rather than the fuel. There are likely exemptions from some of the requirements during different operating modes. For example, there is an exemption from some of the requirements in Section (c)(13) of the ATCM for “in-use dual-fueled diesel pilot CI engines” using alternative fuels, where natural gas is an alternative fuel. The exemption was put in place to encourage conversion of existing “in-use” diesel-fueled CI engines to a dual-fueled diesel pilot configuration using natural gas (CARB Final Statement of Reasons of Rulemaking, Posted September 27, 2004),<sup>1</sup> but the equipment would still be subject to reporting requirements. The local air district and California Air Resources Board will ultimately determine the ATCM requirements for the proposed engines.

### **DATA REQUEST**

3. Please provide a description of ATCM requirements (Cal. Code Regs., tit 17, §93115) assuming that the Wartsila engines satisfy the ATCM definition of “compression ignition engine.” Please note whether reporting requirements would apply, if emission limitations are found to be non-applicable.

### **BACKGROUND**

#### **Emission Calculations and Proposed Limits**

Operation of the reciprocating engines would be limited to a maximum of 50 hours of operation per engine per year on backup diesel fuel for non-emergency operation and to a maximum of 800 hours per engine per year on diesel for “reasonably foreseeable” emergencies (AFC page 8.1-30). It is not clear how diesel fuel use would be minimized and what steps would be taken to avoid possible excursions of the annual operating limits. Staff is concerned that natural gas shortfalls or forced operation for reliability requirements, both of which are outside the control of the applicant, could lead to HBRP exceeding its proposed fuel use or emission limitations. The proposed HBRP appears to be an “interruptible” customer of natural gas because an emergency is defined as a shortage of natural gas supplies sufficient to trigger curtailment of natural gas to interruptible customers (AFC Section 8.1.2.2.2). It is also not clear how the proposed plant-wide fuel use limitation (AFC Table 8.1-14) would be enforced if there becomes a need for HBRP to operate over the proposed 70 percent capacity factor to satisfy electric grid reliability requirements.

### **DATA REQUEST**

4. Please clarify whether HBRP would be an “interruptible” natural gas customer and what steps would need to be taken to ensure that deliveries of natural gas to HBRP are “uninterruptible.” As part of this response, please clarify whether HBRP would have the same status as a “core customer” of natural gas.

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<sup>1</sup> <http://www.arb.ca.gov/regact/statde/statde.htm>.

5. Please clarify the circumstances that would lead to diesel fuel use. For example, AFC Section 6.1.1 shows that the existing power plant is required by CPUC Tariff to reduce gas usage and switch to backup fuel when average temperature drops below 50 °F, but it is not clear whether this requirement could be relaxed with the proposed project. Staff is interested in the feasibility of the CPUC considering and adopting revisions to the Tariff in order to minimize the number of hours of plant operation on backup fuel.
6. Given the inability to predict natural gas shortages or ensure deliveries of natural gas to HBRP, please describe what actions could be taken to improve the reliability of the natural gas fuel supply. For example, consider and describe the feasibility of natural gas storage options.
7. Please describe the actions that HBRP would take (such as a variance request, an authorization of non-compliant operation, or additional air quality mitigation) if there is a shortfall of natural gas supplies for a prolonged period and the reciprocating engines are forced to operate on diesel fuel for more than 800 hours per engine per year.
8. Please describe the actions that HBRP would take (such as a variance request, an authorization of non-compliant operation, or additional air quality mitigation) if there is a need to operate HBRP at an annual capacity factor of greater than 70 percent to satisfy local electrical reliability requirements.

## **BACKGROUND**

Maximum hourly emissions of NO<sub>x</sub> from the ten reciprocating engines are shown to be 830 lb/hr (AFC Table 8.1-17). Based on ten engines starting simultaneously within one hour and each backup diesel startup causing 164 lb/hr of NO<sub>x</sub> (AFC Table 8.1-16), the potential NO<sub>x</sub> emissions during startup should be 1,640 lb/hr. Maximum daily emissions are based on three startups during a 24-hour period, but it is not clear whether permit conditions on these operations are proposed.

## **DATA REQUEST**

9. Please describe how NO<sub>x</sub> would be limited during startups to less than 830 lb/hr, including a black start emergency condition of ten engines starting on diesel fuel simultaneously.
10. Please discuss whether permit conditions would be used to limit the number of daily startups.

