CH2M HILL
2485 Natomas Park Dr
Suite 600
Sacramento, CA 95833
Tel 916.920.0300
Fax 916.920.8463

CH2MHILL

December 15, 2005
184288

DOCKET
04-AFC-1
DATE DEC 15 2005
RECD. DEC 15 2005

Mr. William Pfanner
Siting Project Manager
California Energy Commission
1516 Ninth Street, MS-15
Sacramento, CA 95814-5504

RE: Notice of Final Determination of Compliance
San Francisco Electric Reliability Project (04-AFC-1)

Dear Bill:

On behalf of the City of San Francisco, please find attached 12 copies and one original of the "Final Determination of Compliance" issued by the Bay Area Air Quality Management District on November 22, 2005.

Please call me if you have any questions.

Sincerely,

CH2M HILL

John L. Carrier, J.D.
Program Manager

c: Project File
Proof of Service List

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

Final
Determination of Compliance

San Francisco Electric Reliability Project

Application 12344

Engineering Division

Bay Area Air Quality Management District

November 22, 2005

Table of Contents

I. Introduction ***1***

A. Background **1**

B. Project Description **2**

1. Process Equipment 2

2. Equipment Operating Scenario 2

3. Air Pollution Control Strategies and Equipment 3

II. Facility Emissions ***4***

III. Statement of Compliance ***9***

A. District Regulation 2, Rule 2: New Source Review **9**

1. District Regulation 2-2-301: BACT Determinations 9

2. District Regulation 2-2-302: Offset Requirements, POCs and NO_x 13

B. Health Risk Screening Analysis **14**

C. Other Applicable District Rules and Regulations **15**

D. CEQA **18**

IV. Permit Conditions ***18***

V. Recommendation ***30***

List of Tables

Table **Page**

1 Maximum Hourly, Daily and Annual Regulated Air Pollutant Emissions for the SFERP 7

2 Maximum Facility Toxic Air Contaminant (TAC) Emissions 8

3 Maximum Annual Facility Regulated Air Pollutant Emissions 8

4 Facility Offset Requirements 14

5 Health Risk Screening Analysis Results 14

I. Introduction

This report is the Bay Area Air Quality Management District (BAAQMD, or "District") Final Determination of Compliance (FDOC) for the San Francisco Electric Reliability Project (SFERP), a natural gas-fired, simple cycle power plant proposed by the City and County of San Francisco. This facility is to be located at the corner of Maryland Street and 25th Street in the Potrero area of San Francisco, on a 4-acre site of city-owned land. The SFERP will consist of three natural gas-fired General Electric LM6000PC simple cycle combustion turbine generators (CTGs) with associated equipment and two-cell wet cooling towers. The proposed facility will be capable of generating a nominal output of 145 megawatts (MW). The SFERP is currently undergoing review by the California Energy Commission (CEC) for certification pursuant to the Warren-Alquist Act (Public Resources Code §25500 *et seq*.).

In accordance with BAAQMD Regulation 2, Rule 2, Best Available Control Technology (BACT) requirements must be applied to the CTGs to minimize emissions of precursor organic compounds (POCs), oxides of nitrogen (NO_x), sulfur dioxide (SO_2), particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), and carbon monoxide (CO). In addition, the applicant must provide emission offsets for NO_x. Emissions of all regulated air pollutants will be less than 100 tons per year; therefore, the SFERP is not a Major Facility under District regulations and is not subject to Prevention of Significant Deterioration (PSD) requirements.

A. Background

Pursuant to BAAQMD Regulation 2, Rule 3, Section 405, this document serves as the FDOC for the SFERP. It will also serve as the engineering evaluation report for the BAAQMD Authority to Construct under Application #12344. The FDOC describes how the proposed facility will comply with applicable federal, state, and BAAQMD regulations, including the BACT and emission offset requirements specified in the District's New Source Review Regulation 2, Rule 2. In accordance with Regulation 2-3-405, the District will not issue an Authority to Construct until after the CEC issues a final certification for the SFERP.

Air pollutant emission calculations and permit conditions necessary to assure compliance with applicable rules and regulations are included in this FDOC. The document also includes a summary of the Health Risk Screening Analysis (HRSA) completed by the District to estimate the maximum public health risks that will result from the project's toxic air contaminant (TAC) emissions.

In accordance with BAAQMD Regulation 2, Rule 3, Section 404, the Preliminary Determination of Compliance (PDOC) for this project was subject to the public notice, public inspection, and 30-day public comment period requirements of District Regulation 2, Rule 2, Sections 406 and 407. The District has considered public comments submitted, and has a number of appropriate changes into this FDOC.

B. Project Description

1. Process Equipment

The applicant is proposing a simple-cycle combustion turbine facility with a nominal net electrical output of 145 MW. The SFERP will consist of the following proposed equipment:

S-1 Combustion Turbine Generator (CTG) #1, General Electric LM-6000PC Sprint, 487.3 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-1 Selective Catalytic Reduction (SCR) System and A-2 Oxidation Catalyst.

S-2 Combustion Turbine Generator (CTG) #2, General Electric LM-6000PC Sprint, 487.3 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-3 Selective Catalytic Reduction (SCR) System and A-4 Oxidation Catalyst.

S-3 Combustion Turbine Generator (CTG) #3, General Electric LM-6000PC Sprint, 487.3 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-5 Selective Catalytic Reduction (SCR) System and A-6 Oxidation Catalyst.

S-4 Cooling Tower System, Two-cell, 40' H x 50' L x 14' W, 52,000 gpd (exempt from permit requirements per District Regulation 2-1-103)

S-5 Aqueous Ammonia Storage Tank, 29% HN_3, 8' dia. x 30' L, 11,300 gallon capacity (exempt from permit requirements per District Regulation 2-1-123)

The facility will include two small two-cell cooling towers for turbine cooling (S-4). PM_{10} emissions from these cooling towers are estimated to be less than 0.2 lb/day. The cooling towers are exempt from District permit requirements under Regulation 2-1-103. The facility also will include a tank for storage of aqueous ammonia to be used in the SCR systems to reduce NO_x emissions (S-5). The tank is exempt from District permit requirements under Regulation 2-1-123.

2. Equipment Operating Scenario

Maximum hourly, daily, and annual emissions from the LM-6000PC combustion turbines were estimated based on expected peaking operation and proposed annual operating limitations. As proposed, each natural gas fired CTG will have a maximum heat input of 487.3 MMBTU per hour, 11,700 MMBTU per day, and 4,268,750 MMBTU per year.

