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January 12, 2009

Christopher Meyer
Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Data Responses Set 1A
GWF Tracy Combined Cycle Power Plant Project (08-AFC-7)

On behalf of the GWF Energy LLC., please find attached 12 copies and one original of the Data Responses, Set 1A, in response to Staff's Data Requests dated October 21, 2008.

Included in this submittal are 5 CDs of the dispersion modeling files for the cumulative impact assessment.

Please call me if you have any questions.

Sincerely,

CH2M HILL

Jerry Salamy
Senior Project Manager

cc: Proof of Service List

Application for Certification

Data Response Set 1A
Response to Data Request 15

GWF Tracy Combined Cycle Power Plant Project

Submitted by

GWF®

With Technical Assistance by

CH2MHILL

January 2009

ES032008008SAC

GWF Tracy Combined Cycle Power Plant Project

(08-AFC-7)

Data Responses Set 1A

(Response to Data Request 15)

Submitted to

California Energy Commission

Submitted by

GWF Energy, LLC

January 2009

With Assistance from

CH2MHILL
2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833

Air Quality (15)

BACKGROUND

Cumulative Modeling Analysis

AFC Section 5.1.7 describes a cumulative modeling impact assessment that has not yet been filed with the Energy Commission.

Data Request

15. Please provide the analysis of cumulative air quality impacts.

Response: GWF Energy contacted the San Joaquin Valley Air Pollution Control District (SJVAPCD) and the Bay Area Air Quality Management District (BAAQMD) to identify potential cumulative air quality impact sources (both stationary sources and Environmental Impact Report sources). The SJVAPCD provided a list of stationary sources on November 6, 2008, including 37 facilities that have requested or have received authority to construct permits within 6 miles of the GWF Tracy site. This list is provided in Attachment DR15-1. A review of this initial list showed that many of the sources should not be included in the cumulative impact modeling analysis because they are either: VOC sources (there are no VOC ambient air quality standards), equipment shutdowns (emission decreases), Permit-Exempt Equipment Registrations (PEER – i.e., de minimis emission sources), rule compliance, permit renewals, or replacement/upgrading of existing systems. Based on this review, Table DR15-1 presents the list of potential sources for which GWF requested additional information from the SJVAPCD.

The SJVAPCD confirmed that no emission increases were associated with the Basalite Concrete Products, Thermal Energy Dev. Corp LTD, or the RMC Pacific Materials (Facility ID 692, 6/30/06 project only). It was also confirmed that Deuel Vocational Institute and Lodi Metals Tech Inc. were beyond the 6-mile radius of GWF Tracy, approximately 9 miles and 30 miles, respectively. Therefore, emissions associated with these five sources were also removed from the list of cumulative sources. The remaining four SJVAPCD sources included in the cumulative impact assessment are defined in the following section.

The BAAQMD identified two sources, the East Altamont Energy Center and the Tesla Power Plant. On further assessment, the BAAQMD indicated that the East Altamont Energy Center no longer has an active Authority to Construct permit and had surrendered the emission reduction credits for the project to another project in the BAAQMD jurisdiction. Furthermore, the East Altamont Energy Center is approximately 7 miles from GWF Tracy. Therefore, only the Tesla project was included in the cumulative impact assessment.

TABLE DR15-1
GWF Tracy Potential Cumulative Impact Sources

Facility ID	Facility Name	Date Received	Permit Type	Status	Description
1051	Basalite Concrete Products LLC	3/10/2006	ATC	FINAL	Addition of 40 Horsepower Dust Collectors to improve collection efficiency of a dry aggregate handling system.
1145	Musco Olive Products	9/15/08	ATC	PR-IN PR	A new bubbling fluidized bed boiler firing on olive pits.
1002	Lodi Metal Tech Inc	3/11/08	ATC	FINAL	Increased throughput.
1026	Thermal Energy Dev. Corp. Ltd.	8/21/07	ATC	FINAL	Modification of the biomass-fired boiler to establish an annual capacity factor of 10% for natural gas combustion.
692	RMC Pacific Materials	3/20/06	ATC	FINAL	Reconfigure Rock Plant with new and existing equipment.
692	RMC Pacific Materials	6/30/06	ATC	FINAL	New Aggregate Plant.
283	Deuel Vocational Institute	10/22/07	ATC	FINAL	Installation of a new 840 BHP diesel-fueled IC engine.
283	Deuel Vocational Institute	9/2/08	ATC	PR-INCO	398 HP Caterpillar Model C-9 diesel-fired emergency standby engine powering an electrical generator.
283	Deuel Vocational Institute	12/14/06	ATC	FINAL	Pyrolysis Cleaning Furnace.
472	Lawrence Livermore National Lab	10/10/06	ATC	FINAL	Explosives Detonation.
472	Lawrence Livermore National Lab	10/10/06	ATC	FINAL	The installation of a 315 BHP diesel-fired IC engine powering an electrical generator.