## **BACKGROUND**

### **Mitigation for Volatile Organic Compounds (VOC) and PM<sub>10</sub>/2.5 Impacts**

AFC Appendix 8.1G shows a relatively small quantity of Emission Reduction Credits (ERCs) for NO<sub>x</sub>, VOC, and PM<sub>10</sub> are under negotiation. Staff is seeking ERCs that demonstrate reductions of combustion-related PM<sub>10</sub> for mitigation of project-related PM<sub>10</sub>/2.5 impacts.

## **DATA REQUEST**

11. Please identify and describe the following:

- a. Sources of the offsite ERCs for NO<sub>x</sub>, VOC, and PM<sub>10</sub>;
- b. Any ERCs held by the applicant to be used for HBRP; and
- c. Status of the negotiations.

Confidential filings are acceptable, but the strategy of securing the off-site ERCs will be described in the Preliminary Staff Assessment.

## **BACKGROUND**

### **Air Quality Modeling Analysis**

Simultaneous operation of the existing Humboldt Bay Power Plant (HBPP) during construction and commissioning of the HBRP is a concern. Modeling for project operation in the AFC includes the case of emission reductions due to shutdown of the existing power plant, but there are no modeling scenarios showing operation of the existing HBPP in conjunction with construction activities or commissioning of HBRP. AFC Appendix 8.1F notes that additional modeling evaluations will be provided for joint operation of HBPP with construction and commissioning of HBRP, but staff has not yet seen these analyses. The combined effects of construction and commissioning of the new plant should be considered in conjunction with the existing plant as part of the analysis for annual impacts to fully characterize the expected impacts during the transition year of bringing HBRP online.

## **DATA REQUEST**

12. Please prepare a dispersion modeling scenario to evaluate simultaneous operation of the existing HBPP while HBRP construction takes place. Please provide the air dispersion modeling files in CD format.
13. Please describe the anticipated levels of short-term emissions from operation of the existing HBPP while HBRP commissioning activities take place and prepare a dispersion modeling scenario to evaluate simultaneous operation of the existing power plant with HBRP commissioning. Please provide the air dispersion modeling files in CD format.
14. Please describe whether HBRP commissioning would cause any operational or emission changes at the existing Humboldt Bay Power Plant. Include the scenario of rapid load tests occurring at HBRP, and note whether operation of the existing Humboldt Bay Power Plant while the HBRP is undergoing commissioning would be expected to exceed any of its existing air permit limitations as a result.
15. Please demonstrate that maximum impacts on an annual basis have been fully characterized through the worst-case combination of HBPP operation in conjunction with either construction or commissioning of the HBRP over a 12-month period.

## **BACKGROUND**

Screening procedures for the worst-case operating and dispersion conditions showed that PM<sub>10</sub> impacts would be highest under minimum load conditions (AFC Section 8.1.2.6.3). The PM<sub>10</sub> emission rates during diesel firing are approximately two-times higher than those under normal operations, and low-load stack temperatures are lower during diesel firing between the fuels (AFC Tables 8.1A-2 and 8.1A-3). The results of the dispersion modeling analysis shows ambient PM<sub>10</sub> impacts during diesel firing to be

lower than during natural gas firing (AFC Table 8.1-24), although the lower release temperature and much higher emission rate suggest that higher PM10 impacts should occur during diesel firing. A cursory review of dispersion model input files provided on CD (e.g., file: NEW2404) shows that the stack exit velocity chosen for the diesel fired scenarios ranges from 27.43 meters per second (m/s) to 31.04 m/s. These exit velocities seem high given the low-load conditions. To correctly analyze Case 6D (as mentioned on AFC page 8.1-43), Staff believes that the PM10 modeling would need to be done with a stack exit velocity of 18.22 m/s (AFC Table 8.1B-3). The CD shows a PM10/2.5 impact during diesel firing of 42.4  $\mu\text{g}/\text{m}^3$  (file: NEW2404.OUT), which is much higher than the 18.6  $\mu\text{g}/\text{m}^3$  shown in AFC Table 8.1-24 and exceeds the new PM2.5 NAAQS.

## **DATA REQUEST**

16. Please investigate the accuracy of the PM10 24-hour impacts reported in AFC Table 8.1-24 and provide an explanation of how PM10 impacts during diesel firing may be lower than those during natural gas firing, or revise the impact analysis, as necessary to rectify.