Annual Emissions

Total annual emissions for all three turbines were calculated based on 12,000 combined operating hours per year at 60^{o}F ambient temperature and full load conditions. Actual annual emissions are expected to be less than the calculated values, as actual operation is projected to be less than 12,000 hours per year, the facility will operate at times at reduced load, and higher ambient temperatures are expected.

The offsets provided will be based on the calculated annual emissions, and permit conditions will be imposed to limit annual emissions to the amount of offsets provided. Emissions of NO_x and CO, the pollutants of greatest concern, will be continuously monitored, as will fuel usage. Any or all of

the combustion turbines may be operated up to 24 hours per day, 7 days per week, with total plant-wide heat input not to exceed the equivalent of 12,000 hours of full-load operation per year or the mass emissions limits. Each combustion gas turbine may have a total 250 hours per year of startup/shutdown activity.

Daily Emissions

Maximum hourly emissions from the CTGs are expected to occur during a startup or shutdown. Each CTG will be limited to the daily maximum emission rates listed below. The maximum emissions for each turbine are summarized as follows.

Maximum Emission Rates for each Combustion Gas Turbine

Operating Mode	NO_x	CO	POC	PM_{10}
Startup/Shutdown (lb/hr)	40	10	2	2.5
Full Load (lb/hr)	4.4	4.3	1.2	2.5
Daily Maximum (lb/day)	283	132	34	60

3. Air Pollution Control Strategies and Equipment

The proposed SFERP triggers the BACT requirements of New Source Review in District Regulation 2, Rule 2 for emissions of NO_x, CO, POC, SO_2, and PM_{10}. The applicant has proposed the following controls:

Selective Catalytic Reduction with Ammonia Injection for the Control of NO_x

The S-1, S-2, and S-3 gas turbines will be equipped with evaporative inter-cooling and water injection to minimize NO_x emissions. NO_x emissions will be further reduced through the use of a selective catalytic reduction (SCR) system using ammonia injection. The CTGs will achieve the BACT-level NO_x emissions of 2.5 ppmvd @ 15% O_2 (one hour average) and will be subject to an annual combined emission cap of 39.8 tons per year, which is equivalent to an annual average of 2.5 ppmvd @15 % O_2 at 12,000 hours per year of operation. SCR can typically achieve NO_x emission reductions in the range of about 80 to 95 percent without exceeding the applicable ammonia limit. Ammonia emissions will be limited to 10 ppmvd @ 15 % O_2 and a total of 39.8 tons per year.

NOx catalytic control equipment operates properly only within a specific temperature window. Control efficiencies will drop if temperatures are outside of this defined temperature range (i.e., either too hot or cool). Hot temperatures associated with uncooled exhaust may cause sintering of the catalysts, reducing catalyst surface area and thus reducing activity. Conversely, low temperatures can result in higher NO_x emissions and unreacted ammonia because the catalyst requires a minimum temperature to become chemically active.

Emission control system inlet temperatures are higher for simple-cycle gas turbines than for combined-cycle turbines. Gas turbines may have exhaust temperatures ranging up to 1000 ^oF. In

combined-cycle gas turbines, heat is removed from exhaust gases with a Heat Recovery Steam Generator (HSRG), resulting in a decrease in gas temperatures entering the emission control system. In simple-cycle systems, the turbine exhaust gas goes to the emission control system without being cooled. Catalysts used for selective catalytic reduction are not as reliable in controlling NO_x at the higher temperatures with uncooled exhaust of simple cycle gas turbine. The higher operating temperature results in catalyst deactivation, reducing the catalyst efficiency. As a result, gas turbine emissions from combined-cycle operations can be readily controlled with consistently higher efficiency.

Oxidation Catalyst to Minimize CO and POC Emissions

The proposed gas turbines S-1, S-2, and S-3, also trigger BACT for CO and POC emissions. A CO oxidation catalyst is designed to catalytically oxidize the CO and POC to achieve BACT-level CO emissions of 4 ppmvd @ 15 % O_2 (three hour average) and will be subject to an annual facility emission limit of 28 tons of CO per year. The POC emission level will be limited to 2.0 ppmvd @ 15 % O_2 and will be subject to an annual limit of 7.7 tons per year.

Exclusive Use of Clean-burning Natural gas to Minimize SO_2 and PM_{10} Emissions

The gas turbines will exclusively use commercial natural gas as a fuel to minimize SO_2 and PM_{10} emissions. Because the emission rate of SO_2 depends on the sulfur content of the fuel burned and is not dependent upon the burner type or other combustion characteristics, the use of natural gas will result in the lowest possible emissions of SO_2. PM_{10} emissions will be minimized through the use of best combustion practices and "clean burning" natural gas.

II. Facility Emissions

NO_x, CO, POC and ammonia will be all limited to BACT levels by enforceable permit conditions, including certain maximum outlet emission concentrations. BACT for SO_2, and PM_{10} control is the exclusive use of clean-burning natural gas. The outlet concentration, in ppm by volume and dry (ppmvd), is not specifically limited for SO_2 and PM_{10}, so the hourly emission rate will be taken to be those values calculated using the natural gas sulfur content and the rate provided by General Electric, the turbine manufacturer, respectively.

Calculated annual SO_2 emissions are based on utility natural gas containing an average of 0.33 grains of sulfur per 100 scf. Daily and hourly emissions are based on the content of 1 grain of sulfur per 100 scf. PM_{10} emissions are based on the Los Esteros Critical Energy Center turbine manufacturer guaranteed emission rate of 2.5 pounds PM_{10} per hour.

The facility regulated air pollutant emissions, and TAC emissions, are presented in the following sections. Detailed emission calculations, including the derivations of emission factors are presented below.

Baseload Emissions

Baseload emissions are the maximum hourly emissions under baseload conditions. A summary of the baseload hourly emissions from each turbine is given below, followed by detailed emission calculations for each pollutant.

