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DOCKET
06-AFC-7
DATE MAR 16 2007
RECD. MAR 16 2007

March 16, 2007

Mr. John Kessler
Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

Re: Humboldt Bay Repowering Project (06-AFC-07):
Responses to CEC Staff Data Requests 79-85 and Workshop Queries 5, 6, 8-11, and 13

Dear Mr. Kessler:

On behalf of the Pacific Gas and Electric Company, please find attached one original and 12 copies of a document titled *Responses to CEC Staff Data Requests 79-85 and Workshop Queries 5, 6, 8-11, and 13* filed in support of the Application for Certification for the Humboldt Bay Repowering Project (06-AFC-07).

If you have any questions about this matter, please contact me at (916) 286-0278 or Susan Strachan at (530) 220-7038.

Sincerely,

Douglas M. Davy, Ph.D.
AFC Project Manager

Attachment

cc: G. Lamberg
S. Strachan

Supplemental Filing

Responses to CEC Staff Data Requests 79-85 and Workshop Queries 5, 6, 8-11, and 13

In support of the

Application for Certification

for the

Humboldt Bay Repowering Project

Eureka, California

(06-AFC-7)

Submitted to the:

California Energy Commission

Submitted by:

Pacific Gas and Electric Company™

With Technical Assistance by:

CH2MHILL

Sacramento, California

March 2007

Contents

Introduction

Attached are Pacific Gas and Electric Company's (PG&E) responses to the California Energy Commission (CEC) Staff's data requests 79-85 and also responses to workshop queries, or additional informal questions that were raised during the Data Request Response Workshop that was held on February 1, 2007. PG&E provided responses to some of the 22 identified workshop queries in a previous submittal. This document provides additional responses, as identified below.

The workshop queries have been given unique workshop query (WSQ) numbers, listed by discipline and, within discipline, in the order in which they were discussed at the workshop. The WSQ responses appear in this document grouped with the data request responses that are for the same discipline. Because the workshop queries were not formally transmitted by the Staff in written form, they are listed here.

Air Quality

WSQ-5 Please provide an analysis of the construction impacts associated with creating and enhancing the wetlands proposed as part of the wetland mitigation plan for the HBRP.

WSQ-6 Please provide a status report on the analysis of significant sources for the PSD increments analysis.

Biological Resources

WSQ-8 Please identify additional mitigation for permanent impacts to freshwater marsh due to the California Coastal Commission's request to increase the mitigation ratio from 2:1 to 4:1 for this habitat type.

WSQ-9 Please provide a revised wetland mitigation map showing only wetlands under the potential jurisdiction of the U.S. Army Corps of Engineers (USACE).

WSQ-10 Please submit to the USACE the wetland data sheets for the three areas for which the USACE requested further wetland analysis during the wetland delineation verification on February 1.

Cultural Resources

WSQ-11 Please provide a cultural resources survey of the wetland mitigation land proposed for the HBRP.

Hazardous Materials Management

WSQ-13 Please coordinate with South Bay Elementary School regarding notification procedures to the school in the event of a hazardous materials incident at the HBRP.

New or revised graphics or tables are numbered in reference to the Data Request or Workshop Query number. For example, the first table used in response to Data Request 60

would be numbered Table DR60-1 (or Table WSQ9-1 for WSQ-9). The first figure used in response to Data Request 72 would be Figure DR72-1, and so on.

Additional tables, figures, or documents submitted in response to a data request (supporting data, stand-alone documents such as plans, folding graphics, etc.) are found at the end of a discipline-specific section and are not sequentially page-numbered consistently with the remainder of the document, though they may have their own internal page numbering system.

PG&E looks forward to working cooperatively with CEC Staff as the HBRP proceeds through the siting process. We trust that these responses address the Staff's questions and remain available to have any additional dialogue the Staff may require.

Air Quality (WSQ5-6, DR79)

Wetland construction air quality impacts

WSQ-5 *Please provide an analysis of the construction impacts associated with creating and enhancing the wetlands proposed as part of the wetland mitigation plan for the HBRP.*

Response: The proposed wetland mitigation areas are shown in Figure 2A of Attachment DR80-1 (see Biological Resources, later in this document). The mitigation plans for these areas are discussed in Section 8.2.4.6 of the AFC. The mitigation activities are proposed to be carried out in two stages: (1) during initial construction of the new access road, and (2) after the remote parking area is no longer needed for parking and a portion of this area can be used for wetland mitigation. Because the mitigation will be carried out within areas that are used during project construction, most mitigation activities will not occur simultaneously with construction activities.

The wetland restoration and enhancement projects that will be undertaken concurrent with construction of the new access road are in areas MIT-2 MIT-3, MIT-4 and MIT-5 (see Attachment DR80-1). For area MIT-2, the applicant will pull out existing fill and restore approximately 1.03 acres of wetland to a depth of approximately three feet. These restoration activities will involve heavy equipment and earthmoving. In areas MIT-3, MIT-4 and MIT-5, the applicant will remove a non-native plant that encroaches on native vegetation areas on approximately 3.96 acres of brackish salt marsh. The restoration in MIT-3 MIT-4 and MIT-5 will be performed manually so it will not involve heavy equipment and will not generate exhaust emissions or fugitive dust and will not be addressed further in this analysis.

The projects that will be undertaken after project construction are located in areas MIT-1, REST-1, REST-2 and REST-3 (see Tables 8.1-12 and 8.1-13 of the AFC). In area MIT-1, the applicant will create a brackish marsh by removing the parking lot asphalt and fill on 0.61 acres. In the areas to be restored after their use as temporary construction access and laydown areas, geotech fabric and gravel will be removed and shallow swales and/or depressions will be created for revegetation. The acreage affected is approximately 2.58 acres. Total post-construction restoration acreage is 3.19 acres.

Because specific equipment loadings and operational schedules have not yet been prepared for the mitigation plan, detailed calculations of potential construction emissions cannot be developed. Construction emissions have been estimated using the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines. Chapter 3, Section 3.3 of the Guidelines (Evaluating Construction Emissions) presents emission factors for uncontrolled PM_{10} emissions from earth-moving activities and exhaust emission factors for emissions from heavy- and light-duty construction equipment. These factors can be used with adjustments for control efficiencies to estimate emissions from creation of the wetland mitigation areas.

In assessing control efficiencies, we assume that the same mitigation measures will be used for the wetland mitigation projects as those proposed in the AFC for project construction. As in the construction impacts section of the AFC (Appendix 8.1D), a control efficiency of 94% is used to calculate fugitive dust emissions from the earth-moving activities. For the construction equipment, since the CEQA document was published in 1996 it is assumed that the exhaust emission factors reflect Tier 0, or uncontrolled equipment. The SCAQMD CEQA guidelines provide comparisons of uncontrolled to tiered emission rates for off-road engines at http://www.aqmd.gov/ceqa/ handbook/mitigation/offroad/ MM_offroad.html, and the factors in Table II-C for equipment in the range of 175-299 hp are used to adjust the uncontrolled emission rates to reflect Tier 2 engine emission rates. Emission factors and emissions calculations are shown in Attachment WSQ5-1.

Table WSQ5-1 below summarizes the estimated emissions during wetland mitigation construction activities. Although the calculation technique used to estimate these emissions are conservatively overpredictive, emissions during wetland mitigation activities are expected to be much lower than emissions during the construction phase of the project.

TABLE WSQ5-1
Emissions During Wetland Mitigation Activities

Activities	NOx	SOx	CO	VOC	PM_{10}	$PM_{2.5}$
Preconstruction, lb/day	42.8	1.4	69.8	4.6	2.2	2.1
Preconstruction, tons	0.4	0.01	0.7	0.05	0.02	0.02
Postconstruction, lb/day	42.8	1.4	69.8	4.6	2.5	2.3
Postconstruction, tons	0.4	0.01	0.7	0.05	0.03	0.02

PSD Increments Analysis

WSQ-6 *Please provide a status report on the analysis of significant sources for the PSD increments analysis.*

Response: The PSD increments analysis report, as submitted to the North Coast Unified Air Quality Management District on March 12, 2007, is provided as Attachment WSQ6-1.

Stack Modeling Protocol

79. Please provide additional support for the decision to model the 10 stacks as two groups of 5 and of using all 10 stacks running at 50% load as a "worst-case" scenario. Discuss how this modeling addresses plume rise and the impact on ground level concentrations at off-site receptors and include a sensitivity analysis of various combinations of engines and various loads.

Response: The 10 stacks were modeled as two groups of 5 to account for the enhancement of buoyant plume rise that occurs when plumes are emitted in close proximity to one another. This procedure has been used in numerous previous CEC projects, including Crocket Cogeneration (1992), Inland Empire Energy Center (2001), and Otay Mesa Generating Project (1999). The plume rise enhancement effect is discussed by Trinity Consultants in their "Practical Guide to Dispersion Modeling" course materials and in the EPA guideline BLP model User Guide. The Air Resources Board identified an inconsistency

in the way equivalent plume exhaust parameters were calculated using the Trinity method. After consultation with Bruce Turner and Richard Schulze of Trinity Consultants, the calculation of equivalent plume characteristics was revised and is now consistent with ARB recommendations. It should be noted that this inconsistency only affected operating scenarios in which engines within a single-stack group operated at different loads, and thus affected only the previously reported 24-hour average PM_{10} results for 100 percent diesel fuel operation.

The general procedure for determining the worst-case operating conditions by engine load and ambient temperature was described in Section 8.1.2.6.3 of the AFC. This procedure was used to identify the engine load conditions that would be expected to produce the highest modeled impacts for various averaging periods. As discussed in Appendix 8.1C, for the screening health risk assessment, the exhaust characteristics for the highest full-load annual average unit impact from the screening analysis, Case 1G, were used to model cancer risks from the engines. Consistent with this assumption, it was assumed that when operating on Diesel fuel, the engines would be operated at their full-load maximum hourly DPM emission rate of 5.56 lb/hr. It is expected that all of the engines will operate, on average, at or near full load on an annual average basis.

At the request of the CEC staff, we examined a variety of combinations of part-load operating cases for 24-hour average PM_{10} during natural gas and Diesel firing to evaluate impacts with fewer than 10 engines in operation. For natural gas operation, 12 cases were evaluated, as shown in Table DR79-1. The maximum modeled 24-hour average PM_{10} concentration occurred when all ten engines operate at 50 percent load. This had previously been determined to be the worst case for natural gas operation. The revised modeled impacts, based on highest second high results in accordance with EPA guidance, are lower than the results previously reported for 100 percent natural gas firing.

Nineteen combinations of engines and operating loads were modeled to evaluate worst case 24-hour average PM_{10} impacts during Diesel firing. Table DR79-2 shows the engine-load combinations evaluated for the sensitivity analysis and provides the revised results of the highest second high modeled 24-hour average PM_{10} impacts. The maximum impact of 28.9 $\mu g/m^3$ was found to occur when one engine in each group operates at 50% load for 24 hours. Although this impact is higher than the maximum impact previous identified, it remains below both the Class II increment of 30 $\mu g/m^3$ and the new federal standard of 35 $\mu g/m^3$. Both AERMOD and CTSCREEN were used as appropriate to obtain these results. Full modeling results, based on actual emissions and five years of meteorological data for the worst-case operating conditions, are provided on a CD-ROM provided to CEC Staff under separate cover.

