

April 13, 2005

Brian Bateman  
Engineering Division  
Bay Area Air Quality Management District  
939 Ellis Street  
San Francisco, CA 94109

Re: Application for Determination of Compliance  
San Francisco Energy Reliability Project

Dear Brian:

It has come to our attention that the annual average PM<sub>10</sub> impacts shown in the Application for Determination of Compliance for the SFERP project were overstated in the documents filed on March 29, 2005. The original modeling erroneously reflected operations of three CTGs for 8760 hours per year each, rather than the proposed permit limitation of 12,000 hours per year total or an average of 4,000 hours per year per CTG. As a result, the annual average PM<sub>10</sub> impacts were over-stated by roughly a factor of two. The result of correcting this error is a reduction in the annual average PM<sub>10</sub> impacts from 0.2 ug/m<sup>3</sup> to 0.08ug/m<sup>3</sup>. Replacement pages containing the revised versions of the tables and figures that reflect the correct, lower annual average PM<sub>10</sub> impacts are provided in the attached document.

The modeling files provided on CD with the application on March 29 included the erroneous modeling results. With this filing, we are also providing two modeling CDs containing a complete set of corrected modeling files. Please discard the CDs filed with the application and place these CDs in the project file instead.

If you have any questions regarding this filing or regarding the proposed project in general, please do not hesitate to call.

Sincerely,

*Nancy Matthews*  
Nancy Matthews

enclosures

cc: (w/o CDs)  
Karen Kubick, SFPUC  
Ralph Hollenbacher, SFPUC  
Russell Stepp, SFPUC  
Steve DeYoung  
John Carrier, CH2M Hill  
Jeanne M. Solé, Office of the City Attorney  
Bill Pfanner, CEC Project Manager

years of ambient monitoring data may be used if they are representative of the area's air quality where the maximum impacts occur due to the proposed source.

The background data need not be collected on site, as long as the data are representative of the air quality in the subject area (40 CFR 51, Appendix W, Section 9.2). Three criteria are applied in determining whether the background data are representative: (1) location, (2) data quality, and (3) data currentness (USEPA, 1987). These criteria are defined as follows:

- **Location:** The measured data must be representative of the areas where the maximum concentration occurs for the proposed stationary source, existing sources, and a combination of the proposed and existing sources.
- **Data quality:** Data must be collected and equipment must be operated in accordance with the requirements of 40 CFR Part 58, Appendices A and B, and PSD monitoring guidance.
- **Currentness:** The data are current if they have been collected within the preceding three years and they are representative of existing conditions.

Although the SFERP is not subject to PSD review and thus not required to follow this guidance, all of the data used in this analysis meet the requirements of Appendices A and B of 40 CFR Part 58, and thus all meet the criterion for data quality. All of the data have been collected within the preceding three years, and thus all meet the criterion for currentness.

Ambient NO<sub>2</sub>, CO, SO<sub>2</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> data are collected at the Arkansas Street monitoring station. This monitoring station is located less than 2 miles northwest of the project site. Ambient NO<sub>2</sub>, CO, SO<sub>2</sub> and PM<sub>2.5</sub> data are also being collected at a monitoring station in Hunters Point, a little over 1 mile south of the project site. The ambient pollution levels monitored at the Arkansas Street and Hunters Point monitoring stations reflect concentrations in the vicinity of the project, and thus meet the criterion for location. CO levels are affected mainly by vehicle traffic, so CO concentrations monitored at both urbanized locations are expected to conservatively represent CO levels in the project area. There are no local sources of SO<sub>2</sub> in the vicinity of either monitoring station or the project site that would be expected to affect monitored concentrations. Therefore, both stations provide representative background data for assessing the SO<sub>2</sub> impacts of the project, and thus meet the location criterion.

**Results of the Ambient Air Quality Modeling Analyses.** The maximum facility impacts calculated from the ISCST3/CTSCREEN and fumigation modeling analyses described previously are summarized in Table 8.1-22R. The highest modeled impacts are expected to occur under startup and shoreline fumigation conditions.