Summary of Baseload Hourly Emission Estimates, lb/hour-turbine

NO_x (as NO_2)	POC	PM_{10}	CO	SO_2	NH_3
4.4	**1.2**	**2.5**	**4.3**	**1.37**	**6.48**

NO_x emissions: The applicant has proposed a NO_x limit of 2.5 ppmvd @ 15 % O_2 (averaged over one hour), which complies with BACT requirements for these gas turbines. The NO_x emissions from the turbines will be limited by permit conditions to 2.5 ppmvd @ 15 % O_2. This concentration is converted to mass NO_x emissions (as NO_2) as follows:

(2.5 ppmvd)(20.95-0)/(20.95-15) = 8.65 ppmvd @ 0 % O_2
(8.65/1,000,000)(1 mol/385.3 dscf)(46.01 lb NOx/lb-mol)(8700 dscf/MMBtu) = 0.0090 lb NO_x/MMBtu

The hourly NO_x (as NO_2) mass emissions rate based on the maximum firing rate of each turbine is calculated as follows:
(0.0090 lb NO_x/MMBtu)(487.3 MMBtu/hr) = 4.39 lb NOx/hr

CO emissions: The hourly CO emissions from the turbines will be limited by permit condition to 4 ppmvd @ 15 % O_2. The hourly CO mass emission rate based on the maximum firing rate of each turbine is calculated as follows based on 4 ppmvd @ 15 % O_2:

(4 ppmvd)(20.95-0)/(20.95-15) = 14.08 ppmvd @ 0 % O_2
(14.08/1,000,000)(1mol/385.3)(28 lb CO/lb-mol)/lb-mol)(8700 dscf/MMBtu) = 0.0089 lb CO/MMBtu
(0.0089 lb CO MMBtu)(487.3 MMBtu/hr) = 4.31 lb CO/hr

POC emissions: The POC emission from the turbines will be limited by permit condition to 2.0 ppmvd @ 15 % O_2. The hourly POC mass emission rate based on the maximum firing rate of each turbine is calculated as follows assuming the POC is methane (CH_4) and based on 2.0 ppmvd @ 15 % O_2.

(2 ppmvd)(20.95-0)/20.95-15) = 7.04 ppmvd @ % O_2
(7.04/1,000,000)(1mol/385.3)(16 lb CH_4/lb-mol)/lb-mol)(8700 dscf/MMBtu) = 0.0025 lb POC/MMBtu
(0.00254 lb CH_4/MMBtu)(487.3 MMBtu/hr) = 1.24 lb POC/hr

Ammonia emissions: The ammonia (NH_3) emission from the turbines will be limited by permit condition to 10 ppmvd @ 15 % O_2. The hourly mass emission rate based on the maximum firing rate of each turbine is calculated as follows based on 10 ppmvd @ 15 % O_2.

(10 ppmvd)(20.95-0)/20.95-15) = 35.21 ppmvd @ % O_2
(35.21/1,000,000)(1mol/385.3)(17 lb NH_3/lb-mol)/lb-mol)(8700 dscf/MMBtu) = 0.0133 lb NH_3/MMBtu

(0.0133 lb NH_3/MMBtu)(487.3 MMBtu/hr) = 6.48 lb NH_3/hr

Sulfur Dioxide emissions: The sulfur dioxide (SO_2) emission factor is based upon a maximum expected average natural gas sulfur content grains per 100 scf and a higher heating value of 1017 Btu/scf. The expected annual average sulfur content (used to calculate annual emissions) is 0.33 grain per 100 scf.

(1.0 grain/100scf)(10^6 Btu/MMBtu) (2 lb SO_2/lb S)/[7000 grain/lb)(1017 Btu/scf)] = 0.0028 SO_2 lb/MMBtu

(0.0028lb SO_2/MMBtu)(487.3 MMBtu/hr) = 1.37 lb SO_2/hr (annual limit based on expected average of 0.33 grain per 100 scf)

PM_{10} emissions: The PM_{10} emission factor is based upon the BACT-required level of 2.5 lb/hr based on similar installations.

Emissions During Startup and Shutdown

Each CTG may operate up to 24 hours per day, with a typical two 2-hour startups per day and two 2-half-hour shutdowns per day totaling 5 hours of startup/shutdown activity per turbine. Maximum emission rates expected to occur during the startup and shutdown of each CTG are shown as follows.

The startup/shutdown hourly emission estimates are based on the emission estimates provided by the consultant for the SFERP.

Startup/Shutdown Hourly Emission Estimates, lb/hour-turbine

NO_x (as NO_2)	CO	POC	PM10
40	10	2	2.5

Maximum Daily Emissions:

A summary of the maximum daily emissions from each turbine is given below, followed by detailed emission calculations for each pollutant.

Maximum Daily Emission Estimates, lb/day-turbine

NO_x (as NO_2)	POC	PM_{10}	CO	SO_2	NH_3
283	**34**	**60**	**132**	**33**	**156**

Maximum daily emissions are estimated based on 24 hours of worst-case emission rates. The worst-case daily emission rate is either a day, including a startup/shutdown, with the balance of the daily operations based on 100% load (60 ^oF ambient temperature), or a day with operation at 100% load for 24 hours. The baseload hourly emission estimates are based on allowable BACT concentration emission limits at 100% load. In those cases in which the startup/shutdown emissions are less than the baseline, the baseline number was used for the entire 24 hours.

NO_x (as NO_2):
(40 Lb/hr-startup/stop)(5 hours) + (4.39 lb/hr-baseload)(19hours) = 283.4 lb/day NO_x (as NO_2)
or (4.39 lb/hr. x 24 hours/day) = 105.4 lb/day

CO:
(10 Lb/hr-startup/stop)(5hours) + (4.31 lb/hr-baseload)(19 hours) = 131.9 lb/day CO
or (4.31 lb/hr. x 24 hours/day) = 103.4 lb/day

POC:
(2 lb/hr-startup/shutdown)(5 hours) + (1.24 lb/hr-baseload)(19 hours)= 33.56 lb/day POC
or (1.24 lb/hr x 24 hours/day) = 29.8 lb/day POC

PM_{10}:
(2.5 lb/hr-startup/shutdown)(5hours) + (2.5 lb/hour)(19 hours) = 60 lb/day PM_{10}

SO_2:
(1.37 lb/hr-startup/shutdown)(5 hours) + (1.37 lb/hour)(19 hours) = 33 lb/day SO_2

Ammonia:
(6.48 lb/hr. x 24 hours/day) = 156 lb/day

Maximum Annual Emissions:

Annual emissions for each CTG are based on 4000 hours per year of operation. For pollutants for which emissions are higher during startup/shutdown periods, annual emissions are based on 3750 hr/yr at baseload operation, and 250 hr/yr at startup/shutdown operation.

Table 1 is a summary of the hourly, daily and annual maximum regulated air pollutant emissions for all three gas turbines including startup and shutdown.

Table 1
Maximum Hourly, Daily and Annual Regulated
Air Pollutant Emissions for the SFERP

Pollutant	Lb/hr [(a)]	Lb/day[(b)]	Tons/yr
NO_x (as NO_2)	120	850	39.8
CO	30	396	27.9
POC	6.0	101	7.7
PM_{10}	7.5	180	15
SO_2	4.11	99	2.7 (c)

(a) includes startup/shutdown emissions
(b) includes 5 hours day of startup/shutdown
(c) Annual SO_2 emissions are based on expected fuel sulfur content of 0.33 gr/100 scf

Table 2 is a summary of the maximum TAC emissions from the project. These emissions are used as input data for air pollutant dispersion models used to assess the maximum increased health risk to the public resulting from the project. The ammonia emissions shown are based upon a worst-case ammonia emission concentration of 10 ppmvd @ 15% O_2 due to ammonia slip from the A-1, A-2 and A-3 SCR systems.