Cumulative Air Quality Impact Analysis

The cumulative air quality impact analysis was performed using the model settings and refined receptor grid outlined in Section 5.1 (Air Quality) of the AFC. The facility fence lines for the cumulative sources were not included in the modeling analysis.

Modeling Parameters

The emission and exhaust parameters used to estimate the cumulative impacts are presented in Tables DR15-2 and DR15-3. Because emission rates for $PM_{2.5}$ were not available for the cumulative sources, it was conservatively assumed that $PM_{2.5}$ emission rates were equal to those of PM_{10}. The source parameters were based on the following data sources:

- **Tesla Power Project**: source parameters and emission rates were based on the BAAQMD PSD Modeling Analysis memorandum (Permit Application #3506) dated November 30, 2006, and the Tesla Power Plant AFC application materials available on the CEC website (http://www.energy.ca.gov/sitingcases/tesla/index.html)

TABLE DR15-2
Summary of Modeled Emission Rates and Source Parameters (Point Sources)

Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Stack Height (m)	Temperature (K)	Exit Velocity (m/s)	Stack Diameter (m)	Emission Rates (g/s)									
								1-hr NOx	1-hr CO	1-hr SO_2	3-hr SO_2	8-hr CO	24-hr $PM_{10}/PM_{2.5}$	24-hr SO_2	Annual NOx	Annual $PM_{10}/PM_{2.5}$	Annual SO_2
Tesla Power Plant																	
Turbine/DB 1	625,969	4,176,031	118.3	60.96	358.7	16.8	5.79	23.9	139	0.252	0.252	23.8	1.61	0.252	1.80	1.37	0.212
Turbine/DB 2	626,011	4,176,031	117.1	60.96	358.7	16.8	5.79	23.9	139	0.252	0.252	23.8	1.61	0.252	1.80	1.37	0.212
Turbine/DB 3	626,096	4,176,031	116.2	60.96	358.7	16.8	5.79	16.4	35.9	0.252	0.252	9.13	1.61	0.252	1.80	1.37	0.212
Turbine/DB 4	626,138	4,176,031	116.1	60.96	358.7	16.8	5.79	16.4	35.9	0.252	0.252	9.13	1.61	0.252	1.80	1.37	0.212
Cooling Tower Cells 1 – 22	See note.	See note.	118.0	16.92	307	6.51	9.14	-	-	-	-	-	0.026	-	-	0.026	-
Emergency Diesel Generator	626,067	4,175,976	118.9	1.94	787	95.4	0.2	0.810	0.155	0.101	0.101	0.0194	2.28E-03	0.101	4.81E-03	6.26E-04	5.74E-04
Diesel Fire Water Pump	626,217	4,175,917	116.1	3	622	75	0.13	0.467	0.110	0.095	0.095	0.0139	3.41E-04	0.095	2.77E-03	9.35E-05	5.42E-04
Lawrence Livermore Nat'l Lab (N-472-76-0)																	
LL Site 300 Emergency ICE	632,260	4,166,092	167	2.4384	788.7	87.9	0.101	0.204	0.039	5.04E-04	5.04E-04	0.039059	7.56E-03	5.04E-04	1.17E-03	4.31E-05	2.90E-06
Musco Olive																	
13.1 MMBTU boiler	629,806	4,174,532	95	7.62	616.5	10.4	0.762	0.066	0.060	0.083	0.083	0.060	0.155	0.083	0.037	0.087	0.047

Notes: The coordinates for each of the identical cooling tower cells are included in the modeling input files available on CD.