Even if the project were subject to PSD review, preconstruction monitoring would not be required because the maximum ambient impacts do not exceed de minimis levels, as shown in Table 8.1-23.

**TABLE 8.1-22R**  
Results of the Ambient Air Quality Modeling Analysis

Pollutant	Averaging Time	Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )			
		Normal Operation	Startup	Inversion Breakup Fumigation	Shoreline Fumigation
NO <sub>2</sub>	1-hour	8.3	111.3 <sup>a</sup>	1.6	11.0
	Annual	0.1		<sup>c</sup>	<sup>c</sup>
SO <sub>2</sub>	1-hour	0.8	<sup>b</sup>	0.2	1.1
	3-hour	0.6	<sup>b</sup>	0.2	1.0
	24-hour	0.1	<sup>b</sup>	0.05	0.1
	Annual	0.01	<sup>b</sup>	<sup>c</sup>	<sup>c</sup>
CO	1-hour	8.1	27.8 <sup>a</sup>	1.6	10.7
	8-hour	6.3		0.9	3.3
PM <sub>2.5</sub> /PM <sub>10</sub> (including cooling tower) <sup>d</sup>	24-hour	1.2	<sup>b</sup>	0.5	0.9
	Annual	<u>0.20, 0.8</u>	<sup>b</sup>	<sup>c</sup>	<sup>c</sup>

## Notes:

- <sup>a</sup> Not applicable, because startup emissions are included in the 8-hour and longer-term ("Normal Operation") modeling.
- <sup>b</sup> Not applicable, because emissions are not elevated above normal levels during startup.
- <sup>c</sup> Not applicable, because inversion breakup and shoreline fumigation are short-term phenomena and as such are evaluated only for short-term averaging periods.
- <sup>d</sup> Cooling tower not included in fumigation modeling.

**TABLE 8.1-23**  
Evaluation of Preconstruction Monitoring Requirements

Pollutant	Averaging Time	Exemption Concentration ( $\mu\text{g}/\text{m}^3$ )	Maximum Modeled Concentration ( $\mu\text{g}/\text{m}^3$ )	Exceed Monitoring Threshold?
NO <sub>x</sub>	annual	14	0.1	No
SO <sub>2</sub>	24-hr	13	0.1	No
CO	8-hr	575	6.3	No
PM <sub>10</sub>	24-hr	10	1.2	No

**Impacts During Turbine Commissioning.** As discussed previously, NO<sub>2</sub> and CO impacts could be higher during commissioning than under other operating conditions already evaluated. The commissioning period for the project is comprised of several equipment tests. These tests and the associated NO<sub>x</sub> and CO emissions are briefly summarized below. The emissions calculations are shown in more detail in Appendix 8.1B, Table 8.1B-7.

- **Full Speed No Load Tests (FSNL)**— The tests include a test of the combustion turbine ignition system, a test to ensure that the CTG is synchronized with its electric generator, and a test of the CTG's overspeed system. During the tests, the heat input to the CTG will be approximately 100 MMBtu/hr or 20 percent of the maximum heat input rating. Worst-case NO<sub>x</sub> emission concentrations are expected to be 100 ppm at 15-percent

Maximum ground-level impacts due to operation of the SFERP are shown together with the ambient air quality standards in Table 8.1-25R. Using the conservative assumptions described earlier, the results indicate that the SFERP will not cause or contribute to violations of any state or federal air quality standards, with the exception of the state PM<sub>10</sub> and state and federal PM<sub>2.5</sub> standards. For these pollutants, existing concentrations already exceed the state standards.