Table 2
Maximum Facility Toxic Air Contaminant (TAC) Emissions

Toxic Air Contaminant	Maximum Facility Emissions, lbs/year	Risk Screening Trigger Level,[a] lb/yr
Acetaldehyde[b]	234.6	72
Acrolein	21.2	3.9
Ammonia[c]	78,480	1,930
Benzene[b]	19.1	6.7
1,3-Butadiene[b]	2.5	1.1
Ethylbenzene	187.5	19,300
Formaldehyde[b]	2,110.3	33
Hexane	1489.3	8,300
Naphthalene	9.5	270
PAHs[b]	1	0.043
Propylene	4,433.3	N/A
Propylene Oxide[b]	170.2	52.0
Toluene	764.8	3,860
Xylenes	375.5	57,900

a pursuant to BAAQMD Risk Evaluation Procedure

b carcinogenic compound

c based upon the worst-case ammonia slip of 10 ppmvd @ 15% O2 from the A-1, A-3 and A-5 SCR systems with ammonia injection

The SFERP does not trigger PSD requirements. Table 3 is a summary of the annual regulated air pollutant emission limits for the facility and the PSD trigger levels.

Table 3
Maximum Annual Facility Regulated Air Pollutant Emissions

Pollutant	**Cumulative Increase in Emissions[a,b] (tons/year)**	**PSD Trigger[c] (tons/year)**
Nitrogen Oxides (as NO_2)	39.8	100
Carbon Monoxide	27.9	100
Precursor Organic Compounds	7.7	NA[d]
Particulate Matter (PM_{10})	15	100
Sulfur Dioxide	2.7	100

a emission increase from proposed gas turbines only; does not include emissions from cooling tower

b Includes startup and shutdown emissions for gas turbines (250 startups and shutdowns)

c PSD trigger levels for new major facility

d there is no PSD requirement for POC

The sulfuric acid mist (H_2SO_4) emissions will be less than the PSD threshold of 7 tons per year. Even assuming all the sulfur were to be converted to sulfuric acid, the sulfuric acid mist emissions would be less than 7 tons per year.

The non-criteria pollutant analysis requirements of District Regulation 2-2-306 do not apply because SFERP is not a Major Facility, and the emissions of these pollutants (i.e., lead, asbestos, beryllium, mercury, fluorides, sulfuric acid mist, hydrogen sulfide, and total reduced sulfur and reduced sulfur compounds) will not exceed the specified emission thresholds. However, an HRSA has been conducted for potential emissions of TACs.

Regulation 2-2-308 requires applicants to demonstrate that emissions from a project located within 10 km of a PSD Class I area will not cause or contribute to exceed any national ambient air quality or any applicable Class I increment. Because the closest Class I area (i.e., the Point Reyes National Seashore) is more than 10 km from the SFERP, this requirement does not apply to the proposed facility.

III. Statement of Compliance

The following section summarizes the applicable District rules and regulations and describes how the proposed SFERP will comply with those requirements.

A. District Regulation 2, Rule 2: New Source Review

The primary requirements of the District's New Source Review rule that apply to the proposed SFERP facility are Section 2-2-301, Best Available Control Technology Requirement, and Section 2-2-302, Offset Requirements, Precursor Organic Compounds and Nitrogen Oxides.

1. District Regulation 2-2-301: BACT Determinations

District Regulation 2-2-206, defines BACT as the more stringent of:

(a) The most effective control device or technique which has been successfully utilized for the type of equipment comprising such a source; or
(b) The most stringent emission limitation achieved by an emission control device or technique for the type of equipment comprising such a source; or
(c) Any emission control device or technique determined to be technologically feasible and cost-effective by the APCO; or
(d) The most effective emission control limitation for the type of equipment comprising such a source which the EPA states, prior to or during the public comment period, is contained in an approved implementation plan of any state, unless the applicant demonstrates to the satisfaction of the APCO that such limitations are not achievable. Under no circumstances shall the emission control required be less stringent than the emission control required by any applicable provision of federal, state or District laws, rules or regulations.

The type of BACT described in definitions (a) and (b) must have been demonstrated in practice and approved by a local Air Pollution Control District, CARB, or the EPA and is referred to as "BACT

2." This type of BACT is also termed "achieved in practice." The BACT category described in definition (c) is referred to as "technologically feasible/cost-effective" and must have been demonstrated to be effective and reliable on a full-scale unit and shown to be cost-effective on the basis of dollars per ton of pollutant abated. This is referred to as "BACT 1." BACT specifications for both the "achieved in practice" and "technologically feasible/cost-effective" categories have been compiled in the BAAQMD BACT Guideline for various source categories.

Nitrogen Oxides (NO_x)

The District's BACT Guideline Section 89.1.3 for Gas Turbine Simple Cycle greater than 40 Megawatts Heat Input (dated 7/18/03) specifies BACT1 (Technologically Feasible/Cost Effective) for NO_x is 2.5 ppmvd NO_x @ 15% O_2. This BACT determination was based upon the use of SCR and water injection (as applied in the most recent Application #5412, issued 10/15/2002) or a SCONOx System. The EPA has accepted this BACT determination as Federal LAER. CARB has also cited these levels as BACT in its document "Guidance for Power Plant Siting and Best Available Control Technology," June 1999.

SCR lowers NO_x emissions by using a reducing agent (ammonia or urea) to reduce NO_x molecules to elemental nitrogen and water. The ammonia is injected into the flue gas stream upstream of a catalyst, which is used to reduce the required temperature for NO_x reduction to less than 800^{o}F. SCR has been widely and successfully used in combustion turbine and boiler applications for many years.

The District is unaware of any simple cycle turbine system, in the size range being proposed here, that has consistently achieved a lower NOx level than 2.5 ppmvd @15% O_2. Thus the District does not consider a lower NOx control level to be technically feasible for the purposes of a top-down BACT analysis.

<u>Environmental Impacts</u>

The use of SCR will result in ammonia emissions due to an allowable ammonia slip limit of 10 ppmvd @ 15 % O_2. An HRSA using air dispersion modeling showed a chronic hazard index of 0.001 resulting from the ammonia slip emissions for three turbines. In accordance with the District's Toxic Risk Management Policy and currently accepted practice, a hazard index less than 1.0 is not considered significant. Therefore, the toxic impact of the ammonia slip resulting from the use of SCR is deemed to be not significant and is not a sufficient reason to eliminate SCR as a control alternative.