Table DR79-1
Revised Modeling Results, 24-hour Average PM10 During Natural Gas Firing

	Engine Load										AERMOD Impact (Highest 2nd High) Full Grid (µg/m3)					
	Stack1					Stack2										
	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	2001	2002	2003	2004	2005	Maximum
Scenario 1	100%					100%					8.21	4.55	3.67	5.47	4.20	8.21
Scenario 2	100%	100%	100%			100%	100%	100%			10.83	9.69	7.14	10.55	7.90	10.83
Scenario 3	100%	100%	100%	100%	100%	100%	100%				10.70	8.64	6.75	9.76	7.37	10.70
Scenario 4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	13.61	11.54	9.92	12.42	10.25	13.61
Scenario 5	100%					50%					11.73	6.22	5.51	7.24	5.31	11.73
Scenario 6	100%	100%	100%			50%	50%	50%			12.57	10.28	7.25	10.93	8.33	12.57
Scenario 7	100%	100%	100%	100%	100%	50%	50%				10.63	8.24	7.10	10.43	7.52	10.63
Scenario 8	100%	100%	100%	100%	100%	50%	50%	50%	50%	50%	15.85	13.57	10.55	15.00	11.49	15.85
Scenario 9	50%					50%					13.40	8.52	7.30	10.57	8.68	13.40
Scenario 10	50%	50%	50%			50%	50%	50%			14.05	10.97	9.01	12.26	8.89	14.05
Scenario 11	50%	50%	50%	50%	50%	50%	50%				17.14	10.83	9.05	11.77	9.51	17.14
Scenario 12	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	17.82	15.69	12.51	17.48	12.92	17.82
Scenario 13	50%	50%	50%	50%		50%	50%				16.14	10.21	8.34	11.48	8.56	16.14
Scenario 14	50%	50%	50%			50%	50%				15.16	9.29	8.26	10.52	7.91	15.16
Scenario 15	50%	50%				50%	50%				14.34	8.57	7.49	9.64	7.37	14.34

Table DR79-2
Revised Modeling Results, 24-hour Average PM10 During Liquid Fuel Firing

	Engine Load										AERMOD Impact (Highest 2nd High) Full Grid (µg/m3)									
	Stack 1					Stack2					2001		2002		2003		2004		2005	
Scenario	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	Conc	Terrain	Conc	Terrain	Conc	Terrain	Conc	Terrain	Conc	Terrain
1	100%					100%					15.6	FLAT	9.8	CPLX	7.9	CPLX	11.7	CPLX	8.5	CPLX
2	100%	100%	100%			100%	100%	100%			23.0	CPLX	20.1	CPLX	15.9	CPLX	22.3	CPLX	16.7	CPLX
3	100%	100%	100%	100%	100%	100%	100%				22.6	CPLX	18.2	CPLX	14.3	CPLX	21.0	CPLX	15.5	CPLX
4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	27.9	CPLX	23.4	CPLX	21.0	CPLX	25.9	CPLX	21.1	CPLX
5	100%					50%					23.9	FLAT	12.2	FLAT	10.5	FLAT	15.2	FLAT	9.5	FLAT
6	100%	100%	100%			75%	50%	50%			25.7	CPLX	21.7	CPLX	16.3	CPLX	23.1	CPLX	17.4	CPLX
7	100%	100%	100%	100%	100%	50%	50%				22.4	CPLX	17.0	CPLX	15.1	CPLX	21.3	CPLX	15.8	CPLX
8	100%	100%	100%	100%	100%	75%	75%	75%	50%	50%	32.0	CPLX	27.6	CPLX	22.4	CPLX	29.2	CPLX	23.9	CPLX
9	50%					50%					28.9	FLAT	18.2	FLAT	16.0	FLAT	22.3	FLAT	18.6	FLAT
10	75%	75%	50%			75%	75%	50%			29.0	CPLX	22.6	CPLX	16.9	CPLX	25.3	CPLX	17.8	CPLX
11	75%	75%	75%	75%	75%	50%	50%				25.4	CPLX	20.3	CPLX	17.2	CPLX	26.1	CPLX	18.3	CPLX
12	75%	75%	75%	75%	75%	75%	75%	75%	50%	50%	34.5	CPLX	30.5	CPLX	24.0	CPLX	33.5	CPLX	25.9	CPLX
13	75%	75%	75%	75%	75%	75%	50%	50%			29.5	CPLX	25.1	CPLX	19.2	CPLX	28.4	CPLX	20.7	CPLX
14	75%	75%	75%	75%	75%	75%	75%	50%	50%		32.8	CPLX	28.6	CPLX	21.7	CPLX	31.7	CPLX	23.9	CPLX
15	75%	75%	75%	75%		75%	50%	50%			28.9	CPLX	24.8	CPLX	19.0	CPLX	26.5	CPLX	19.9	CPLX
16	75%	75%				50%	50%				25.4	FLAT	17.7	CPLX	15.5	CPLX	19.8	CPLX	14.9	CPLX
17	75%					50%					26.5	FLAT	14.7	FLAT	13.1	FLAT	16.7	FLAT	13.3	FLAT
18	75%	75%	75%			50%	50%				23.9	CPLX	19.4	CPLX	15.8	CPLX	21.5	CPLX	16.3	CPLX
19	75%	75%	75%	75%		50%	50%				24.9	CPLX	19.9	CPLX	16.5	CPLX	22.0	CPLX	17.9	CPLX

Table DR79-2
Revised Modeling Results, 24-hour Average PM10 During Liquid Fuel Firing

	Engine Load										AERMOD Impact (Highest 2nd High) Flat Terrain Grid (µg/m3)					CTSCREEN for Complex Terrain	**Overall 2nd highest impact**
	Stack 1					Stack2											
Scenario	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	2001	2002	2003	2004	2005		
1	100%					100%					15.55	8.06	6.89	10.03	6.22	Not run	**15.55**
2	100%	100%	100%			100%	100%	100%			8.62	5.56	5.24	4.51	5.18	Not run	**23.0**
3	100%	100%	100%	100%	100%	100%	100%				3.96	5.65	5.75	4.66	5.15	Not run	**22.6**
4	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	3.98	6.04	5.86	4.92	5.28	12.7	**12.7**
5	100%					50%					23.85	12.22	10.55	15.16	9.51	Not run	**23.85**
6	100%	100%	100%			75%	50%	50%			11.57	7.13	6.62	6.12	7.00	11.64	**11.64**
7	100%	100%	100%	100%	100%	50%	50%				11.68	7.14	6.89	6.59	6.68	Not run	**22.4**
8	100%	100%	100%	100%	100%	75%	75%	75%	50%	50%	4.63	7.25	7.00	5.90	6.28	14.28	**14.28**
9	50%					50%					28.86	18.22	16.00	22.28	18.61	Not run	**28.86**
10	75%	75%	50%			75%	75%	50%			23.21	7.76	8.07	11.34	7.70	12.4	**23.21**
11	75%	75%	75%	75%	75%	50%	50%				16.32	8.46	7.72	7.41	7.69	12.25	**16.32**
12	75%	75%	75%	75%	75%	75%	75%	75%	50%	50%	9.53	8.02	7.63	6.51	7.48	15.34	**15.34**
13	75%	75%	75%	75%	75%	75%	50%	50%			11.94	8.16	7.63	6.85	7.76	13.97	**13.97**
14	75%	75%	75%	75%	75%	75%	75%	50%	50%		9.88	8.01	7.66	6.36	7.32	14.72	**14.72**
15	75%	75%	75%	75%		75%	50%	50%			14.56	8.03	7.57	6.93	7.88	14.98	**14.98**
16	75%	75%				50%	50%				25.35	8.77	9.48	12.34	7.48	Not run	**25.4**
17	75%					50%					26.50	14.74	13.12	16.66	13.29	Not run	**26.5**
18	75%	75%	75%			50%	50%				23.84	8.24	8.93	10.02	7.72	Not run	**23.9**
19	75%	75%	75%	75%		50%	50%				18.85	8.33	7.75	8.55	7.81	12.17	**18.85**

Attachment WSQ5-1

Wetland Impacts Analysis Emission Calculations

Attachment WSQ-5A
Calculation of Emissions from Wetland Mitigation
HBRP

Calculation of Controlled Emission Rates

Activity	Pollutant	Uncontrolled Emission Factor (1)	Control Efficiency (2)	Controlled Emission Factor	Emission Factor Units
Earthmoving	PM10	51	94%	3.06	lb/acre/day
	PM2.5	27.9	94%	1.68	lb/acre/day
Vehicle Exhaust	NOx	42.4	39%	25.86	gm/cubic yd
	SOx	4.6	81%	0.86	gm/cubic yd
	CO	138	69%	42.21	gm/cubic yd
	ROG	9.2	70%	2.76	gm/cubic yd
	PM10	2.2	45%	1.21	gm/cubic yd
	PM2.5	2.2	45%	1.21	gm/cubic yd

Notes:

1. Earthmoving PM10: BAAQMD CEQA guidelines, p. 28.
   Earthmoving PM2.5: Assume that PM2.5 is
   Exhaust emissions: BAAQMD CEQA guidelines, Table 7, p. 29.
2. Earthmoving: See notes to fugitive dust emissions, Appendix 8.1D.
   Exhaust emissions: SCAQMD CEQA guidelines, http://www.aqmd.gov/ceqa/handbook/mitigation/offroad/ MM_offroad.html, Table II.
   Exhaust emissions, SOx: Calculated stoichiometrically, assuming 0.05% sulfur in fuel and 0.27 gallons of fuel per cubic yard of earth moved (BAAQMD CEQA guidelines, p. 29).
   Exhaust emissions, CO: Reduction calculated from comparison of Tier 1 and Tier 3 CO standards (8.5 g/bhp-hr vs. 2.6 g/bhp-hr)

Attachment WSQ-5B
Calculation of Emissions from Wetland Mitigation
HBRP

Calculation of Emissions

Mitigation Area	Acres	Depth, ft	Cubic Yards Disturbed	Excavation Rate, yd3/day	Duration of Mitigation Activity, days	Emissions From Mitigation Activity, lb/day						Total Emissions From Mitigation Activity					
						NOx	SOx	CO	ROG	PM10	PM2.5	NOx	SOx	CO	ROG	PM10	PM2.5
MIT-2	1.03	3	14,955.6	750	19.9							852.8	28.3	1391.8	91.0	43.0	41.6
Total, Preconstruction	1.0		14,955.6		19.9	42.8 lb/day	1.4 lb/day	69.8 lb/day	4.6 lb/day	2.2 lb/day	2.1 lb/day	852.8 lb 0.4 tons	28.3 lb 0.01 tons	1391.8 lb 0.7 tons	91.0 lb 0.05 tons	43.0 lb 0.02 tons	41.6 lb 0.02 tons
MIT-1	0.61	1	2,952.4	750	3.9							168.3	5.6	274.7	18.0	9.7	8.9
REST-1	1.19	1	5,759.6	750	7.7							328.4	10.9	536.0	35.0	19.0	17.4
REST-2	0.45	1	2,178.0	750	2.9							124.2	4.1	202.7	13.3	7.2	6.6
REST-3	0.93	1	4,501.2	750	6.0							256.7	8.5	418.9	27.4	14.9	13.6
Total, Postconstruction	3.18		15,391.2		20.5	42.8 lb/day	1.4 lb/day	69.8 lb/day	4.6 lb/day	2.5 lb/day	2.3 lb/day	877.6 lb 0.4 tons	29.1 lb 0.01 tons	1432.3 lb 0.7 tons	93.7 lb 0.05 tons	50.8 lb 0.03 tons	46.4 lb 0.02 tons

Attachment WSQ6-1

PSD Increments Analysis

sierra
research

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March 12, 2007

Richard L. Martin, Jr.
Air Pollution Control Officer
North Coast Unified Air Quality Management District
2300 Myrtle Ave
Eureka, CA 95501

Re: PM_{10} Increments Analysis
PG&E's Humboldt Bay Repowering Project

Dear Mr. Martin:

Enclosed please find the PM_{10} increments analysis for the proposed PG&E Humboldt Bay Repowering Project (HBRP). The modeling files are provided on the enclosed CD. This increments analysis has been prepared in accordance with our discussions at the February 1, 2007 workshop, and is based on the information provided by the District staff in support of this effort.