TABLE DR15-3
Summary of Modeled Emission Rates and Source Parameters (Volume Sources)

Source Description	Easting (m)	Northing (m)	Base Elevation (m)	Release Height (m)	Initial Y (m)	Initial Z (m)	Emission Rates (g/s)									
							1-hr NOx	1-hr CO	1-hr SO_2	3-hr SO_2	8-hr CO	24-hr $PM_{10}/PM_{2.5}$	24-hr SO_2	Annual NOx	Annual $PM_{10}/PM_{2.5}$	Annual SO_2
RMC Pacific Materials (N-692-17-0)																
Rock Crusher	638,756	4,171,370	56	3.048	1.42	1.42	-	-	-	-	-	8.95E-03	-	-	8.95E-03	-
Lawrence Livermore Nat'l Lab (N-472-68-0)																
Outdoor Explosives Detonation	632,260	4,166,092	167	4.572	4.15	2.07	0.19	2.34	0.049	0.13	0.29	0.87	2.02E-03	5.07E-04	0.054053	1.26E-04

Cumulative Impact Assessment Results

The results of the cumulative impact assessment are presented in Table DR15-4. The maximum predicted cumulative impacts represent the impact at the same receptor location identified as the maximum receptor location in the GWF Tracy ambient air quality impact assessment (Section 5.1 of the AFC). Therefore, the results include the maximum predicted cumulative impacts and a comparison to the operational modeling results for the GWF Tracy facility (Table 5.1-17 of the AFC).

Based on the cumulative impact modeling, the maximum 1-hr and annual NO_2 cumulative concentrations would increase by less than 0.2 percent compared to the impacts of GWF Tracy. The total NO_2 cumulative impacts would also remain below the respective ambient air quality standards. Therefore the cumulative NO_2 impacts would be less than significant. The modeled cumulative impacts of SO_2 and CO are far below the state and federal standards. Therefore, the SO_2 and CO cumulative impacts would be less than significant. The maximum 24-hour and annual PM_{10} and $PM_{2.5}$ cumulative impact concentrations would increase by less than one percent of their respective ambient air quality standards. However, because the background ambient concentrations of PM_{10} and $PM_{2.5}$ are above the respective standards, any increase in PM_{10} or $PM_{2.5}$ concentrations would result in a significant impact without mitigation. As GWF Tracy is providing full $PM_{2.5}$ and PM_{10} mitigation consistent with the SJVAPCD's New Source Review Rule, significant cumulative PM_{10} or $PM_{2.5}$ impacts are not expected.

Five compact diskettes containing the air dispersion modeling files will be provided to CEC staff. Compact diskettes of the air dispersion modeling files will also be provided to others upon request.

TABLE DR15-4
Cumulative Impacts Analysis—Maximum Modeled Impacts Compared to the Ambient Air Quality Standards

Pollutant	Averaging Time	GWF Tracy Impact ($\mu g/m^3$) [a]	Predicted Cumulative Impact ($\mu g/m^3$) [b]	Background [c] ($\mu g/m^3$)	Total Cumulative Impact [d] ($\mu g/m^3$)	State Standard ($\mu g/m^3$)	Federal Standard ($\mu g/m^3$)
NO_2	1-hour	223.0	223.1	113	336	338	-
	annual	1.52	1.54	22.6	24.1	-	100
SO_2	1-hour	5.6	12.5	47.1	59.6	655	—
	3-hour	1.9	4.2	34.0	38.2	—	1,300
	24-hour	0.8	0.9	18.3	19.2	105	365
	annual	0.09	0.09	5.2	5.29	—	80
CO	1-hour	401	1040	5,039	6,079	23,000	40,000
	8-hour	132	132	3,321	3,453	10,000	10,000
PM_{10}	24-hour	5.2	5.3	94	99.3	50	150
	annual	0.5	0.6	30	30.6	20	-
$PM_{2.5}$	24-hour	5.2	5.3	70	75.3	-	35
	annual	0.5	0.6	14	14.6	12	15

[a] Maximum predicted concentrations for the GWF Tracy project as reported in Table 5.1-17 of the AFC

[b] The predicted concentration represents the highest concentration predicted for the cumulative sources at the location of the maximum GWF Tracy impact. This concentration includes the GWF Tracy sources.

[c] Background concentrations as reported in Table 5.1-17 of the AFC.

[d] Total cumulative impact includes the predicted cumulative impact plus the background concentration.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
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1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION
FOR THE *GWF TRACY COMBINED CYCLE POWER PLANT PROJECT*

Docket No. 08-AFC-7
PROOF OF SERVICE
(Revised 12/10/2008)

INSTRUCTIONS: All parties shall either (1) send an original signed document plus 12 copies or (2) mail one original signed copy AND e-mail the document to the address for the Docket as shown below, AND (3) all parties shall also send a printed or electronic copy of the document, which includes a proof of service declaration to each of the individuals on the proof of service list shown below:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 01-AFC-16
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DECLARATION OF SERVICE

I, Mary Finn, declare that on January 12, 2009, I deposited copies of the attached GWF Tracy Combined Cycle Power Plant Project (08-AFC-7) Data Responses Set 1A in the United States mail at Sacramento with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

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.