The ammonia emissions resulting from the use of SCR may have another environmental impact through potential formation of secondary particulate matter emissions, such as ammonium nitrate. Because of the complex nature of the chemical reactions and dynamics involved in the formation of secondary particulates, it is difficult to estimate the amount of secondary particulate matter that will be formed from the emission of a given amount of ammonia. However, the District believes that the formation of ammonium nitrate in the Bay Area air basin is limited by the formation of nitric acid and not driven by the amount of ammonia in the atmosphere. Therefore, ammonia emissions from the proposed SCR system are not expected to contribute significantly to the formation of secondary particulate matter. This potential environmental impact is not considered significant enough to justify the elimination of SCR as a control alternative.

One other potential environmental impact from the use of SCR involves the storage and transport of ammonia. Although ammonia is toxic if swallowed or inhaled and can irritate or burn the skin, eyes, nose, or throat, it is a commonly used material that is typically handled safely and without incident. The SFERP facility will be required to maintain a Risk Management Plan (RMP) and implement a Risk Management Program to prevent accidental releases. The RMP provides information on the hazards of the substances handled at the facility and the programs in place to prevent and respond to accidental releases. The accident prevention and emergency response requirements reflect existing safety regulations and sound industry safety codes and standards. In addition, the CEC has modeled the health impacts arising from a catastrophic release of aqueous ammonia due to spontaneous storage tank failure at the proposed SFERP and found that the impact would not be significant. Therefore, the potential environmental impact due to aqueous ammonia storage at the SFERP facility does not justify the elimination of SCR as a control alternative.

Conclusion

Each combustion gas turbine will meet a NO_x emission concentration limit of 2.5 ppmvd NO_x @ 15% O_2, averaged over a one hour period, during all operating modes except gas turbine start-ups and shutdowns. The applicant has proposed to comply with this emission limitation through the use of dry low NO_x combustors and SCR with ammonia injection. Compliance will be verified by a CEM located in the stack for each gas turbine. SCR will not cause significant energy, economic, or environmental impacts. The applicant's proposed use of SCR to meet the District's BACT standard for NO_x is therefore acceptable.

Carbon Monoxide (CO)

BACT for CO will be analyzed over the turbines' entire operating range from minimum to maximum load. Steam injection power augmentation lowers the combustor flame temperature thereby allowing an increased fuel use rate, which in turn increases gas turbine peak generating capacity during periods of high ambient temperature. However, lowering the combustor flame temperature steam or water injection can increase CO production.

The District's BACT Guideline Section 89.1.3 for Gas Turbine Simple Cycle for greater than 40 Megawatts Heat Input (dated 7/18/03) specifies 6 ppmvd CO, @ 15% O_2 with an averaging period of three hours as BACT1 (Technologically Feasible/Cost Effective). This BACT determination was based upon the use of CO Catalyst and water injection. CARB has also cited these levels as BACT in their "Guidance for Power Plant Siting and Best Available Control Technology," June 1999.

The District has permitted at least five facilities at 4.0 ppmvd CO @15% O_2, averaged over three hours. Per the June 1999 CARB Power Plant Siting Guidance Document, two consecutive years of source testing indicate CO emission concentrations vary from 0.16 to 0.62 ppmvd CO @15% O_2. The District's source test results have measured emissions of less than 1.5 ppm CO @15% O_2. The District therefore believes there is sufficient justification to conclude that a CO emissions level at 4.0 ppmdv@15% O_2 has been achieved in practice. The CO limit will apply during all operating modes except for gas turbine start-up and shutdown. This limit applies to the exhaust from the gas turbine.

The SFERP has agreed to meet a CO emission limit of 4.0 ppmvd @ 15% O_2 that will apply to all gas turbines operating modes except for gas turbine start-up and shutdown. The SFERP will comply with this BACT specification through the use of oxidation catalysts.

Precursor Organic Compounds (POCs)
The District's BACT Guideline Section 89.1.3 for Gas Turbine Simple Cycle for greater than 40 Megawatts Heat Input (dated 7/18/03) specifies 2 ppmvd POC @ 15% O_2 with an averaging period of one hour as BACT. This BACT determination was based upon the use of an Oxidation Catalyst or Dry Low NO_x combustors and is based on recent BAAQMD permits issued for power plants. CARB has also cited these levels as BACT in their "Guidance for Power Plant Siting and Best Available Control Technology," June 1999. The applicant has proposed to meet this POC stack concentration of 2 ppmvd @ 15% O_2.

Sulfur Dioxide (SO_2)
The District's BACT Guideline Section 89.1.3 for Gas Turbine Simple Cycle for greater than 40 Megawatts Heat Input (dated 7/18/03) specifies the exclusive use of PUC-regulated natural gas as BACT for SO_2 emissions. The proposed turbines will utilize PUC natural gas exclusively, which will result in minimal SO_2 emissions. Accordingly, the sulfur content of the natural gas will be limited by permit condition to 1 grain/100 scf. This average corresponds to an SO_2 emission factor of 0.0028 lb./MMBtu. The natural gas sulfur content specification of 1 grain per 100 scf is deemed BACT for SO_2.

Particulate Matter (PM_{10})
The District's BACT Guideline Section 89.1.3 for Gas Turbine Simple Cycle for greater than 40 Megawatts Heat Input (dated 7/18/03) specifies the exclusive use of PUC-regulated natural gas as BACT for PM_{10} emissions. The proposed turbines and duct burners will utilize PUC natural gas exclusively, which will result in minimal direct PM_{10} emissions and minimal formation of secondary PM_{10} such as sulfates. Accordingly, the sulfur content of the natural gas will be limited by permit condition to 1 grain/100 scf.

PM emissions from gas-fired gas turbines are inherently low. The District has, in the past, utilized the BACT definition in Section 2-2-206.1 to determine that Best Available Control Technology for PM for gas turbines was "exclusive use of CPUC-regulated grade natural gas" to minimize fuel contaminant and sulfate contributions to PM emissions from gas turbines. Unlike NOx and CO emissions, PM emissions from gas turbines cannot feasibly be reduced using combustion modifications or add-on emission control technology.

An identical turbine at Los Esteros has an emission limitation of 2.5 lb/hr, and the emission limitation has been consistently achieved. Although the SFERP turbines will be used less frequently than the Los Esteros turbines, and will spend a greater fraction of its operation transitioning between load levels, the District has determined that the Los Esteros turbines are the same type of equipment. The Los Esteros limitation of 2.5 lb/hr is more stringent than the 3.0 lb/hr originally proposed for SFERP, and therefore comprises BACT.