**TABLE 8.1-25R**  
Modeled Maximum Impacts from Facility

Pollutant	Averaging Time	Maximum Facility Impact (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	Total Impact (µg/m <sup>3</sup> )	State Standard (µg/m <sup>3</sup> )	Federal Standard (µg/m <sup>3</sup> )
NO <sub>2</sub>	1-hour	111.3 <sup>a</sup>	141	252	470	–
	Annual	0.1	36	36	–	100
SO <sub>2</sub>	1-hour	1.1	138	139	655	–
	3-hour	1.0	70	71	–	1,300
	24-hour	0.1	29	29	105	365
	Annual	0.01	5.3	5.3	–	80
CO	1-hour	27.8	5,000	5,028	23,000	40,000
	8-hour	6.3	3,644	3,650	10,000	10,000
PM <sub>10</sub>	24-hour	1.2	74	75	50	150
	Annual	<del>0.20</del> 0.08	26.3	<del>26.5</del> 26.4	20	50
PM <sub>2.5</sub>	24-Hour	1.2	58	59	–	65
	Annual	<del>0.20</del> 0.08	13.1	<del>13.3</del> 13.2	12	15

<sup>a</sup> Maximum 1-hour NO<sub>2</sub> impact shown occurs only during simultaneous startup of three turbines. Maximum impact during routine turbine operation will be approximately 8.3 µg/m<sup>3</sup>.

**PSD Increment Consumption.** The Prevention of Significant Deterioration (PSD) program was established to allow emission increases (increments of consumption) that do not result in significant deterioration of ambient air quality in areas where criteria pollutants have not exceeded the National Ambient Air Quality Standards (NAAQS). For the purposes of determining applicability of the PSD program requirements, the following regulatory procedure is used:

- SFERP facility-wide emissions are compared with regulatory significance thresholds to determine whether the facility is major and thus may be subject to PSD. If the facility emissions exceed these thresholds, it is a major facility. The comparison in Table 8.1-26 indicates that the SFERP will not be a major facility and thus is not subject to PSD.
- If an ambient impact analysis is required, the analysis is first used to determine if the impact levels are significant. The determination of significance is based on whether the impacts exceed established significance levels (BAAQMD Rule 2.2-233) shown in Table 8.1-27. If the significance levels are not exceeded, no further analysis is required.
- If the significance levels are exceeded, an analysis is required to demonstrate that the allowable increments will not be exceeded, on a pollutant-specific basis. Increments are the maximum increases in concentration that are allowed to occur above the baseline concentration. These PSD increments are also shown in Table 8.1-27.

Table 8.1-26 shows that the proposed project will not be a major stationary source and will not be subject to PSD review because facility emissions of all pollutants are below the 100-tpy major facility and the PSD significance thresholds.

**TABLE 8.1-26**  
PSD Significant Emissions Levels

Pollutant	Facility Emissions (tpy)	PSD Threshold (tpy)	Significant?
NO <sub>x</sub>	39.8	250	No
SO <sub>2</sub>	2.7	250	No
POC	7.7	250	No
CO	27.9	250	No
PM <sub>10</sub> <sup>a</sup>	18.2	250	No

<sup>a</sup> PM<sub>10</sub> emissions shown include cooling tower.

**TABLE 8.1-27**  
BAAQMD PSD Levels of Significance

Pollutant	Averaging Time	Significant Impact Levels	Maximum Allowable Increments
NO <sub>2</sub>	1-Hour	19 µg/m <sup>3</sup>	N/A <sup>a</sup>
	Annual	1 µg/m <sup>3</sup>	25 µg/m <sup>3</sup>
SO <sub>2</sub>	3-hour	25 µg/m <sup>3</sup>	512 µg/m <sup>3</sup>
	24-Hour	5 µg/m <sup>3</sup>	91 µg/m <sup>3</sup>
	Annual	1 µg/m <sup>3</sup>	20 µg/m <sup>3</sup>
CO	1-Hour	2,000 µg/m <sup>3</sup>	N/A
	8-Hour	500 µg/m <sup>3</sup>	N/A
PM <sub>10</sub>	24-Hour	5 µg/m <sup>3</sup>	30 µg/m <sup>3</sup>
	Annual	1 µg/m <sup>3</sup>	17 µg/m <sup>3</sup>

<sup>a</sup> The significance level for 1-hour average NO<sub>2</sub> is a BAAQMD level only; there is no corresponding federal significance level.