## **BACKGROUND**

The modeling analysis of NO<sub>2</sub> impacts using the ozone limiting method (OLM) uses meteorological data from Eureka and ozone data from Ukiah, 160 miles to the south (AFC Section 8.1.2.7.5). Staff believes that an OLM analysis should use meteorological and ozone values that are from a consistent period and location. Contemporaneous and local ozone data is available for much of the modeling period from Trinidad Head (as shown in AFC Table 8.1-2 and 8.1-39).

## **DATA REQUEST**

17. Please describe qualitatively the effects that using Trinidad Head ozone data would have on the results of an OLM analysis compared to the results using the Ukiah data shown in the AFC.

## **BACKGROUND**

### **Cumulative Impacts Analysis**

Cumulative impacts have not yet been evaluated (AFC Section 8.1.3), and the protocol for cumulative modeling indicates that "reasonably foreseeable projects" will be included in the analysis. Cumulative projects with emissions changes smaller than 10 pounds per day would be considered *de minimis* (AFC Appendix 8.1F). This contradicts the request provided by the applicant to the North Coast Unified Air Quality Management District indicating that the applicant considers sources under 5 tons per year to be *de minimis* (see NCUAPCD letter dated November 9, 2006). There may be a typographical error in the AFC because it also shows that sources within 6 kilometers would be identified, which is not consistent with the Energy Commission Data Adequacy requirement to investigate sources within 6 miles (approximately 10 kilometers).

## DATA REQUEST

18. Please identify cumulative sources with emissions greater than 10 pounds per day, or provide rationale for a less-stringent *de minimis* level, and verify that sources within 6 miles have been researched.

**Technical Area:** Biological Resources  
**Author:** John Mathias

**BACKGROUND**

The AFC for the Humboldt Bay Repowering Project (HPRB) states that informal consultation is underway with the U.S. Fish and Wildlife Service (USFWS) regarding the need for formal consultation. CEC staff needs information regarding the results of informal consultation with USFWS to complete a biological resources analysis of the project.

**DATA REQUEST**

19. Please provide an update on any consultation with USFWS regarding biological resources and the HBRP. Also, please provide copies of any relevant correspondence with USFWS regarding the HBRP.

**Technical Area:** Cultural Resources  
**Author:** Dorothy Torres and Beverly Bastian

**Please provide under confidential cover any documents that may reveal the location of an archaeological site.**

## **BACKGROUND**

On page 8.3-14 of the Application for Certification (AFC), there is a discussion of the record search conducted at the California Historical Resources Information System (CHRIS). According to CEQA Guidelines Section 15064.5 (a) (2), a cultural resource included in a local register of historical resources must be treated as significant by public agencies unless a preponderance of evidence demonstrates that it is not significant. Properties within ½ mile of the proposed project site listed by local entities according to an ordinance that establishes a listing of historic resources need to be identified.

## **DATA REQUEST**

20. Please provide copies of listings of properties within ½ mile of the project site that have been designated as cultural or historic resources according to a local ordinance by Humboldt County that establishes a listing of historic resources.
21. Please provide a copy of the requirements used by Humboldt County to qualify buildings or structures for the listing.

## **BACKGROUND**

AFC Volume 2, Appendix 8.3E includes responses from Native Americans who may have heritage concerns in the project area. When the Native American Heritage Commission (NAHC) provides a list of Native Americans who wish to be contacted regarding construction disturbances on land where they have heritage concerns, the NAHC requests that the project proponent make a follow-up telephone call to Native Americans who have not responded.

## **DATA REQUEST**

22. Please make one telephone call to Native American individuals or groups listed by the NAHC who have not responded to ensure that they have received the correspondence and to verify that they do not have any information regarding cultural resources in the project area. Please provide documentation for each call, and note any comments regarding the project area provided by the Native Americans.
23. Please provide copies of any additional written responses received from Native Americans since the AFC was compiled. If responses have been received by telephone, please provide a summary of each conversation. If the location of archaeological sites may be revealed in the information, please provide the responses under confidential cover.

## **BACKGROUND**

The CHRIS has identified the proposed plant site as a location that has a medium-to-high probability for archaeological resources, and there is a previously recorded archaeological site with burials very near the proposed plant location. There is also a discussion on page 8.3-3 that describes the marshiness of the area and states that the area was covered in 2 to 6 feet of fill when the Humboldt Bay Power Plant was constructed. Page 8.11-2 says that if necessary, soil may be removed and replaced with imported fill soil more suitable for compaction and bearing. Staff needs more information to assess potential project impacts to buried archaeological resources on the project site.