As you know, we have been engaged in discussions with the staff of the Air Resources Board regarding the calculation of combined plume stack parameters for some operating conditions for the proposed project, and with the staff of the California Energy Commission regarding the sensitivity of the 24-hour average modeling to assumptions regarding engine load. The resolution of these issues will require additional modeling of the 24-hour average PM_{10} impacts from the project. However, we do not expect that the revised modeling will affect the conclusions of this analysis. This is because the modeling performed for the increments analysis demonstrates that the 24-hour average PM_{10} impacts of other potentially increment-consuming sources in the District are not significant—that is, they do not exceed 5 $\mu g/m^3$—in or near the area where the proposed project has significant 24-hour average impacts. The modeling of annual PM_{10} impacts, and thus the enclosed assessment of the annual PM_{10} increment, is not affected.

We appreciate the assistance of the District staff in providing the extensive amount of information needed for this analysis.

If you have any questions or wish to discuss this analysis further, please do not hesitate to call.

Sincerely,

Gary Rubenstein

enclosures

cc: Jason Davis, NCUAQMD
Brian Wilson, NCUAQMD
Michael Tollstrup, ARB
Kitty Howard, ARB
Simona Altman, ARB
Greg Lamberg, PG&E
Scott Galati, Galati & Blek
Susan Strachan

Class II Increments Analysis

Humboldt Bay Repowering Project

March 2007

This analysis addresses the potential impact on applicable federal Class II increments from the Humboldt Bay Repowering Project (HBRP). The first section discusses the requirements for the increments analysis; the second section describes the methodology used to evaluate the project's impact on applicable increments; the third section discusses the projects and emissions sources identified that would consume increment in the project's impact areas; and the final sections discuss the modeling approach and results of the analysis.

Overview of Requirements for Increments Analysis

The federal Prevention of Significant Deterioration (PSD) program is intended to ensure that economic growth in areas with good air quality occurs without causing the deterioration of that air quality to unhealthful levels. The PSD program contains a number of requirements that apply to new or modified sources of air pollution that are located in clean air areas. In Eureka, the North Coast Unified Air Quality Management District (NCUAQMD) has been delegated authority by the EPA to administer the PSD program for NO_2, SO_2, CO, and PM_{10}, the pollutants for which federal ambient standards are currently being attained. These PSD program requirements, applied on a pollutant-specific basis, include conducting an increments analysis to demonstrate that no increments will be exceeded as a result of the proposed new or modified source.

Increments are the maximum increases in concentration that are allowed to occur above baseline concentrations for each pollutant for which an increment has been established. Currently, increments have been established for NO_2, SO_2, and PM_{10}. These allowable increments are shown in the table below.

Class II Increments	
Pollutant/ Averaging Time	**Allowable Class II Increments ($\mu g/m^3$)**
NO_2 annual	25
SO_2 3-hour	512
24-hour	91
annual	20
PM_{10} 24-hour	30
annual	17

The baseline concentrations are defined for each pollutant and averaging time, and are the ambient concentrations of each pollutant existing at the time that the first complete PSD application affecting the area is submitted. Federal regulations establish the dates after which major and minor source impacts on increment consumption need to be considered in an increments analysis, as follows:

Major source baseline date: The date after which actual emissions associated with modifications at a major stationary source affect the available increment.

Trigger date: The date after which the minor source baseline date may be established.

Minor source baseline date: The earliest date after the trigger date on which a complete PSD application is received by the reviewing agency. After this date, actual emissions changes (including increases in throughput or production that do not require permit changes) from all sources (major and minor stationary sources, area sources and mobile sources) affect the available increment.

NCUAQMD regulations require that before an Authority to Construct can be issued for a facility projecting significant increases in NO_2, SO_2, or PM_{10}, the applicant must perform an increments analysis to demonstrate that the project will not cause an exceedance of the applicable increment. The HBRP is expected to result in a net reduction in NOx emissions and a minor increase in SO_2 emissions; therefore, no NO_2 or SO_2 increments analyses are required. However, the project is expected to result in net increases in PM_{10} emissions that are in excess of the applicable significance level (15 tons per year) at the stationary source. Therefore, increments analyses are required for this pollutant.

For PM_{10} in the NCUAQMD, the PM_{10} baseline and trigger dates are as follows:

PM_{10} Increment Baseline and Trigger Dates in the NCUAQMD	
Major Source Baseline Date	January 6, 1975
Trigger Date	August 7, 1977
Minor Source Baseline Date	October 20, 2006

The NCUAQMD determined that no complete PSD permit application had been received for a major source or significant modification for PM_{10} prior to the HBRP application, so the minor source baseline date is the date the HBRP application was determined to be complete. Therefore, the ambient impact of all changes in PM_{10} emissions since January 6, 1975, for major modifications to major sources that affect the applicable impact areas must be considered in the PM_{10} increments analysis.

Methodology

Establishing the Impact Area

The first step in the increments analysis is establishing the impact area for each pollutant and averaging period. The impact area includes the area where the emissions from the new source will cause a significant ambient impact. Applicable significant ambient impact levels for PM_{10} are defined in NCUAQMD and federal regulations as follows:

PM_{10} Significant Impact Levels	
Averaging Period	**Ambient Significant Level, µg/m^3**
24 hour	5
annual	1

The impact area is a circular area with a radius extending from the source to the most distant point where modeling indicates that the ambient impact will be significant.

As described in the air quality modeling analyses contained in Section 8.1 of the AFC, PM_{10} emissions from the proposed project were modeled using the appropriate 24-hour and annual emission rates, the AERMOD (with downwash) and CTSCREEN models (for impacts in simple and complex terrain, respectively), and five years of meteorological data from Woodley Island. Based on these modeling analyses, a region of approximately 12 km in radius surrounding the project site was identified as the area in which the proposed project could have a "significant" air quality impact on ambient PM_{10} levels.

Identifying Sources to be Included in the Increments Analysis

Once the impact area is established, sources consuming increment within the impact area must be identified and emission inventories developed for those sources. The sources include not only those located within the impact area, but also those located outside the impact area whose emissions could contribute to ambient impacts there. These inventories must account for the change in emissions between the PM_{10} major source baseline date and the date of the permit application for the new source or modification. Based on these inventories, the changes in emissions are modeled to determine the amount of increment consumed for each pollutant. These sources would include any that have had significant permitted increases in PM_{10} (greater than 15 tons per year) since the PM_{10} major source baseline date (January 6, 1975). Because District permit records make it difficult to identify sources and permit transactions that meet this criterion, it was decided, following consultation with the District and ARB staff, to simplify the analysis and make it overly conservative by evaluating the actual impacts of all major sources of PM_{10} within 50 km of the project's significant impact area. This approach assumes that none of the sources were in operation in 1975, so that all emissions from these sources are increment-consuming, and thereby overestimates potential increment consumption.

To ensure that other emission sources that might have significant impacts on the PM_{10} impact areas in conjunction with the HBRP were identified, Sierra Research requested from District staff a list of major sources of PM_{10}, with sufficient stack parameters to allow modeling of the sources' ambient impacts.

Data Used in the Increments Analysis

The data provided by the District were not in the form needed to be used directly in the increments analysis. In many cases, the data were not sufficiently detailed to be used as input to a modeling analysis. Often, too, the available information was incomplete, so that some assumptions needed to be made about source operations. Finally, so many sources were identified that an initial screening procedure was used for all point sources to reduce the scope and complexity of the final modeling runs. Following is a discussion

of the data received and the procedure used to prepare the data for the final modeling runs.

Nine facilities within 62 km of HBRP were identified by the District staff as having potentially significant PM_{10} impacts. Five of the sources were sawmills, two were independent electric power generators, one was a pulp mill, and one was a reconstituted wood product manufacturing plant. PM_{10} emissions sources at all of the plants except the pulp mill consisted mainly of biomass-fired boilers and dust collectors. The District staff provided relevant excerpts from permits and source test reports for the facilities, which contained equipment ratings, permitted emission limits, some stack parameters, and PM test results for some of the sources. A HARP database in Microsoft Access format was also provided, and some additional stack parameters could be obtained from that database. A summary of the data provided for each facility is included as Attachment 1. Attachment 1 also provides a detailed discussion of the assumptions made where there were missing and incomplete source data. Because current annual emission inventory for most sources was not available from the District, the most recent available inventory, ARB's 2004 inventory for the county, was used to represent current annual emissions when more recent data were not provided.[1,2] A copy of the 2004 inventory is included as Attachment 2. The inventory presents annual emissions for each facility as a total and does not provide unit-specific emissions.

Initial Screening Modeling Analysis

For the four facilities that were more than 5 km from the significant impact area (more than 17 km from HBRP), an initial screening analysis was used to determine whether they could be eliminated from the more detailed modeling analysis. This screening analysis used the SCREEN3 model, with default screening meteorology, to evaluate worst-case 1-hour average impacts in the HBRP significant impact area. The 1-hour average modeled impacts were converted to 24-hour average and annual average impacts using the EPA default conversion factors of 0.4 and 0.1, respectively.

For the screening analysis, all emissions from multiple similar sources were modeled as being emitted by a single source—that is, all dust collector emissions from a single dust collector and all boiler emissions from a single boiler stack. A single representative stack was selected using the procedure described in EPA's screening modeling guidance.[3] Under this procedure, the parameter M is calculated for each similar stack.

$$M = (Hs * V * Ts) / Q$$

where: M = Merged Stack Parameter

Hs = Stack Height (m)

$V = (\pi/4) * D_s^2 * Vs$ = stack gas volumetric flow (m3/s)

Ds = Inside Stack Diameter (m)

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[1] Inventory data obtained from http://www.arb.ca.gov/app/emsinv/facinfo/facinfo.php.

[2] A 2005 inventory for Fairhaven Power was provided, so the emissions data for that facility are from 2005.

[3] USEPA, "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources," 1992.

Vs = Stack Gas Exit Velocity (m/s)

Ts = Stack Gas Exit Temp (K)

Q = Pollutant Emission Rate (g/s)

The stack that has the lowest value of M is used as a 'representative' stack. Then the sum of the emissions from all stacks is assumed to be emitted from the representative stack.

Four facilities were modeled using this approach: Simpson Korbel, Ultrapower, PALCO, and Humboldt Flakeboard. The calculation of M for each stack and the identification of the representative stack at each facility are shown in Attachment 3. The results of the screening analysis are summarized in the following table. Sources with modeled impacts within the significant impact area that were well below the significant impact levels would not contribute to violations of the increment and were eliminated from more detailed modeling.