The applicant has agreed to accept a limitation of 2.5 lb/hr for PM.

The cooling tower will operate when inlet air chilling is necessary to maintain turbine output. For this evaluation, the cooling tower is assumed to operate 24 hours per day, 8760 hours per year. SFERP is proposing a cooling tower with a drift rate of 0.0010%. Maximum emissions from cooling tower are calculated from the maximum drift rate and maximum total dissolved solids of the make-up water. The two-cell cooling towers will emit a maximum of 0.04 pounds per hour and 0.2 tons per year of PM_{10}. Since the maximum emissions from the tower are less than 10 pounds per day and 5 tons per year, the cooling tower is exempt from District permit requirements and is not subject to either BACT or offset requirements.

Cooling Tower Emissions Data

Drift rate:	0.0010 %
Water Flow:	3912 gpm
Drift, lbm water/hr:	19.55
TDS level, ppm:	2000
PM_{10} Emission Results:	0.04 lb/hr and 0.17 tons/year

2. District Regulation 2-2-302: Offset Requirements, POCs and NO_x

General Requirements

District Regulation 2-2-302 requires that for new or modified sources at a facility that will be permitted to emit 35 tons per year of POCs or NO_x or more on a pollutant specific basis, the total project emissions must be offset. The applicant issued a request for proposals to emission reduction credit (ERC) holders to obtain sufficient ERCs to meet the offset requirements for this project. The applicant has committed to obtain offsets locally within the San Francisco area. It should be noted that in the case of POC and NO_x offsets, District regulations do not require consideration of the location of the source of the emission reduction credits relative to the location of the proposed emission increases.

Timing for Provision of Offsets

Pursuant to District Regulation 2-2-311, the applicant must provide the required valid emission reduction credits to mitigate the emission increases for the facility prior to the issuance of the Authority to Construct. Pursuant to District Regulation 2, Rule 3: Power Plants, the Authority to Construct will be issued after the CEC issues their Certificate for the power plant.

Offset Requirements by Pollutant

Pursuant to Regulation 2-2-302, federally enforceable emission offsets are required for POC and NO_x emission increases from permitted sources at facilities, that will emit 10 tons per year or more on a pollutant-specific basis. Because the SFERP facility will emit greater than 35 tons per year of NO_x, the project NO_x emissions must be offset at a ratio of 1.15 to 1.0. Since the SFERP will emit less than 10 tons/year of POC, the applicant is not required to provide POC emission offsets.

The projected PM_{10} emissions from the proposed sources are less than 100 tons per year, therefore SFERP does not trigger the PM_{10} offset requirement of Regulation 2-2-303 and no PM_{10} offsets are required. Pursuant to Regulation 2-2-303, emission reduction credits are not required for the proposed SO_2 emission increases associated with this project since the facility SO_2 emissions will not exceed 100 tons per year. Regulation 2-2-303 allows a facility that emits less than 100 tons of

these pollutants to voluntarily provide emission offsets. The applicant will provide mitigation for PM_{10} and $PM_{2.5}$ emissions from the project as required by the CEC.

Interpollutant Offset Ratios

Pursuant to District Regulations 2-2-302 and 2-2-302.2, the applicant has the option to substitute ERCs for precursor organic compounds to offset increased emissions of NO_x at a ratio of 1.0 to 1.0.

Current Proposed Offset Package

Table 5 summarizes the current offset obligation of the SFERP and the quantity of valid emission reduction credits (ERCs) that are required.

The applicant has committed to secure sufficient valid emission reduction credits to offset the emission increases from the permitted sources proposed for the SFERP. In March 2005, the applicant has signed an option agreement for the purchase of ERCs represented by Certificate No. 896 which were created through NOx emissions reduction achieved at the nearby Mirant Potrero power plant. The table below shows that 45.8 tons of NOx ERCs will be provided. SFERP will provide 47.5 tons of NOx ERCs, thereby offsetting both the NOx and POC emissions for the project.

Table 4
Facility Offset Requirements

Pollutant	Net Emission Increase (tpy)	Offset Ratio	Offsets Required (tpy)	Offsets to be Provided (tpy)
NOx	39.8	1.15:1	45.8	45.8
POC	7.7	N/A	0	0

B. Health Risk Screening Analysis

Pursuant to the BAAQMD Risk Evaluation Procedure, a Health Risk Screening Analysis must be prepared to determine the potential impact on public health resulting from the emissions of TACs from the SFERP. The potential TAC emissions (both carcinogenic and non-carcinogenic) from the SFERP were previously summarized in Table 2. In accordance with the requirements of the BAAQMD Risk Evaluation Procedure, the impact on public health due to the emission of these compounds was assessed utilizing air pollutant dispersion models. The results are summarized in Table 6.

Table 5
Health Risk Screening Analysis Results

Source	Multi-pathway Carcinogenic Risk (Risk in One Million)	Non-carcinogenic Chronic Hazard Index
Gas Turbines [a]	0.01	0.001
Cooling Tower	0.004	0.00002

[a] numbers represent combined risk from all sources

The health risk assessment performed by the applicant has been reviewed by the District's Toxics Evaluation Section and found to be in accordance with guidelines adopted by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA), the California Air Resources Board (CARB), and the California Air Pollution Control Officers Association (CAPCOA). Pursuant to the BAAQMD Risk Management Policy, the increased carcinogenic risk attributed to this project is considered to be not significant because it is less than 1.0 in one million. The chronic hazard index attributed to the emission of non-carcinogenic air contaminants is considered to be not significant because it is less than 1.0. Therefore, the SFERP facility is deemed to be in compliance with the BAAQMD Toxic Risk Management Policy.

C. Other Applicable District Rules and Regulations

Regulation 1, Section 301: Public Nuisance
This project is not expected to cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public with respect to any impacts resulting from the emission of air contaminants regulated by the District.

Air contaminants from this proposed power plant are highly unlikely to cause a public health nuisance and annoyance to the neighboring community. It is also unlikely to contribute significantly to injury from air contaminants. The plant will not contribute significantly to ozone, carbon monoxide (CO), and particulate matter (PM_{10} and $PM_{2.5}$) levels in the air.

Regulation 2, Rule 1, Sections 301 and 302: Authority to Construct and Permit to Operate
Pursuant to District Regulation 2-1-301 and 2-1-302, the SFERP has submitted an application to the District to obtain an Authority to Construct and Permit to Operate for the proposed S-1, S-2 & S-3 Gas Turbines.