## **DATA REQUEST**

24. If any additional geotechnical borings are performed in conjunction with preparing the final Geotechnical Investigation Report for this project within the coming nine months, please have the borings examined by an archaeologist on site and provide a discussion of the findings to the Energy Commission staff.
25. Please provide a discussion that identifies the probable locations of intrusion into native soil caused by either excavation or fill removal and replacement.
26. If removed soils will be disposed of off-site and/or new soils brought in, and if disposal and borrow sites are not commercial operations and consequently have not been surveyed for cultural resources, please conduct such surveys and provide the personnel qualifications, methods, and findings to staff.

## **BACKGROUND**

The Department of Parks and Recreation 523 (DPR 523) "District" form included in AFC Appendix 8.3D identifies a historic district, the PG&E Humboldt Bay Power Plant, consisting of Units 1, 2, and 3, a rail spur, a storage building, and a transmission line tower. The information provided in the form needs to be expanded and clarified to substantiate the basis for a Historic District. While a District boundary is defined, and there is a discussion of the historical importance of Unit 3 and the recommendation that Unit 3 is eligible for listing on the National Register of Historic Places, there is no justification for recognizing this set of properties as a Historic District. There is no discussion of the District's theme, period of significance, geographic scope, or historical importance. Primary forms are only included for the rail spur, the storage building, and the transmission line tower, and these forms include no justification for these properties being considered elements contributing to the District.

## **DATA REQUEST**

27. Please have a qualified architectural historian or a historian who specializes in industrial history (meeting the Secretary of Interior standards) update the extant DPR 523 District forms to effectively support the contention that the power plant buildings and facilities constitute a District, and identify and justify the contributing elements. If a District cannot be justified, please have the qualified architectural historian record the properties separately on DPR 523s "Primary" and "Building, Structure, and Object" forms and provide copies of the forms.

**Technical Area:** Geology and Paleontology  
**Author:** Dal Hunter, Ph.D., CEG.

## **BACKGROUND**

Site specific subsurface information is essential to completely evaluate a site with respect to potential geologic hazards and how the existing materials may impact design, construction, and operation of the facility. The information is also useful in establishing the geologic profile with respect to potential paleontological resources. Appendix 10G includes a geotechnical Field Memorandum dated September 7, 2006 (Attachment 1) indicating that a preliminary geotechnical investigation is in progress.

## **DATA REQUEST**

28. Please provide the following:

- a. Copies of any subsequent geotechnical memorandums;
- b. A copy of the geotechnical investigation report once it is completed; and
- c. A schedule for providing the Geotechnical Report.

**Technical Area:** Hazardous Materials Management  
**Author:** Dr. Alvin Greenberg

## **BACKGROUND**

The AFC states that the Off-site Consequence Analysis (OCA) for the storage and transfer of 19% aqueous ammonia will be provided during the AFC process (section 8.5.2.4). Staff needs the OCA modeling results (including the methodology and input/output files) and a better understanding of the secondary containment planned in order to evaluate potential impacts to on-site workers and the off-site public.

## **DATA REQUEST**

29. Please provide the Off-site Consequence Analysis for the storage and transfer of aqueous ammonia as per California Accidental Release Program (Cal-ARP) guidance, including the methodology and the input/output files.
30. Please provide the following:
  - a. A more detailed description of the aqueous ammonia storage tank and secondary containment area; and
  - b. A preliminary design drawing of the storage tank and secondary containment area.

**Technical Area:** Land Use  
**Author:** Amanda Stennick

## **BACKGROUND**

Section 8.6.1.1 of the Application for Certification (AFC) states that the 5.4-acre Humboldt Bay Repowering Project (HBRP) site is located within the 143-acre parcel owned by Pacific Gas and Electric Company (PG&E). The AFC states the County Assessor's parcel numbers are APN 305-31-34 and APN 305-131-35.

Staff is concerned that the Nuclear Regulatory Commission's (NRC) license for Unit 3 may affect land uses on the entire 143-acre parcel. If this is the case, any modification to land uses on the 143-acre parcel (such as construction of the HBRP) could be subject to review by the NRC and possibly other agencies, which normally would not have review authority over the HBRP. If the NRC license does affect land use on the 143-acre site, the applicant may wish to consider creating a 5.4-acre parcel for the HBRP.

## **DATA REQUEST**

31. Please clarify whether the 5.4-acre HBRP "site" is a legal parcel, and if so, provide the legal description of the parcel.
32. In consideration of any potential influence the NRC license may have on developing HBRP, please clarify the following:
  - a. If the NRC will be a reviewing agency for the HBRP;
  - b. If the NRC license for the PG&E nuclear power plant could affect land use on the 143-acre parcel; and
  - c. If the NRC is a reviewing agency, what is the schedule and process for its review and approval of HBRP?