Summary Results from SCREEN3 Modeling Analysis of Distant Sources

Facility/Location	Distance from HBRP, km	PM_{10} Emissions Source	PM_{10} Impacts at Boundary of Significant Impact Area, $\mu g/m^3$	
			24-hr average	annual average
PSD Class II Significance Impact Level	--	--	5.0	1.0
Humboldt Flakeboard Panels, Arcata	17.05	Boiler	0.8	0.0
		Dryers	1.8	0.1
		Total	2.5	0.1
Ultrapower, Blue Lake	24.25	Boiler	0.4	0.1
Simpson Korbel	26.21	Package Boiler	0.2	0.1
		Boiler	1.3	0.3
		Dust Collectors	0.9	0.2
		Total	2.4	0.6
PALCO, Scotia	30.66	Boiler	0.6	<0.1
		Boiler	0.6	<0.1
		Boiler	0.6	<0.1
		Dust Collectors	4.5	0.4
		Total	6.2	0.5

The screening modeling performed for these facilities is extremely conservative and overpredictive for several reasons:

- The representative stack technique is designed to select the stack with the worst dispersion parameters so that, for screening purposes, the maximum modeled concentration is purposely overpredicted.

- The SCREEN3 model uses worst-case screening meteorological data instead of actual representative meteorological data to conservatively overpredict maximum modeled concentrations, especially for longer-term averaging periods.

Based on the results of the screening-level modeling described above, only one of the 4 facilities located more than 5 km from the HBRP significant impact area was identified as having potentially significant PM_{10} impacts within the HBRP significant impact area. The emission rates and stack parameters used for modeling this source, along with the five facilities that are closer to HBRP, are shown in Attachment 4. The locations of the facilities are shown in Figure 1.

Refined Modeling Analysis

The sources identified in Attachment 4 were modeled in combination with the HBRP sources using AERMOD for receptors within the HBRP significant impact area. Woodley Island meteorological data for 2004 were used, since that year of meteorological data produced the highest maximum modeled 24-hour average PM_{10} impacts for the proposed project. The existing Humboldt Bay Power Plant units were modeled with negative emission rates to account for the elimination of those emissions when the units shut down. The overall maximum annual PM_{10} impact is 3.2 $\mu g/m^3$, which is well below Class II annual average PM_{10} increment of 17 $\mu g/m^3$.

Figure 2 shows the locations of significant 24-hour average impacts for each modeled source. This diagram demonstrates that none of the other sources has a significant impact in the area where the proposed project has a significant 24-hour average PM_{10} impact. In other words, the modeled ambient 24-hour average PM_{10} impact of other increment-consuming sources does not exceed 5 $\mu g/m^3$ in the locations in which the HBRP modeled PM_{10} impacts exceed 5 $\mu g/m^3$. Conversely, the impact of HBRP is less than 5 $\mu g/m^3$ in any location in which the modeled PM_{10} impact of any other increment consuming source exceeds 5 $\mu g/m^3$. Therefore, the proposed project, in combination with other potentially increment-consuming sources, will not cause or contribute to the violation of the PM_{10} Class II increments.

The results of the modeling analysis are summarized in the following table.

Summary of Modeling Results for PM_{10} Increments Analysis		
Sources Included	Maximum Modeled PM_{10} Impact, $\mu g/m^3$	
	24-hr average	annual average
HBRP Alone	21.7	1.4
HBRP and other major PM_{10} sources within 50 km of significant impact area	>30[4]	3.2
Class II PM_{10} Increment	30	17

[4] The contribution from HBRP is less than significant in any area where the increment is exceeded. See Figure 2.

Figure 1

Locations of the PM_{10} Increment-Consuming Sources

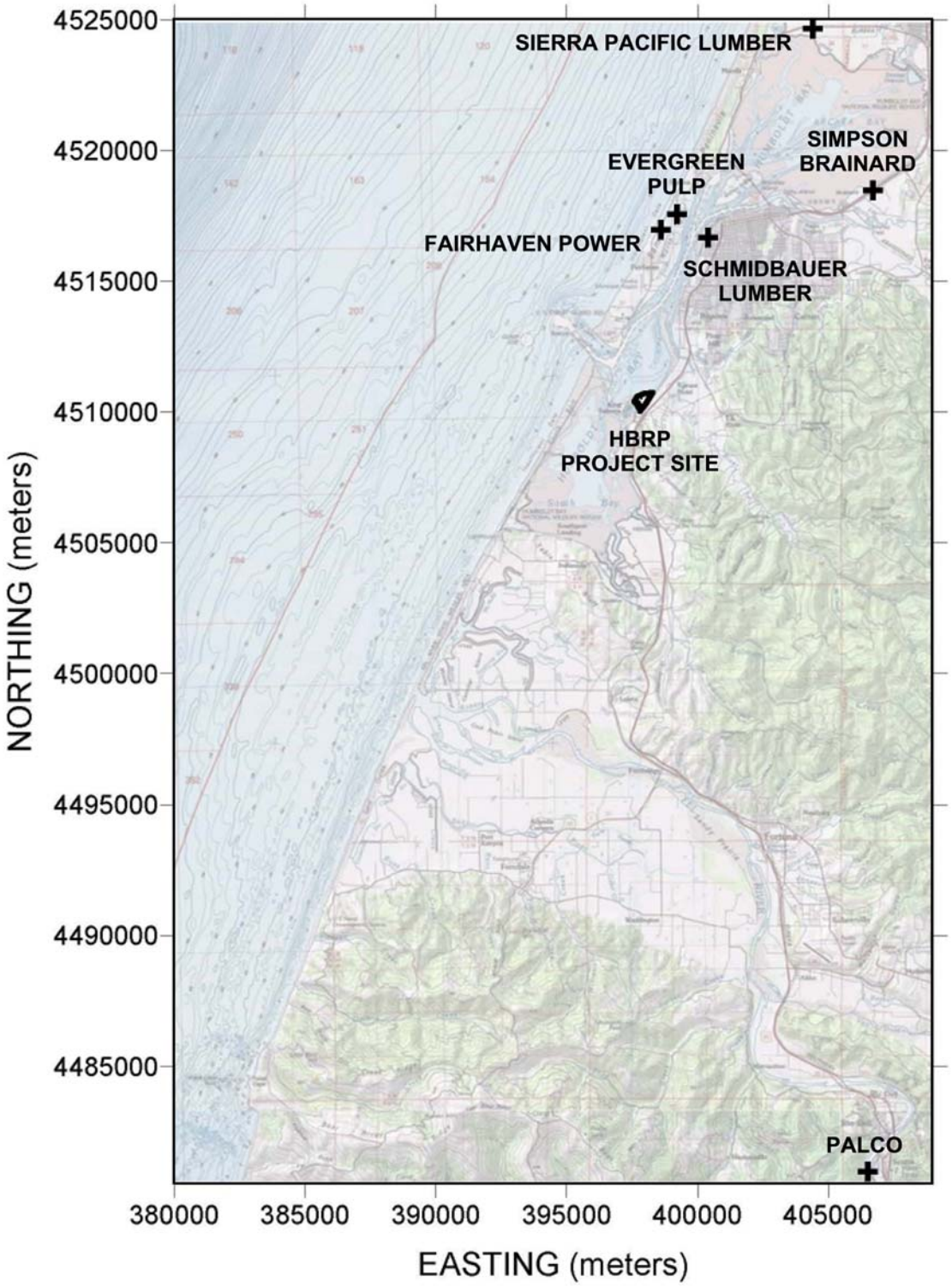
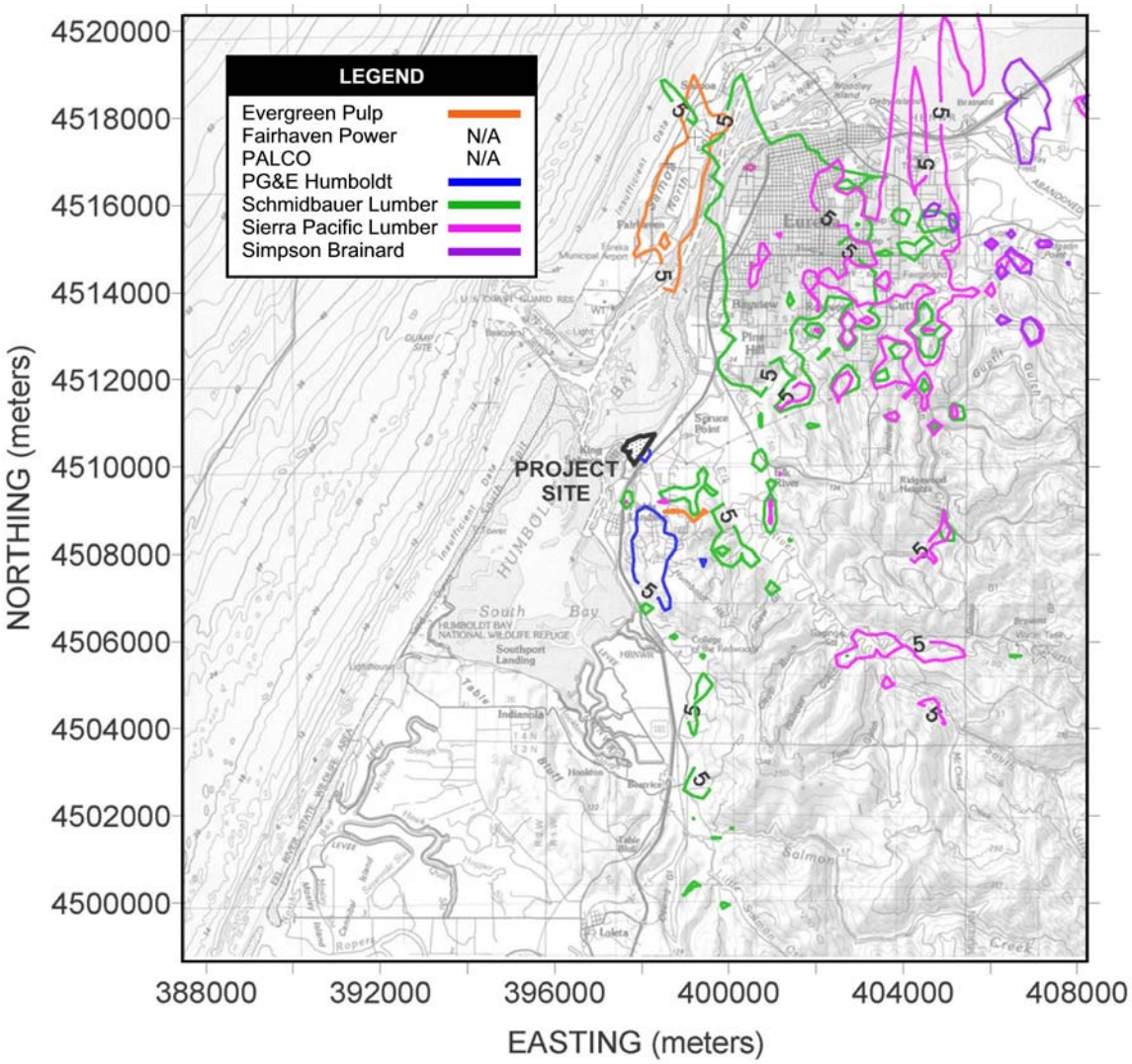


Figure 2

24-Hour Average PM_{10} Significant Impact Area for Each Increment-Consuming Source



Note: N/A means that the maximum modeled 24-hour average impacts from Fairhaven Power and PALCO facilities are below 5 µg/m³ within the modeling domain.