The maximum modeled impacts from the SFERP facility are compared with the significance levels in Table 8.1-28R. These comparisons show that the proposed project exceeds only the BAAQMD 1-hour average NO<sub>2</sub> significance level, and only during startup of three turbines simultaneously. During routine plant operations, maximum one-hour NO<sub>2</sub> concentrations will be below the BAAQMD significance threshold. As discussed previously, however, the project emissions are below levels that would trigger PSD review either by USEPA or by the BAAQMD, so no further analysis of modeled impacts is required.

**TABLE 8.1-28R**  
Comparison of Maximum Modeled Impacts and PSD Significance Thresholds

Pollutant	Averaging Time	Maximum Modeled Impacts (µg/m <sup>3</sup> )	Significance Threshold (µg/m <sup>3</sup> )	Significant?
NO <sub>2</sub>	1-Hour	111.3	19	yes
	Annual	0.1	1	no
SO <sub>2</sub>	3-Hour	1.0	25	no
	24-Hour	0.1	5	no
	Annual	0.01	1	no

**TABLE 8.1-28R**  
**Comparison of Maximum Modeled Impacts and PSD Significance Thresholds**

Pollutant	Averaging Time	Maximum Modeled Impacts ( $\mu\text{g}/\text{m}^3$ )	Significance Threshold ( $\mu\text{g}/\text{m}^3$ )	Significant?
CO	1-Hour	27.8	2,000	no
	8-Hour	6.3	500	no
PM <sub>10</sub>	24-Hour	1.2	5	no
	Annual	<del>0.20</del> 0.08	1	no

- NO<sub>2</sub> impact shown occurs only during the startup of three turbines simultaneously. Under typical operating conditions, 1-hour average NO<sub>2</sub> concentration will be 8.3  $\mu\text{g}/\text{m}^3$ .

### 8.1.5.5 Screening Health Risk Assessment

The screening health risk assessment (SHRA) was conducted to determine expected impacts on public health of the noncriteria pollutant emissions from the facility. The SHRA was conducted in accordance with the California Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics "Hot Spots" Program Risk Assessment Guidelines (June 2002) and the BAAQMD "Risk Management Procedure" Policy (May 1991). The SHRA estimated the offsite cancer risk to the maximally exposed individual (MEI), as well as indicated any adverse effects of non-carcinogenic compound emissions. The CARB/OEHHA HARP computer program was used to evaluate multipathway exposure to toxic substances. Because of the conservatism (overprediction) built into the established risk analysis methodology, the actual risks will be lower than those estimated.