**Technical Area:** Noise and Vibration  
**Author:** Steve Baker

## **BACKGROUND**

Pile driving will be necessary for the HBRP. The AFC gives expected pile driving noise levels at a distance of 1,500 feet (AFC, Table 8.7-8), and concludes that no mitigation of pile driving noise is required to avoid significant adverse noise impacts (AFC, § 8.7.3.2.2). This conclusion appears to be based solely on the fact that pile driving noise will be temporary, and will be limited to daytime hours. While this is true of general construction noise, pile driving noise can be so intrusive that this assumption does not necessarily hold true.

In order to determine whether pile driving noise will, in fact, create significant adverse noise impacts at sensitive receptors requiring mitigation, staff needs to know how loud this work will be at the receptors. This information was not included in the AFC.

## **DATA REQUEST**

33. Please provide an estimate of pile driving noise levels at sensitive receptor locations M1 through M4, and include the distance from the project site to each of these locations.

**Technical Area:** Public Health  
**Author:** Dr. Alvin Greenberg

## **BACKGROUND**

The Hotspot Analysis and Reporting Program (HARP) model was used to derive potential cancer risk values for each pollutant and route of exposure, based on an exposure of 1.0 ug/m<sup>3</sup>. These unit values were then combined with pollutant emission rates and these weighted values were used in the EPA's AERMOD model to obtain actual cancer risks and hazard indices. Staff needs additional data in order to independently confirm the Health Risk Assessment (HRA) results as found in the AFC. Staff also needs distances to certain receptors to complete its analysis of impacts.

## **DATA REQUEST**

34. Please provide the HARP transaction file (.tra) **and/or** the following information that was used in the HARP modeling:
- Stack parameters and locations in Universal Transverse Mercator (UTM) coordinates
  - Information on Project buildings and tanks used in building downwash analysis (locations in (UTM) coordinates and dimensions)
  - Meteorological data used
35. Please provide a table showing distances from the stacks to various receptors including the fence line and the nearest sensitive receptors within 1 mile as identified in Table 8.9A-1. Within the table, please include the cancer risk for a Maximum Exposed Individual (MEI), the acute hazard MEI, the chronic hazard MEI, and the Points of Maximum Impact for cancer risk and acute & chronic hazards.

**Technical Area:** Socioeconomics  
**Author:** Joseph Diamond

## **BACKGROUND**

Quantitative secondary economic impacts (with and without dollars) add useful additional information at the local (county)/regional/state level about the economic benefits/economic development from the project.

## **DATA REQUEST**

36. Please provide full quantitative economic impacts (direct and secondary-indirect and induced) during the construction and operation phases of the project. Please utilize and indicate the economic impact model (e.g., IMPLAN, REMI or another) and estimate quantitatively at least the local (Humboldt County) employment and income multipliers/secondary impacts. Staff recommends Type II or Type III employment and income multipliers since they show the full secondary economic impacts. Finally, provide the year for the economic impact analysis estimates.

**Technical Area:** Soil and Water Resources  
**Author:** Ellie Townsend-Hough

## **BACKGROUND**

### ***Water Supply***

The Energy Commission has adopted a water conservation policy as provided in the 2003 Integrated Energy Policy Report (in conformance with Public Resources Code, Div. 15, Section 25300 et esq.) on the use and disposal of inland waters used for power plant cooling that specifies the use of fresh inland water should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound.

Although staff recognizes that the proposed HBRP would use a relatively low volume of water for cooling purposes, the proposed source of groundwater for cooling is of a quality suitable for use as potable water as characterized in AFC Section 7.2. Additional information on the estimated amount of HBRP groundwater consumption and the potential impacts to other municipal users is necessary for staff to conduct an analysis of potential impacts to potable water resources.

## **DATA REQUEST**

37. Please provide a discussion of the reliability of the well water supply and any potential impact to other municipal and industrial users of groundwater.
38. Provide the monthly and annual volume usage of existing Well Number 2 for the past five years.
39. In comparison to existing well use for serving HBPP, what is the expected monthly and annual usage of Well Number 2 after the Humboldt Bay Repowering Project begins operation?