Attachment 1

Source and Emissions Data Used in the Increments Analysis

Facility	Evergreen Pulp, Inc. Samoa
Distance from HBRP	8.38 km
Distance from the Significant Impact Area	within impact area
Emissions Sources	lime kiln, recovery boiler, other wood pulp processing equipment
Document(s) Received	2005 source test report: lime kiln gaseous emissions test runs, recovery boiler particulate, opacity and gaseous emissions test runs; HRA modeling CD with AERMOD and HARP modeling files for toxic pollutants; permit
Data Received	stack parameters for all facility sources; PM_{10} lb/hr test results for recovery boiler; total annual PM_{10} emissions for facility
Missing Data	Individual hourly PM_{10} emission rates for sources other than recovery boiler; individual annual PM_{10} emission rates for all sources
Assumptions	assume lime kiln and recovery boiler are only significant PM_{10} sources; assume PM_{10} emissions from the lime kiln were 1/2 the permit limit since the source test report did not include PM_{10} and test waived if emissions less than 1/2 the limit; allocate total annual facility emission rate from 2004 ARB inventory to individual sources based on hourly emission rates

Facility	Simpson Timber Company Korbel
Distance from HBRP	26.21 km
Distance from the Significant Impact Area	14.21 km
Emissions Sources	package boiler, steam boiler, 2 baghouses; 4 cyclone dust collectors
Document(s) Received	excerpts from 2004 source test report; Microsoft Access HARP database
Data Received	flow rates, temperatures, measured hourly PM_{10} emission rates for tested equipment, stack heights
Missing Data	annual emission rates for individual sources
Assumptions	measured emission rates from stack test were lower on a daily average basis than annual facility emissions: boiler tested at about ¼ of permit limit, so to be conservative, boilers assumed to emit at ½ their permitted emission rate; all dust collector emissions assumed to be emitted from stack for which parameters were provided; allocate total annual facility emission rate from 2004 ARB inventory to individual sources based on hourly emission rates

Facility	DG Fairhaven Power Fairhaven
Distance from HBRP	6.66 km
Distance from the Significant Impact Area	within impact area
Emissions Sources	180,000 lb steam per hour wood-fired boiler, emergency Diesel engine generator, cooling tower, fly ash conveyor, fly ash loading/unloading
Document(s) Received	Source test reports for the wood-fired boiler (July 2004 and October 2006); SCREEN3 modeling output for the wood-fired boiler; 2005 emission inventory based on PTE
Data Received	Stack parameters for wood-fired boiler; PM_{10} lb/hr test results for wood-fired boiler; annual PM_{10} emissions for wood-fired boiler based on maximum permitted emission rates
Missing Data	none
Assumptions	Use higher of the lb/MMBtu PM source test results and maximum hourly throughput to calculate hourly emissions

Facility	Ultrapower 3 Blue Lake
Distance from HBRP	24.25 km
Distance from the Significant Impact Area	12.25 km
Emissions Sources	wood-fired boiler
Document(s) Received	excerpts from 1997 source test report; Microsoft Access HARP database
Data Received	flow rates, temperatures, measured hourly PM_{10} emission rate, stack height, diameter
Missing Data	none
Assumptions	none

Facility	Simpson Timber Company Brainard
Distance from HBRP	12.08 km
Distance from the Significant Impact Area	0.08 km
Emissions Sources	wood-fired boiler, 2 baghouses, 5 cyclone dust collectors
Document(s) Received	permit; excerpts from source test reports for boiler, baghouses and 3 cyclone dust collectors; Microsoft Access HARP database
Data Received	flow rates, temperatures, measured hourly PM_{10} emission rates, permitted hourly and annual emission rates; boiler stack height
Missing Data	measured hourly PM_{10} emission rates for two cyclones; stack heights for dust collectors
Assumptions	hourly PM_{10} emission rates for missing cyclones are ½ permitted rates (emissions from tested units ranged from <1% to 18% of permitted rates); allocate total annual facility emission rate from 2004 ARB inventory to individual sources based on hourly emission rates; dust collector stack height same as boiler stack height

Facility	Sierra Pacific Lumber Arcata
Distance from HBRP	15.8 km
Distance from the Significant Impact Area	3.8 km
Emissions Sources	two boilers; two cyclone dust collectors
Document(s) Received	pages from permit; excerpts from 2004 boiler source test report ; Microsoft Access HARP database
Data Received	exhaust flow rates, temperatures and diameters for boiler stacks; measured PM_{10} emission rates; cyclone dust collector ratings; permitted PM_{10} emission limits for dust collectors; stack heights for boilers
Missing Data	emission and stack data for cyclone dust collectors
Assumptions	assume hourly emissions from cyclone dust collectors are ½ permitted emission limit (consistent with assumption for Simpson Timber); allocate total annual facility emission rate from 2004 ARB inventory to individual sources based on hourly emission rates; use lowest stack height for dust collectors

Facility	Schmidbauer Lumber Eureka
Distance from HBRP	6.87 km
Distance from the Significant Impact Area	within impact area
Emissions Sources	wood fired boiler; 4 cyclone dust collectors
Document(s) Received	pages from permit; excerpts from 2004 source test on boiler; Microsoft Access HARP database
Data Received	exhaust flow rate, stack diameter, exhaust temperature and measured hourly PM_{10} emissions from boiler; hourly and annual PM emission limits (total for cyclone dust collectors); stack height for boiler
Missing Data	stack parameters and actual PM_{10} emission rates for cyclone dust collectors
Assumptions	use stack parameters from source tests at other, similar facilities for cyclone dust collectors; assume hourly emissions from cyclone dust collectors are ½ permitted emission limit (consistent with assumption for Simpson Timber); assume dust collector stack heights are same as boiler stack heights; allocate total annual facility emission rate from 2004 ARB inventory allocated to individual sources based on hourly emission rates

Facility	Pacific Lumber Company Scotia
Distance from HBRP	30.66 km
Distance from the Significant Impact Area	18.66 km
Emissions Sources	three 235 MMBtu/hr boilers, 9 cyclone dust collectors
Document(s) Received	permit; excerpts from 2006 PM_{10} source test results for two boilers and 3 cyclone dust collectors; Microsoft Access HARP database
Data Received	permitted PM emission limits and ratings for all units; measured PM_{10} lb/hr emission rates for two boilers and 3 cyclone dust collectors; rated heat input for boilers; measured O_2 levels and stack diameters for boilers; flow rates, velocities and temperatures for tested cyclones; stack heights
Missing Data	exhaust gas flow rates and temperatures for boilers; exhaust parameters for 6 cyclone dust collectors
Assumptions	use F-factor method to calculate exhaust gas flow rates for boilers, assuming 9% moisture in stack gas and 306 deg F temp (based on Sierra Pacific wood-fired boiler test); assume all cyclone dust collectors emit at ½ their permitted limit (consistent with assumption for Simpson Timber); allocate total annual facility emission rate from 2004 ARB inventory to individual sources based on hourly emission rates

Facility	Humboldt Flakeboard Panels Arcata
Distance from HBRP	17.05 km
Distance from the Significant Impact Area	5.05 km
Emissions Sources	boiler; 3 dryers; 2 baghouses; 9 cyclone dust collectors
Document(s) Received	excerpts from source test report for boiler and 3 dryers
Data Received	exhaust flow rates and temperatures, stack diameters and PM_{10} lb/hr emission rates for tested sources
Missing Data	stack heights; emission and stack data for baghouses and cyclone dust collectors
Assumptions	assume emission points are 80 ft agl (per source test report statement that “exhaust ducts are 80 to 100 feet above ground); assume hourly emissions from baghouses and cyclone dust collectors are insignificant; allocate total annual facility emission rate from 2004 ARB inventory to individual sources based on hourly emission rates

Attachment 2

ARB 2004 PM_{10} Inventory for the NCUAQMD

CO	AB	FACID	DIS	FNAME	FSTREET	FCITY	FZIP	PM10T
12	NC	96	NCU	FAIRHAVEN POWER COMPANY	97 BAY STREET	FAIRHAVEN	95564	109.39
12	NC	37	NCU	SAMOA-PACIFIC CELLULOSE, LLC	P.O. BOX 218	SAMOA	95564	66.22
12	NC	47	NCU	HUMBOLDT FLAKEBOARD PANELS	4700 WEST END ROAD	ARCATA	95521	56.34
12	NC	60	NCU	PACIFIC LUMBER COMPANY, THE	SCOTIA	SCOTIA	95565	54.31
12	NC	84	NCU	SIERRA PACIFIC EMMERSON DIV	SAMOA ROAD, MANILA	ARCATA	95521	43.59
12	NC	72	NCU	SIMPSON TIMBER COMPANY	KORBEL	KORBEL		40.26
12	NC	59	NCU	P G & E-HUMBOLDT BAY PLANT	1000 KING SALMON AVE	EUREKA	95501	24.87
12	NC	4	NCU	SIMPSON TIMBER CO.	HWY 101	EUREKA	95501	20.92
12	NC	95	NCU	SCHMIDBAUER LUMBER	FT. OF CLARK	EUREKA	95501	11.22
12	NC	737	NCU	WALTON PAVING INC.	HATCHERY ROAD	BLUE LAKE	95525	1.38
12	NC	83	NCU	GRANITE CONSTRUCTION - ARCATA	GUINTOLI LANE	ARCATA	95521	0.51
12	NC	596	NCU	CALGON CARBON CORP.	HATCHERY ROAD	BLUE LAKE	95525	0.43
12	NC	88	NCU	MERCER FRASER - COOKS VALLEY	HWY 101	COOKS VALLEY	95501	0.40
12	NC	61	NCU	PACIFIC LUMBER CO., HOTMIX	S. HWY 101	SCOTIA	95565	0.29
12	NC	749	NCU	MERCER FRASER - PLANT B	DINSMORE DR.	FORTUNA	95540	0.25
12	NC	81	NCU	MERCER FRASER - WILLOW CREEK	HWY 96	WILLOW CREEK	95573	0.12
12	NC	91	NCU	CHEVRON BULK TERMINAL	3400 CHRISTIE STREET	EUREKA	95501	0.00
12	NC	98	NCU	EEL RIVER SAWMILLS	26011 AVE. OF THE GIANTS	REDCREST	95569	0.00
12	NC	97	NCU	ULTRAPOWER 3	INDUSTRIAL PARK	BLUE LAKE	95525	0.00

Attachment 3

Calculation of Merged Stack Parameter M and Results for SCREEN3 Modeling

HBRP PM10 Increments Analysis
Screening Procedure

Calculating Merged Stack Parameter M

Facility	Source	Stack Ht (m)	Stack Flow (m3/s)	Exhaust Temp (deg K)	Emission Rate (g/s)	M	Stack Ht (ft)	Stack Flow (ft3/s)	Exhaust Temp (deg F)	Emission Rate (lb/hr)
Humboldt Flakeboard	core dryer	24.4	24.72	327.11	0.66	299,441	80	872.8167	129.4	5.225
Panels, Arcata	**swing dryer**	**24.4**	**25.41**	**328.72**	**0.87**	**234,671**	80	897.1833	132.3	6.887
	surface dryer	24.4	24.60	324.33	0.40	487,627	80	868.6167	124.4	3.166
PALCO, Scotia	#373 cyclone	32.0	1.19	295.78	0.03	437,989	105	42	73	0.204
	#383 cyclone	32.0	0.59	292.44	0.02	323,243	105	20.9	67	0.136
	#374 cyclone	**32.0**	**1.18**	**291.33**	**0.09**	**117,632**	105	41.76667	65	0.744

Bold font indicates source parameters used for SCREEN3 modeling.