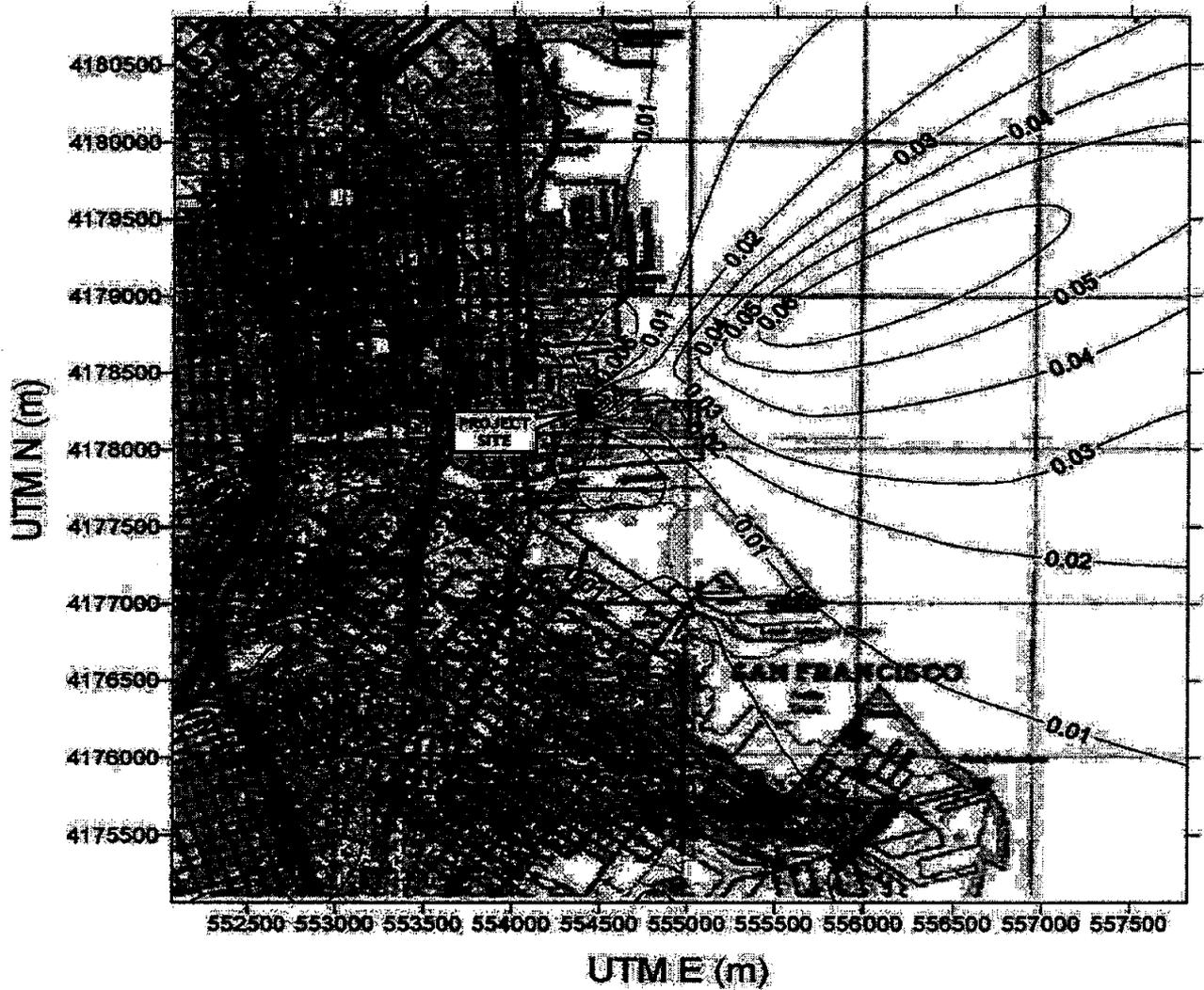
A health risk assessment requires the following information:

- Carcinogenic potency values for any carcinogenic substances that may be emitted
- Noncancer Reference Exposure levels (RELs) for determining non-carcinogenic health impacts
- One-hour and annual average emission rates for each substance of concern
- The modeled maximum offsite concentration of each of the pollutants emitted

The SHRA uses carcinogenic potency factors specified by the California OEHHA. All of the pollutant cancer risks are assumed to be additive.

An evaluation of the potential noncancer health effects from long-term (chronic) and short-term (acute) exposures has also been included in the SHRA. Many of the carcinogenic compounds are also associated with noncancer health effects and are therefore included in the determination of both cancer and noncancer effects. RELs are used as indicators of potential adverse health effects. RELs are generally based on the most sensitive adverse health effect reported and are designed to protect the most sensitive individuals. However, exceeding the REL does not automatically indicate a health impact. The OEHHA reference exposure levels were used to determine any adverse health effects from noncarcinogenic compounds. A hazard index for each noncancer pollutant is then determined by the ratio of the pollutant annual average concentration to its respective REL for a chronic evaluation. The individual indices are summed to determine the overall hazard index for the project.

Figure 8.1B-4 Revised 4/05  
 Annual Average PM<sub>10</sub> Impact During Project Operation



Note: Units are  $\mu\text{g}/\text{m}^3$ .

The highest concentration of PM<sub>10</sub> under any conditions will be ~~0.2~~ 0.08  $\mu\text{g}/\text{m}^3$ . The concentration considered by the US EPA to be significant is  $1 \mu\text{g}/\text{m}^3$ . Therefore, the highest concentration of PM<sub>10</sub> from this project is less than ~~one-fifth~~ one-tenth of the level considered by EPA to be significant.