Because the proposed cooling tower will not be used for the evaporative cooling of process water, it is exempt from District permit requirements (Regulations 2-1-301 and 2-1-302) pursuant to Regulation 2, Rule 1, Section 128.4. The worst-case emission projections indicate that the cooling tower will not emit air contaminants at rates above the risk management screening trigger levels as specified in Table 2-1-316 of Regulation 2, Rule 1. The applicant has also demonstrated that the cooling tower emissions have passed an HRSA in accordance with the District Risk Evaluation Procedure. Therefore, the cooling tower remains exempt from District permit requirements per Regulation 2-1-316.

Regulation 2, Rule 3: Power Plants
Pursuant to Regulation 2-3-403, this FDOC serves as the APCO's preliminary decision that the proposed power plant will meet the requirements of all applicable BAAQMD, state, and federal regulations. The FDOC contains proposed permit conditions to ensure compliance with those regulations. Pursuant to Regulation 2-3-304, the PDOC was subject to the public notice, public comment, and public inspection requirements contained in Regulations 2-2-406 and 407.

Regulation 2, Rule 6: Major Facility Review
Pursuant to Regulation 2, Rule 6, Section 404.1, the owner/operator of the SFERP must submit an application to the BAAQMD for a major facility review permit within 12 months after the facility becomes subject to Regulation 2, Rule 6. Pursuant to Regulation 2-6-212.1, the SFERP will become subject to Regulation 2, Rule 6 upon initial firing of any of the gas turbines (S-1, S-2, or S-3). However, because the Acid Rain requirements are also contained in the MFR permit, the application must be submitted much earlier (see below).

Regulation 2, Rule 7: Acid Rain
The SFERP gas turbine units and heat recovery steam generators will be subject to the requirements of Title IV of the federal Clean Air Act. The requirements of the Acid Rain Program are outlined in 40 CFR Part 72. The specifications for the type and operation of continuous emission monitors (CEMs) for pollutants that contribute to the formation of acid rain are given in 40 CFR Part 75. District Regulation 2, Rule 7 incorporates by reference the provisions of 40 CFR Part 72. Pursuant to 40 CFR Part 72.30(b)(2)(ii), SFERP must submit an Acid Rain Permit Application to the District at least 24 months prior to the date on which each unit commences operation. Pursuant to 40 CFR Part 72.2, "commence operation" includes the start-up of the unit's combustion chamber. The applicant filed an Acid Rain permit application for the project on August 23, 2005.

Regulation 6: Particulate Matter and Visible Emissions
Through the use of low-NO_x burner technology and proper combustion practices, the combustion of natural gas at the proposed gas turbines is not expected to result in visible emissions. Specifically, the facility's combustion sources are expected to comply with Regulation 6, including Sections 301 (Ringelmann No. 1 Limitation), 302 (Opacity Limitation) with visible emissions not to exceed 20% opacity, and 310 (Particulate Weight Limitation) with particulate matter emissions of less than 0.15 grains per dry standard cubic foot of exhaust gas volume. As calculated in accordance with Regulation 6-310.3, the grain loading resulting from the simultaneous operation of each power train is 0.0025 gr/dscf @ 6% O_2.

With a maximum total dissolved solids content of 2000 mg/l, flow rate and corresponding maximum PM_{10} emission rate of 0.04 lb/hr, the proposed 2-cell cooling towers are also expected to comply with the requirements of Regulation 6.

Particulate matter emissions associated with the construction of the facility are exempt from District permit requirements but are subject to Regulation 6. It is expected that the California Energy Commission will consider conditions on construction activities, and may require the use of water and/or chemical dust suppressants to minimize PM_{10} emissions and prevent visible particulate emissions.

Regulation 7: Odorous Substances
Regulation 7-302 prohibits the discharge of odorous substances, which remain odorous beyond the facility property line after dilution with four parts odor-free air. Regulation 7-302 limits ammonia emissions to 5000 ppm. Since the ammonia emissions from the three proposed CTG power trains will each be limited by permit condition to 10 ppmvd @ 15% O_2, the applicant is expected to comply with the requirements of Regulation 7.

Regulation 8: Organic Compounds
This facility is exempt from Regulation 8, Rule 2, "Miscellaneous Operations" per Regulation 8-2-110, since natural gas will be fired exclusively at the SFERP.

The use of solvents for cleaning and maintenance at the SFERP is expected to comply with Regulation 8, Rule 4, "General Solvent and Surface Coating Operations" Section 302.1 by emitting less than 5 tons per year of volatile organic compounds.

Regulation 9, Rule 1: Inorganic Gaseous Pollutants, Sulfur Dioxide
This regulation establishes emission limits for sulfur dioxide from all sources and applies to the combustion sources at this facility. Section 301: Limitations on Ground Level Concentrations, prohibits emissions that would result in ground level SO_2 concentrations in excess of 0.5 ppm continuously for 3 consecutive minutes, 0.25 ppm averaged over 60 consecutive minutes, or 0.05 ppm averaged over 24 hours. Section 302: General Emission Limitation, prohibits SO_2 emissions in excess of 300 ppmv (dry). With maximum projected SO_2 emissions of less than 1 ppmv, the gas turbines are not expected to exceed the ground level SO_2 concentration limit in Section 301, and easily complies with Section 302.

Regulation 9, Rule 3: Inorganic Gaseous Pollutants, Nitrogen Oxides from Heat Transfer Operations
The proposed combustion gas turbines (each rated at 487.3 MM Btu/hr, HHV) will comply with the Regulation 9-3-303 NO_x limit of 125 ppm by complying with a permit condition nitrogen oxide emission limit of 2.5 ppmvd @ 15% O_2.

Regulation 9, Rule 9: Inorganic Gaseous Pollutants, Nitrogen Oxides from Stationary Gas Turbines
Because each of the proposed combustion gas turbines will be limited by permit conditions to NO_x emissions of 2.5 ppmvd @ 15% O_2, they are expected to comply with the Regulation 9-9-301.3 NO_x limitation of 9 ppmvd @ 15% O_2. In addition, the continuous emission monitoring (CEM) system will be installed to satisfy the monitoring and recordkeeping requirements of this rule.

Regulation 10: 40 CFR 60, Subpart GG- Standards of Performance for Stationary Gas Turbines
Regulation 10 (40 CFR 60, Subpart GG) was adopted by reference from the federal New Source Performance Standards (NSPS) for stationary gas turbines. This regulation requires monitoring of fuel; imposes limits on the emissions of NO_x, SO_2, and PM; requires source testing of the stack emissions; process monitoring and data collection and recordkeeping. All of the BACT limits imposed on the combustion turbines are more stringent than the requirements of the NSPS emissions limits. The SFERP will comply with the NSPS. New gas turbines may be subject to, and if subject, would be in compliance with, the proposed new Subpart KKKK when it is finalized by EPA. If Subpart KKKK is ultimately adopted and is determined to be applicable to the proposed SFERP gas turbines, Subpart GG would not apply.