HBRP
SCREEN3 Results for Facilities More Than 5 km from the SIA

Facility	Emissions Source	Stack Diam, m	Stack Height, m	PM10 Em Rate, g/s		Distance from HBRP, m	SCREEN3 modeled conc, ug/m3/g/s	PM10 Impacts	
				24-hr avg	ann avg			24 hr avg	ann avg
Ultrapower	Boiler	0.693	30.480	0.4536	0.2638	24.25	2.27	0.4	0.1
Humboldt Flakeboard	Boiler	2.186	24.384	0.270	0.0455	17.05	7.17	0.8	0.0
Panels	Dryers	0.695	24.384	1.925	0.3245	17.05	2.28	1.8	0.1
	Total							2.5	0.1
Simpson Korbel	Package Blr	2.136	23.470	0.076	0.0756	26.21	7.009	0.2	0.1
	Boiler	1.213	23.470	0.813	0.8127	26.21	4.0	1.3	0.3
	Dust Collectors	2.413	24.384	0.270	0.2698	26.21	7.917	0.9	0.2
	Total							2.4	0.6
PALCO	Boiler 1	0.582	32.004	0.775	0.2515	30.66	1.9	0.6	0.0
Scotia	Boiler 2	0.582	32.004	0.753	0.2446	30.66	1.9	0.6	0.0
	Boiler 3	0.582	32.004	0.764	0.2480	30.66	1.9	0.6	0.0
	Dust Collectors	1.353	32.004	2.520	0.8181	30.66	4.44	4.5	0.4
	Total							6.2	0.5

Attachment 4

Emission Rates and Stack Parameters Used in the PM_{10} Increments Analysis

HBRP
Emission Rates and Stack Parameters for Increments Modeling

		Stack Diam, m	Stack Height, m	Exh Temp, Deg K	Exhaust Flow, m3/s	Exhaust Velocity, m/s	PM10 Em Rate, g/s	
							24-hr avg	ann avg
Evergreen Pulp	Lime Kiln	1.480	22.860	347.444	13.36	7.768	1.796	1.4714
	Recovery Blr	2.845	88.392	439.111	108.55	17.078	0.529	0.4337
Fairhaven Power	Boiler	2.134	30.480	461.222	55.92	15.6394	1.622	1.6222
Simpson Brainard	Boiler	1.067	15.240	468.556	9.42	10.5379	0.788	0.3117
	#382 collector	0.559	15.240	296.889	6.47	12.7508	0.081	0.0319
	#083 collector	0.559	15.240	296.889	6.47	12.7508	0.081	0.0319
	#305 collector	0.432	15.240	293.000	3.99	11.3843	0.242	0.0959
	#320 collector	0.381	15.240	289.111	2.27	24.4348	0.036	0.0142
	#421 collector	0.914	15.240	292.444	11.28	17.0180	0.092	0.0364
	#084 collector	0.495	15.240	290.222	4.34	23.6220	0.202	0.0798
Sierra Pacific Lumber	West Boiler	0.597	10.058	425.222	3.99	14.2615	0.228	0.0810
Arcata	East Boiler	0.597	10.973	443.556	4.58	16.3781	0.278	0.0989
	#044 cyclone DC	1.067	9.144	293.000	18.88	21.1202	1.935	0.6874
	#369 cyclone DC	1.067	9.144	293.000	10.62	11.8801	1.089	0.3867
PALCO	Boiler 1	2.134	32.004	425.222	27.43	7.6719	0.775	0.2515
Scotia	Boiler 2	2.134	32.004	425.222	27.43	7.6719	0.753	0.2446
	Boiler 3	2.134	32.004	425.222	27.43	7.6719	0.764	0.2480
	#373 cyclone DC	0.449	32.004	291.333	7.98	12.8016	0.802	0.2604
	#383 cyclone DC	0.449	32.004	291.333	3.35	6.3703	0.337	0.1094
	#374 cyclone DC	0.449	32.004	291.333	13.73	12.7305	1.381	0.4483
Schmidbauer Lumber	Boiler	0.914	12.192	445.889	7.87	11.9911	0.583	0.0744
Eureka	Dust Collectors	1.219	12.192	293.000	9.44	8.0851	1.947	0.2483

Biological Resources (WSQ8-10, DR80-81)

Freshwater marsh mitigation ratio

WSQ-8 *Please identify additional mitigation for permanent impacts to freshwater marsh due to the California Coastal Commission's request to increase the mitigation ratio from 2:1 to 4:1 for this habitat type.*

Response: Mitigation plans for the additional impacts to freshwater marsh are not yet final. PG&E will provide this information in a future submittal.

USACE wetlands

WSQ-9 *Please provide a revised wetland mitigation map showing only wetlands under the potential jurisdiction of the U.S. Army Corps of Engineers (USACE).*

Response: The map of wetlands under USACE jurisdiction is provided as Attachment WSQ9-1.

Wetland data sheets

WSQ-10 *Please submit to the USACE the wetland data sheets for the three areas for which the USACE requested further wetland analysis during the wetland delineation verification on February 1, 2007.*

Response: The USACE-jurisdiction wetland data sheets are provided as part of Attachment WSQ9-1.

Conservation Easements

80. Please provide the following:

a) Indicate whether all of the areas proposed for wetland mitigation sites will be placed under permanent conservation easements. If all of the areas proposed as wetland mitigation sites will not be placed under permanent easements, please provide the total acreage of land that will be given easement status.

b) Provide a map of the areas that will be placed under conservation easements.

Response: The areas identified on Figure 2A (labeled MIT-1 through 5) are proposed as wetland mitigation sites for the HBRP project (included as Attachment DR80-1). Figure 2A shows the mitigation areas that will be placed under a deed restriction. These areas total 5.6 acres. As specified in the AFC, the mitigation areas would be protected "in perpetuity through a conservation easement or other land use restriction determined and implemented by PG&E." PG&E proposes to place the mitigation areas under a deed restriction rather than a conservation easement.

The wetland mitigation areas will be located within property owned by PG&E for the Humboldt Bay Power Plant. The property will continue to be used for electricity

generation. In addition, the Independent Spent Fuel Storage Installation (ISFSI) Project will be located on this property. The ISFSI is an underground facility to provide long-term, safe storage of the spent fuel rods currently stored within Unit 3 of the Humboldt Bay Power Plant. The existence of the spent fuel rods requires tight security on the property. For these reasons, PG&E prefers to maintain control of the mitigation areas rather than have them under a conservation easement managed by a third party. In addition, the use of a deed restriction is consistent with how PG&E has managed land mitigation required by other regulatory agencies for its nuclear facilities. PG&E would ensure that the mitigation areas are monitored and maintained as specified in the Wetland Mitigation Plan which is currently being prepared. The Wetland Mitigation Plan will be included in a future submittal.

Easement Holding

81. Please provide the following:

a) Indicate what organization will hold the conservation easements and its status (e.g. registered non-profit, etc).

b) Indicate the expected terms of the easement regarding length of time, provisions for change of property ownership, and whether development of any sort would be permitted.

Response: As stated above, PG&E proposes to place the mitigation areas under a deed restriction in perpetuity. PG&E will continue to own and manage the property. Therefore, a provision for change of property ownership is unnecessary. The deed restriction would preclude development on the mitigation areas in perpetuity.

Attachment WSQ9-1

Wetlands under USACE Jurisdiction, Map and Data Sheets

Virginia Dains
Geobotanical Phenomenology
3371 Ayres Holmes Road
Auburn, California 95602-9747

February 28, 2007

Carol Heidsiek
U.S. Army Corps of Engineers
San Francisco District/Eureka Field Office
P.O. Box 4863
Eureka, California 95502

RE: U.S. Army Corps of Engineers File No. 400205

Dear Ms. Heidsiek

This letter is in response to your observations made during our February 1, 2007 wetland verification meeting at the Pacific Gas and Electric (PG&E) Humboldt Bay Repowering Project site, Humboldt County, California. On February 13, 2007, I returned to the project site to make adjustments in the wetland delineation as you requested. These on-site changes included mapping a small depression with seasonal wetland characteristics along the western fenceline in the proposed temporary laydown area, and expanding a previously mapped wetland to include a small drainage feature located behind the portable building in the northeastern portion of the project area. These are included in the revised wetland delineation map as SW15 (new) and SW7 (revised boundary). Data sheets for the new wetland area SW-15 are provided and locations are shown as DP 14 and DP 14a. The small wetland vegetation area we discussed southwest of SW-3 did not support all three wetland parameters, however, it is included as California Coastal Commission wetland.

This brings our revised USACE jurisdictional wetland acreage on the project site from 20.646 acres to 20.671 acres. We have made these adjustments in the project documentation and will carry forward these figures to future estimates of impacts and mitigation requirements.

I enjoyed meeting you and look forward to working together in the future. Please call me directly at (530) 888-9180, or Debra Crowe/CH2M HILL at (916) 286-0385 if you have any questions.

Sincerely,

Virginia Dains

Enclosure

cc. G. Lamberg/PG&E
S. Strachan/Strachan Consulting
D.Davy/CH2M HILL
J. Dixon/California Coastal Commission

Routine Wetland Delineation Data Form

Applicant: PG&E | Project: Humboldt Bay Repowering Project | Observer: Virginia Dains

State: CA | County: Humboldt | T

Date: February 13,2007 | Data Point : 14

Do Normal Circumstances exist on the site? (Yes) No

Is the site significantly disturbed? (Yes) No Soil is mixed fill.

Is the area a potential Problem Area? Yes (No)

Vegetation

Species	Strata	Cover	Status	Species	Strata	Cover	Status
Lotus corniculatus	Herb	20	FAC	Hypochoeris radicata	herb	15	FACU
Eleocharis macrostachy	Herb	5	OBL	Lolium perenne	herb	30	FAC
				Holcus lanatus	herb	10	FAC

% of dominant species that are OBL, FACW, and/or FAC: 100%

Other Indicators:

Hydrophytic vegetation present? yes

Basis? > 50% fac facw obl Dominance of hydrophytes

Soil

Map Unit: UI - Urban/Industrial Subgroup:" Misc Land type

Field Observations: Mixed fill

Depth	Texture	Color (Matrix/mottle)
0-3	cl	10YR 3/2
3-8	cl/gravels	10YR 4/2 & 10YR 5/6 mottle

Notes : Matrix mottles

Hydric soil Indicators: __ Histosol __ Histic epipedon __ Sulfidic Odor __ Aquic moisture regime

(X Reducing conditions) __ Gleyed or low-chroma colors __ Concretions

__ High o.c. in surface layer in sandy soils __ Organic streaking in sandy soils __

__ Listed on local hydric soils list __ Listed on national hydric soils list

Hydric Soils Present? yes Basis?: Saturation and ponding evidence of reducing conditi

Hydrology

Inundated? yes Depth of standing water: 1" Note: Site is a shallow basin.

Saturated? Yes Depth to saturated soil: Surface

Other primary indicators: __ Water marks __ Drift lines __Sediment deposits Algae matting, moist soil observed at site during verification

X Drainage patterns in wetlands

Secondary indicators: __ Oxidized rhizospheres in upper 12" __ Water-stained leaves

__ Local soil survey data __ FAC_Neutral test

Wetland Hydrology present? ye Basis: Evidence for long duration Saturation and ponding

Wetland Determination

Is this data point in a wetland? ye

Reason?:

All three Criteria are met.