## **BACKGROUND**

### ***Wastewater***

The HBRP proposes to discharge 315,360 gallons of wastewater annually into Humboldt Community Service District (HCSD) sewers, which ultimately discharge their treated wastewater into Humboldt Bay under a National Pollution Discharge Elimination System (NPDES) Permit. AFC Table 8.15-4 indicates that among the water resources Laws, Ordinances, Regulations and Standards (LORS) applicable to the HBRP is a requirement to obtain a Permit for Industrial Wastewater Discharge, which serves to assure that HBRP's wastewater discharge will comply with HCSD's permit conditions.

## **DATA REQUEST**

40. Please provide a table of HBRP's estimated wastewater chemistry, including known pollutants originating both in the source water and on-site compared to discharge limits of known industrial wastewater pollutants and related chemical characteristics as regulated under HCSD's NPDES Permit.
41. Please describe how HBRP will meet all other requirements of a new or amended existing Permit for Industrial Wastewater Discharge that would be issued by HCSD.

Besides chemical limitations, these measures may include pretreatment requirements, peak flow restrictions, dewatering requirements, payment of fees and monitoring and reporting requirements.

## **BACKGROUND**

### ***Soils & Stormwater Drainage***

To determine the potential impacts to water and soil resources from the construction of the HBRP, the Energy Commission staff requires a Drainage Erosion and Sediment Control Plan (DESCP). Appendix 7B of the AFC contains a Site Grading and Stormwater Drainage Plan. This will need to be aggregated into a draft DESCP. The DESCP is to be updated and revised as the project moves from the preliminary to final design phases, and can be either a separate or combined document with the Construction Storm Water Pollution Prevention Plan (SWPPP) as required by the North Coast Regional Water Quality Control Board (NCRWQCB). The DESCP submitted prior to site mobilization must be designed and sealed by a professional engineer/erosion control specialist.

## **DATA REQUEST**

42. Please provide a draft DESCP containing elements A through I below outlining site management activities and erosion/sediment control Best Management Practices (BMPs) to be implemented during site mobilization, excavation/demolition, construction, and post-construction activities. Within the draft DESCP, please provide a discussion of those additional requirements of the NCRWQCB as they relate to construction and post-construction BMPs. The level of detail in the draft DESCP should be commensurate with the current level of planning for site demolition and corresponding site grading and drainage. Please provide all conceptual erosion control information for those phases of construction and post-construction that have been developed or provide a statement when such information will be available.

- A. Vicinity Map** – A map(s) at a minimum scale 1"=100' shall be provided indicating the location of all project elements with depictions of all significant geographic features including swales, storm drains, and sensitive areas.
- B. Site Delineation** – All areas subject to soil disturbance for the HBRP (project site, lay down/demolition areas, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction/demolition areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.
- C. Watercourses and Critical Areas** – The DESCP shall show the location of all nearby watercourses including swales, storm drains, wetlands, and drainage ditches. Indicate the proximity of those features to the HBRP construction, lay down/demolition, and landscape areas and all transmission and pipeline construction corridors.

- D. Drainage Map** – The DESCPC shall provide a topographic site map(s) at a minimum scale 1"=100' showing all existing, interim and proposed drainage systems and drainage area boundaries, including the integration of the proposed HBRP stormwater drainage with wetland restoration plans as applicable. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet in flat terrain.
- E. Drainage of Project Site Narrative** – The DESCPC shall include a narrative of the drainage measures to be taken to protect the site and downstream facilities. The narrative should include the summary pages from the hydraulic analysis prepared by a professional engineer/erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage measures. The hydraulic analysis should be used to support the selection of BMPs and structural controls to divert off-site and on-site drainage around or through the HBRP construction and laydown/demolition areas.
- F. Clearing and Grading Plans** – The DESCPC shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections or other means. The locations of any disposal areas, fills, or other special features will also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography.
- G. Clearing and Grading Narrative** – The DESCPC shall include a table with the quantities of material excavated or filled for the site and all project elements of the HBRP (project site, lay down/demolition areas, transmission corridors, and pipeline corridors) to include those materials removed from the site due to demolition, whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported. The table shall distinguish whether such excavations or fill is temporary or permanent and the amount of material to be imported or exported.
- H. Best Management Practices Plan** – The DESCPC shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading/demolition, project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to prevent wind and water erosion in areas that may have existing soil contamination. Treatment control BMPs used during construction should enable testing of groundwater and/or stormwater runoff prior to discharge to Humboldt Bay.
- I. Best Management Practices Narrative** – The DESCPC shall show the location (as identified in H above), timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading/demolition, during project element excavation and construction, final grading/stabilization, and post-construction. Separate BMP implementation schedules shall be provided for each project element for each phase of construction. The maintenance schedule

should include post-construction maintenance of structural control BMPs or a statement provided when such information will be available.