Routine Wetland Delineation Data Form

Applicant: PG&E | Project: Humboldt Bay Repowering Project | Observer: Virginia Dains

State: CA | County: Humboldt | T

Date: February 13,2007 | Data Point: 14A

Do Normal Circumstances exist on the site? (Yes) No

Is the site significantly disturbed? Yes (No) Soil is Mixed fill

Is the area a potential Problem Area? Yes (No)

Vegetation

	Species	Strata	Cover	Status	Species	Strata	Cover	Status
*	Lotus corniculatus	herb	15	FAC	Plantago lanceolata	herb	5	FAC
	Holcus lanatus	herb	5	FAC	Hypochoeris radicata		10	FACU
					Rumex acetosella		5	FAC
					*Lolium perenne		20	FAC

% of dominant species that are OBL, FACW, and/or FAC: 100%

Other Indicators:

Hydrophytic vegetation present? yes

Basis? Dominance of fac, facw, obl

Soil

Map Unit: U1 - Urban - Industrial | Subgroup: "Misc Land Type

Field Observations: Soil is mixed fill

Depth	Texture	Color (Matrix/mottle)	Notes
0-6	CO	10YR 4/3 (dom)	mixed matrix colors, gravels and concrete bits

Hydric soil Indicators: __ Histosol __ Histic epipedon __ Sulfidic Odor __ Aquic moisture regime

__ Reducing conditions __ Gleyed or low-chroma colors __ Concretions

__ High o.c. in surface layer in sandy soils __ Organic streaking in sandy soils __

__ Listed on local hydric soils list __ Listed on national hydric soils list

Hydric Soils Present? no | Basis?: no evidence for Saturation or ponding

Hydrology

Inundated? no | Depth of standing water: | Note: Rain in previous day - soils saturated at surface only - no saturation observed during verification

Saturated? Sat | Depth to saturated soil: 0"

Other primary indicators: __ Water marks __ Drift lines __ Sediment deposits __ Drainage patterns in wetlands

Secondary indicators: __ Oxidized rhizospheres in upper 12" __ Water-stained leaves __ Local soil survey data __ FAC_Neutral test

Wetland Hydrology present? no | Basis: no evidence for long Saturation or ponding

Wetland Determination

Is this data point in a wetland? no

Reason?:

Only the Vegetation Criterium is met.

Wetland	Acres
Drainage Ditch	
DD-1	0.124
DD-2	0.049
DD-3	0.006
DD-4	0.038
DD-5	0.021
DD-6	0.034
DD-7	0.020
DD-8	0.014
Total:	0.306
Freshwater Marsh	
FM-1	2.345
Riparian Marsh	
RM-1	1.573
Salt Marsh	
SM-1	0.299
SM-2	1.812
SM-3	8.915
SM-4	0.362
SM-5	2.255
SM-6	2.471
Total:	16.114
Seasonal Wetland	
SW-1	0.104
SW-2	0.059
SW-3	0.002
SW-4	0.006
SW-5	0.043
SW-6	0.032
SW-7	0.018
SW-8	0.016
SW-9	0.002
SW-10	0.008
SW-11	0.008
SW-12	0.007
SW-13	0.005
SW-14	0.012
SW-15	0.011
Total:	0.333
Grand Total USACE Wetlands:	20.671

LEGEND

- Humboldt Bay Repowering Project Site
- 55-acre Study Area and Project Boundary
- Restricted Area - not surveyed
- Temporary Access Roads, Parking Areas, and Laydown
- USACE Data Points
- Calif. Coastal Commission (CCC) Wetland Transects

Wetlands

Potential Jurisdictional USACE Wetlands

- Drainage Ditch - 0.306 acres (DD)
- Freshwater Marsh - 2.345 acres (FM)
- Riparian Marsh - 1.573 acres (RM)
- Salt Marsh - 16.114 acres (SM)
- Seasonal Wetland - 0.333 acres (SW)

100 50 0 100 Feet

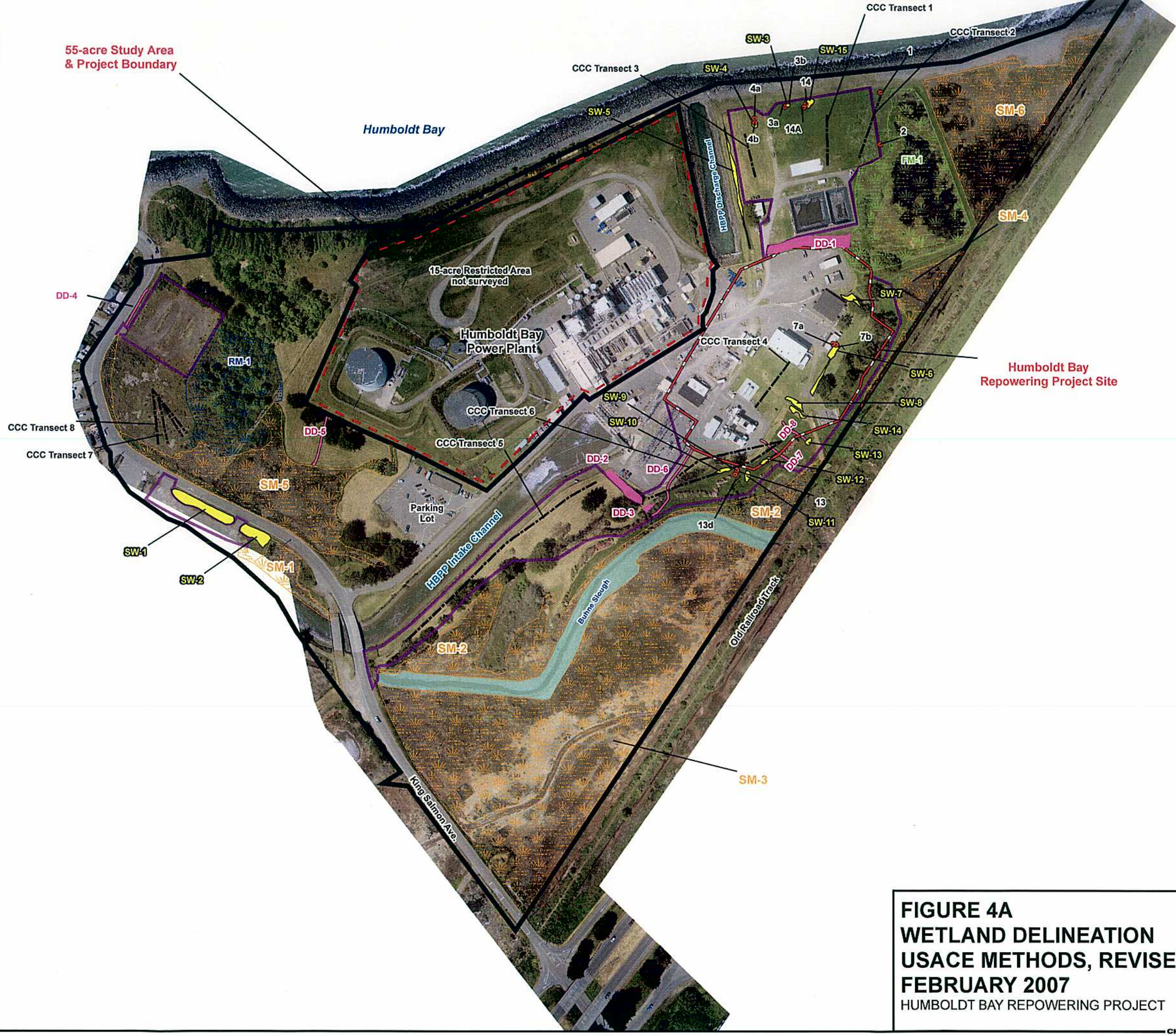


FIGURE 4A
WETLAND DELINEATION USACE METHODS, REVISED FEBRUARY 2007
HUMBOLDT BAY REPOWERING PROJECT

CH2MHILL

Attachment DR80-1

Wetland Mitigation Areas

Wetland	Acres
Coastal Commission Wetlands	
CCW-1	0.59
CCW-2	1.15
CCW-3	0.09
CCW-4	0.98
CCW-5	0.04
CCW-6	0.16
CCW-7	0.09
CCW-8	0.02
CCW-9	1.32
CCW-10	0.13
CCW-11	1.11
Total:	5.69
Drainage Ditch	
DD-1	0.124
DD-2	0.049
DD-3	0.006
DD-4	0.038
DD-5	0.021
DD-6	0.034
DD-7	0.02
DD-8	0.014
Total:	0.306
Freshwater Marsh	
FM-1	2.345
Riparian Marsh	
RM-1	1.573
Salt Marsh	
SM-1	0.299
SM-2	1.812
SM-3	8.915
SM-4	0.362
SM-5	2.255
SM-6	2.471
Total:	16.114
Seasonal Wetlands	
SW-1	0.104
SW-2	0.059
SW-3	0.002
SW-4	0.006
SW-5	0.043
SW-6	0.032
SW-7	0.018
SW-8	0.016
SW-9	0.002
SW-10	0.008
SW-11	0.008
SW-12	0.007
SW-13	0.005
SW-14	0.012
SW-15	0.011
Total:	0.333
Grand Total USACE Wetlands:	26.36

Mitigation Areas	Acres
MIT-1	0.61
MIT-2	1.03
MIT-3	2.26
MIT-4	1.57
MIT-5	0.13
Total	5.60

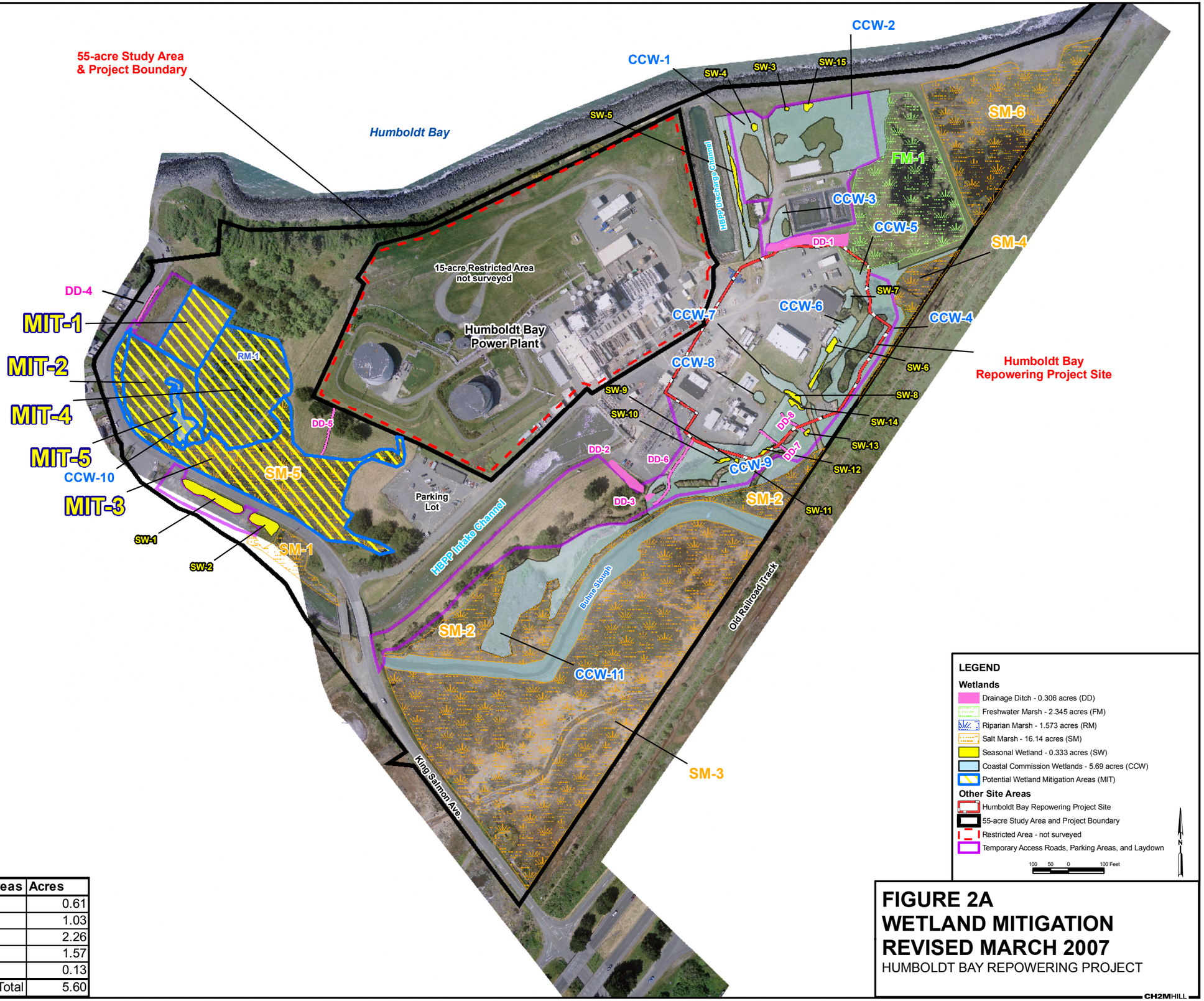


FIGURE 2A
WETLAND MITIGATION
REVISED MARCH 2007
HUMBOLDT BAY REPOWERING PROJECT

CH2MHILL

Cultural Resources (WSQ-11, DR82)

Wetland mitigation land survey

WSQ-11 Please provide a cultural resources survey of the wetland mitigation land proposed for the HBRP.

Response: PG&E will conduct the survey as soon as the final choice of wetland mitigation land is made in conjunction with the California Coastal Commission and USACE review of the HBRP wetland delineation. PG&E will provide CEC Staff with the results of the survey at that time.

Construction worker access trail

82. Please provide information regarding the types of ground disturbing activities, if any, that may be necessary to construct the trail. Please survey the route for the Construction Worker Access Trails and provide the methodology, personnel, and results to staff. Please record any identified isolates or sites on a DPR 523 form and provide a copy of the form.

Response: The construction worker access trail will be developed restoring an existing pathway which was previously used by PG&E for various construction projects at the Humboldt Bay Power Plant. The 4- to 6-foot-wide path will be prepared by removing the top approximately 6 inches of soil and smoothing the trail's surface. The surface of the trail will then be covered with approximately 4 inches of crushed rock and compacted.

Three footbridges will also be installed along the path. Two bridges will be installed in order to avoid drainages along the walkway. The third bridge will span the Humboldt Bay Power Plant inlet canal. Bridge abutments, requiring ground disturbance to the depth of approximately 3 feet, will be installed on each side of the footbridges.

A cultural resources pedestrian survey was conducted in March 2007 of areas that included the construction worker access trail. The results of the survey will be provided to Staff in a future submittal.

Geological Hazards and Resources (DR-83)

Seismic hazard assessment

83. *Please provide a fault hazard study, consistent with guidelines published by the California Board for Geologists and Geophysicists, that identifies and maps the surface traces of any active faults that may cross the project site. These faults include but are not limited to, the Buhne Point Fault and the Discharge Canal Fault, which were identified during geologic studies related to licensing of the nearby Independent Spent Fuel Storage Installation (ISFSI) Project. Techniques that could be used include, but are not limited to, trenching and logging, contouring of marker beds identified in boreholes, and seismic reflection studies. Alternatively, please provide a description of the seismic hazard assumptions used in the facility design to ensure the project would maintain stability and structural integrity.*

Response: This response will be provided in a future submittal.

Hazardous Materials Management (WSQ-13)

South Bay Elementary School

WSQ-13 *Please coordinate with South Bay Elementary School regarding notification procedures to the school in the event of a hazardous materials incident at the HBRP.*

Response: The Humboldt Bay Power Plant's emergency plan prescribes that, for events onsite that require notification, the Humboldt County Sheriff's Department (County Office of Emergency Services) and the Nuclear Regulatory Commission are to be notified. If the County were to determine that additional action would be warranted, they would contact other entities, such as the South Bay School in accordance with their emergency response protocols. These same procedures would apply during operation of the HBRP. There are no events at the Humboldt Bay Power Plant or the HBRP that would be expected to require a response from South Bay Elementary School.

It is also important to note that representatives from the Humboldt Bay Power Plant and South Bay Elementary School are in regular communication with one another. For example, a representative from the power plant sits on the South Bay Elementary School Site Council which meets once a month during the school year. In addition, the principal for South Bay Elementary School is a member of the Humboldt Bay Power Plant Community Advisory Board. This board meets on an as-needed basis to discuss activities associated with the power plant.

Transmission System Engineering (DR84, 85)

CAISO approval

84. *Please provide written confirmation that the CAISO has agreed to the technical feasibility of using an SPS for dropping one or more of the HBRP generating units offline in order to mitigate the following conditions:*

    a) Category B overloads on the Humboldt-Trinity 115 kV line; and

    b) Dynamic stability and low-frequency violations under Category B conditions on various lines; or.

Response: Attachment DR84-1 is a copy of a letter from the California Independent System Operator confirming their agreement to the technical feasibility of using and SPS for dropping one or more of the HBRP generating units offline for mitigation.

Transient stability

85. *As an alternative to obtaining CAISO approval of an SPS for Data Request 85(b), please demonstrate by performing a transient stability restudy that the 100-MVAR Static VAR Compensator adequately mitigates the dynamic stability and low-frequency violations.*

Response: See response to Data Request 84.

Attachment DR84-1

CAISO Letter

California Independent
System Operator

Gary DeShazo
Director of Regional Transmission – North
(916) 608-5880

February 22, 2007

Mr. Robert Jenkins
PG&E New Resource Procurement, Rm 1365, MC - N13R
P.O. Box 770000
San Francisco, CA 94177-0001

Subject: Humboldt Bay Power Plant Re-powering Project

Dear Mr. Jenkins:

The California ISO (CAISO) has previously reviewed the System Impact Study (SIS) and Facilities Study (FS) for the Humboldt Bay Power Plant Re-powering Project[1]. The project consists of ten reciprocating engine generators, each rated at 16.638 MW, with a plant auxiliary load of 3.65 MW, for a maximum net output to the grid of 162.73 MW.

On April 13, 2006, the CAISO issued a Preliminary Interconnection Approval (PIA) of the project interconnection plan based on the SIS. The attachment to the PIA indicated that mitigation plans for the Category "B" and "C" emergency overloads on the Humboldt-Trinity 115 kV Line # 1 under summer off-peak conditions could be mitigated either by reducing the number of generators on the 115 kV system from 4 to 3 (total generation reduction of16.63 MW) or reconductoring the Humboldt-Trinity 115 kV #1 line. The CAISO concurs with the technical feasibility of using Special Protection Schemes (SPS) to drop any one of the four connecting 115 kV generators as a solution[2]. Additionally, the study results also identified dynamic stability and low frequency concerns which the mitigation plans such as SPS can also be used. The detailed scope of the SPS will be developed and evaluated during the project implementation/engineering & construction phase in lieu of the Facility Study phase of this project.

If you have questions about the CAISO review of this study, please contact Paul Didsayabutra at (916) 608-1281 (pdidsaybutra@caiso.com) or myself at (916) 608-5880 (gdeshazo@caiso).

[1] The SIS was conducted by Pacific Gas and Electric Company (PG&E) at the request of the Ramco Generating Two (Ramco) to replace the existing PG&E's Humboldt Bay Power Plant. Project development was transferred to PG&E following completion of the SIS.

[2] This mitigation plan may not be sufficient to make the project fully deliverable for the purpose of determining its Net Qualifying Capacity under the CAISO Tariff and in accordance with CPUC-adopted Resource Adequacy Rules. Please refer to http://www.caiso.com/181c/181c902120c80.html for more information about Deliverability Study.

Sincerely,

Original signed by

Gary DeShazo
Director of Regional Transmission – North
cc: Paul Didsayabutra
Mark Esquerra
John Vardanian
Albert Wong

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE HUMBOLDT POWER PLANT PROJECT	DOCKET NO. 06-AFC-7 PROOF OF SERVICE

INSTRUCTIONS: All parties shall 1) send an original signed document plus 12 copies OR 2) mail one original signed copy AND e-mail the document to the web address below, AND 3) all parties shall also send a printed OR electronic copy of the documents that shall include a proof of service declaration to each of the individuals on the proof of service:

CALIFORNIA ENERGY COMMISSION
Attn: DOCKET NO. 06-AFC-7
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

APPLICANT

Gregory Lamberg, Project Manager
PG&E Company
Mail Code N12G
P.O. Box 770000
San Francisco, CA 94177-0001
GALg@pge.com

COUNSEL FOR APPLICANT

Scott Galati, Project Attorney
GALATI & BLEK, LLP
555 capitol mall, Suite 600
Sacramento, CA 95814
sgalati@gb-llp.com

APPLICANT'S CONSULTANTS

Douglas M. Davy, Ph.D.
CH2M HILL Project Manager
2485 Natomas Park Dr.
Suite 600
Sacramento, CA 95833
ddavy @ch2m.com

Susan Strachan
Environmental Manager
Strachan Consulting
P.O. Box 1049
Davis, CA 95617
strachan@dcn.org

INTERESTED AGENCIES

Tom Luster
California Coastal Commission
45 Fremont, Suite 2000
San Francisco, CA 94105-2219

Larry Tobias
CA Independent System Operator
151 Blue Ravine Road
Folsom, CA 95630
LTobias@caiso.com

Electricity Oversight Board
770 L Street, Suite 1250
Sacramento, CA 95814
esaltmarsh@eob.ca.gov

INTERVENORS

ENERGY COMMISSION

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JOHN L. GEESMAN
Presiding Member
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Mike Monasmith
Public Adviser's Office
pao@energy.state.ca.us

DECLARATION OF SERVICE

I, Jeannette Harris, declare that on March 16, 2007, I deposited the required copies of the attached Responses to CEC Staff Data Requests 79-85 and Workshop Queries 5, 6, 8-11, and 13 filed in support of the AFC for the HBRP (06-AFC-07) in the United States mail at Sacramento, California with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above. I declare under penalty of perjury that the foregoing is true and correct.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

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

Jeannette Harris

[signature]

CH2MHILL TRANSMITTAL

To: California Energy Commission
1516 Ninth Street
Sacramento, CA 95814
(916) 654-5076

From: CH2M HILL
Doug Davy/CH2M HILL
2485 Natomas Park Drive
Sacramento, CA 95833
(916) 286-0278

Attn: Dockets

Date: March 16, 2007

Re: Humboldt Bay Repowering Project AFC

We Are Sending You:

Quantity	Description
13	Responses to CEC Staff Data Requests 79-85 and Workshop Queries 5, 6, 8-11, and 13 filed in support of the AFC for the HBRP (06-AFC-07) (Hard Copy)
2	Responses to CEC Staff Data Requests 79-85 and Workshop Queries 5, 6, 8-11, and 13 filed in support of the AFC for the HBRP (06-AFC-07) (Electronic Copy)

If the material received is not as listed, please notify us at once.

Remarks:

Copy To:

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