## **BACKGROUND**

### ***Hydrology & Flooding***

AFC Section 8.15.1.3 discusses the fact that the HBRP site is currently located within a 100-year flood zone as designated by the Federal Emergency Management Agency (FEMA). The proposed project would include site grading that would raise the base ground elevation of the HBRP site to 13 feet, thereby removing the site from the 100-year flood zone.

## **DATA REQUEST**

43. Please provide a discussion of any process, filings and PG&E's proposed schedule for meeting requirements in coordination with Humboldt County and FEMA to revise applicable flood maps and to formally obtain recognition that the proposed HBRP will not be constructed within the 100-year flood zone.
44. Please provide a discussion supporting the CEQA requirement that the proposed grading and drainage plans for HBRP will not exacerbate flood conditions for other developments in the vicinity of HBRP, including features of the existing Humboldt Bay Power Plant.

**Technical Area:** Transmission System Engineering  
**Author:** Ajoy Guha, PE, Mark Hesters

## **BACKGROUND**

Staff needs to determine the system reliability impacts of the project interconnection and to identify the facilities needed to support the reliable interconnection of the proposed HBRP. The interconnection must comply with the Utility Reliability and Planning Criteria, North American Electric Reliability Council (NERC) Planning Standards, NERC/Western Electricity Coordinating Council (WECC) Planning Standards, and California Independent System Operator (CA ISO) Planning Standards. In addition the California Environmental Quality Act (CEQA) requires the identification and description of the "Direct and indirect significant effects of the project on the environment." For determining compliance with planning and reliability standards and the identification of indirect or downstream transmission impacts, staff relies on the System Impact and Facilities Studies as well as review of these studies by the agencies responsible for insuring the interconnecting grid meets reliability standards, in this case, the PG&E and CA ISO. The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause the transmission to violate reliability requirements the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include the construction of downstream transmission facilities. CEQA requires the analysis of any downstream facilities for potential indirect impacts of the proposed project. Without a complete System Impact or Facility study, staff is not able to fulfill the CEQA requirement to identify the indirect effects of the proposed project.

After reviewing the System Impact Study (SIS) dated January 20, 2006 performed by PG&E and the response to Data Adequacy review of the AFC dated November, 2006, staff observes the following:

- The SIS indicates that the Humboldt-Eureka 60 kV line overloads under Category B contingencies. The study identifies reconductoring as the only means to mitigate the overloads on this transmission line. However, it is not clear if it has been identified as part of the PG&E Grid assessment process and as such has been approved by the CA ISO, or if reconductoring is required solely for the reliable interconnection of the HBRP.
- The SIS indicates that the Humboldt-Trinity 115 kV line overload can be mitigated by either reducing generation at the HBRP or by reconductoring the line but the particular mitigation measure has not been selected.
- The SIS does not identify mitigation measures for dynamic stability criteria violations.
- It is not clear if the installation of the 100 MVAR Static VAR Compensator (SVC) in replacement of the two synchronous condensers at Humboldt Substation is a PG&E planned transmission project with CA ISO approval or whether it is required only for the reliable interconnection of the HBRP.

## **DATA REQUEST**

45. Please provide the following with regard to the reconductoring of the Humboldt-Eureka 60 kV line:

- a. Confirm whether or not the reconductoring is a PG&E planned transmission project, and discuss how it is needed with or without the HBRP operating.
  - b. If the reconductoring is a planned PG&E Project, provide the project number, the expected on-line date, and whether or not the project has CA ISO approval.
  - c. If the reconductoring is not a planned PG&E project and is required for the reliable interconnection of the HBRP, then provide a project description and discussion of potential indirect environmental impacts.
46. The SIS identifies two options for mitigation of the Category B overloads on the Humboldt-Trinity 115 kV line, either reducing HBRP generation on the 115 kV system or reconductoring about 49 miles of the Humboldt-Trinity 115 kV line. Please identify the mitigation that has been selected, and if the reconductoring option is selected, provide a project description and discussion of potential indirect environmental impacts.
47. The Dynamic Stability study identified system stability and frequency criteria violations under Category B contingency conditions. Provide a mitigation plan for the dynamic violations.
48. The SIS identifies low voltage criteria violations and describes the replacement of the existing condensers at the Humboldt substation with a 100 MVAR Static VAR Compensator (SVC) as the mitigation for these violations. Please identify whether or not the SVC project is a planned PG&E project that is needed, whether or not the HBRP is operating. Provide the project number, the expected on-line date, and inform whether or not the project has CA ISO approval.

**Technical Area:** Waste Management  
**Author:** Michael Stephens

## **BACKGROUND**

A Phase I Environmental Site Assessment (ESA) was conducted at the proposed Humboldt project site that identified eight potential areas of concern that would require additional Phase II ESA investigation activities. Potential areas include a former Drum Storage Area, the exact location of which has not been identified, but was believed to be located southeast of the Oil Water Separators near the fireside waste bin, and likely west of the HBRP boundary. It is proposed in AFC Section 8.14.1.1.1 that contamination from the former Drum Storage Area, if any, would be identified and mitigated during construction. Remediation of hazardous waste during the construction phase of a project should only be done as a contingency measure, when previously unknown contamination is encountered during the normal course of construction activities, not as an investigation and remediation method in an area with a known environmental concern.

## **DATA REQUEST**

49. Please provide the Phase II site investigation report for the eight recognized areas of concern identified in the Phase I ESA, including the former Drum Storage Area.
50. In the event the investigation establishes that there are areas with Recognized Environmental Conditions that could be a risk to human health or the environment, please provide the following:
  - a. A work plan and schedule for remediation, testing to verify results of remediation, and any ongoing monitoring that may be needed; and
  - b. A discussion of the regulatory agencies that would be involved in review and approval of a work plan.

## **BACKGROUND**

A Historical Site Assessment (HSA) was conducted to identify areas that may require remediation due to elevated radiological contaminants from the operation of the Humboldt Bay Power Plant. The HSA identified that the proposed HBRP site has the potential to have been exposed to radiological contaminants, although not considered to be an area with a high risk for exposure. A detailed radiological survey will be conducted prior to construction for all potential radionuclide exposed areas. However, for our analysis, a more general radiological survey is needed.

## **DATA REQUEST**

51. Please provide a radiological survey of the proposed HBRP site, either as part of the HSA or the Phase II site investigation. The survey should follow EPA's "*Soil Screening Guidance for Radionuclides*".

**Technical Area:** Worker Safety/Fire Prevention  
**Author:** Dr. Alvin Greenberg

## **BACKGROUND**

Sections 2.2.12 and 8.16.2.4 of the AFC describes in a very limited manner the fire prevention, suppression, and response systems for the proposed power plant during the construction and operational phases. Emergency Medical Services (EMS) and Hazmat response is not covered at all. The AFC also does not describe in detail the fire prevention, suppression, and response systems that would be on-site or the off-site response capabilities of Humboldt Fire District #1 and the impacts the project would have on that fire district.

Staff needs more specific information on the fire prevention and response plans, including HazMat spill response and Emergency Medical Services (EMS) response during the Construction and Operational Phases.

## **DATA REQUEST**

52. Please provide specific information on the fire prevention and response methods planned for the Construction Phase and Operational Phase. This will include both fixed and portable systems and include response from the Humboldt Fire District #1.
53. Please provide a detailed description of the planned EMS and HazMat spill response capability for the Construction and Operational Phases.
54. Please provide a chart showing the locations of all Humboldt Fire District Stations, their distance from the project site in miles, the fire response time, the EMS response time, and the HazMat response time all estimated by the fire department. Because the Humboldt Fire District may not have a HazMat Incidence Team, please include distances and response times for the nearest HazMat Incidence Team to respond.
55. Please identify any impacts this project will have on the Humboldt Fire District and its ability to respond to a fire, HazMat spill, or EMS issue at this project site. Also identify any training, personnel, or equipment needs of the Humboldt Fire District.
56. Please describe in detail the HazMat training and equipment anticipated to be provided to on-site project personnel.

## **BACKGROUND**

Section 8.16.1 of the AFC describes the setting of the project site and indicates that it will be on property where an inactive nuclear power plant is located. The AFC further states that as part of an HSA, the power plant site has been somewhat characterized for the presence of radioactive wastes and that a detailed radiological survey will be conducted prior to construction. Staff needs to review materials describing the most recent past radiological survey in order to assess potential impacts to workers on the site.

## **DATA REQUEST**

57. Please provide the final HSA, and advise as to when it will be available. (Please note that if the Final HSA is provided in response to DR51, then DR57 will have been already satisfied.)