40 CFR 63, Subpart YYYY-National Emissions Standards for Hazardous Air Pollutants for Stationary Combustion Turbines.

40 CFR 63, Subpart YYYY for hazardous air pollutant emissions requires that a facility emitting more than 10 tons per year of single HAP or more than 25 tons per year for any combination of HAPs will be subject to this requirement. Since, this facility will not emit more than 10 tons for single HAP or 25 tons for any combination, it is not subject to 40 CFR Part 63, Subpart YYYY.

D. CEQA

The CEQA requirements of Districts Regulation 2-1-426 are met since the CEC is the lead agency on this project. The CEC is thus responsible for conducting the CEQA review and preparing the CEQA document for this project. The CEC's final certification and licensure will serve as the EIR equivalent pursuant to the CEC's certified regulatory program (as specified in CEQA Guidelines Section 15253(b) and Public Resources Code Sections 21080.5 and 25523).

IV. Permit Conditions

The following permit conditions will be imposed to assure that the proposed project complies with all applicable District, State, and Federal regulations. The conditions limit operating parameters such as fuel use, stack gas emission concentrations, and mass emission rates. Permit conditions will also specify abatement device operation and performance levels. To aid enforcement efforts, conditions specifying emission monitoring, source testing, and record keeping requirements are included. Furthermore, pollutant mass emission limits (in units of lb/hr and lb/MMBtu of natural gas fired) will ensure that daily and annual emission rate limitations are not exceeded.

Compliance with CO and NO_x limits will be verified by continuous emission monitors (CEMs) that will be in operation during all turbine operating modes, including start-up and shutdown. If the CO and NOx CEMs are not capable of accurately assessing gas turbine start-up and shutdown mass emission rates due to variable gas content and the differing response times of the gas monitors, then start-up and shutdown mass emission rates will be based upon annual source test results. Compliance with POC, SO_2, and PM_{10} mass emission limits will be verified by annual source testing.

In addition to permit conditions that apply to the designed operation of each CTG power train, conditions will be imposed that govern equipment operation during the initial commissioning period when the CTGs will operate without their SCR systems and oxidation catalysts fully operational. During this commissioning period, the gas turbines will be tested, control systems will be adjusted, and ducts leading to the stack tubes will be cleaned. Permit Conditions 1 through 12 apply to this commissioning period and are intended to minimize emissions and insure that those emissions will not contribute to the exceedence of any short-term applicable ambient air quality standard.

San Francisco Electric Reliability Project
Permit Conditions

Definitions:

Clock Hour:	Any continuous 60-minute period beginning on the hour.
Calendar Day:	Any continuous 24-hour period beginning at 12:00 AM or 0000 hours.
Year:	Any consecutive twelve-month period of time
Heat Input:	All heat inputs refer to the heat input at the higher heating value (HHV) of the fuel, in Btu/scf.
Rolling 3-hour period:	Any three-hour period that begins on the hour and does not include start-up or shutdown periods.
Firing Hours:	Period of time during which fuel is flowing to a unit, measured in fifteen-minute increments.
MM Btu:	million British thermal units
Gas Turbine Start-up Mode:	The lesser of the first 120 minutes of continuous fuel flow to the Gas Turbine after fuel flow is initiated or the period of time from Gas Turbine fuel flow initiation until the Gas Turbine achieves two consecutive CEM data points in compliance with the emission concentration limits of conditions 20(b) and 20(d).
Gas Turbine Shutdown Mode:	The lesser of the 30 minute period immediately prior to the termination of fuel flow to the Gas Turbine or the period of time from non-compliance with any requirement listed in Conditions 20(b) through 20(d) until termination of fuel flow to the Gas Turbine.
Specified PAHs:	The polycyclic aromatic hydrocarbons listed below shall be considered to Specified PAHs for these permit conditions. Any emission limits for Specified PAHs refer to the sum of the emissions for all six of the following compounds. Benzo[a]anthracene Benzo[b]fluoranthene Benzo[k]fluoranthene Benzo[a]pyrene Dibenzo[a,h]anthracene Indeno[1,2,3-cd]pyrene
Corrected Concentration:	The concentration of any pollutant (generally NO_x, CO, or NH_3) corrected to a standard stack gas oxygen concentration. For emission point P-1 (exhaust stack of S-1 Gas Turbine), emission point P-2 (exhaust stack of S-2 Gas Turbine) and P-3 (exhaust stack of S-3 Gas Turbine) the standard stack gas oxygen concentration is 15% O_2 by volume on a dry basis.
Commissioning Activities:	All testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the SFERP construction contractor to insure safe and reliable steady state operation of the gas turbines, heat recovery steam generators, steam turbine, and associated electrical delivery systems.

Commissioning Period:	The Period shall commence when all mechanical, electrical, and control systems are installed and individual system start-up has been completed, or when a gas turbine is first fired, whichever occurs first. The period shall terminate when the plant has completed performance testing, is available for commercial operation, and has initiated sales to the power exchange.
Precursor Organic Compounds (POCs):	Any compound of carbon, excluding methane, ethane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate
CEC CPM:	California Energy Commission Compliance Program Manager
SFERP:	San Francisco Electric Reliability Project
*	Not Federally Enforceable

Conditions for the Commissioning Period

1. The owner/operator of the SFERP shall minimize emissions of carbon monoxide and nitrogen oxides from S-1, S-2, and S-3, Gas Turbine Combustors to the maximum extent possible during the commissioning period. Parts 1 through 12 will only apply during the commissioning period as defined above. Unless otherwise indicated, Parts 13 through 42 will apply after the commissioning period has ended.

2. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall ensure that S-1, S-2, and S-3, Gas Turbine Combustors are tuned to minimize the emissions of carbon monoxide and nitrogen oxides.

3. At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturers and the construction contractor, the owner/operator shall install, adjust, and operate A-1 through A-6, SCR and Oxidation Systems, to minimize the emissions of carbon monoxide and nitrogen oxides from S-1, S-2, and S-3, Gas Turbine Combustors.

4. Coincident with the as-designed operation of A-1 thru A-6, SCR and Oxidation Systems, pursuant to Parts 3, 8, 9 and 10 of this condition, the owner/operator shall ensure that the Gas Turbine Combustors (S-1, S-2, and S-3) comply with the NO_x and CO emission limitations specified in Parts 20(a) through 20(d) of this condition.

5. The owner/operator of the SFERP shall prepare a plan describing the procedures to be followed during the commissioning of the gas turbines. The plan shall be submitted the District Engineering Division and the CEC CPM at least four weeks prior to first firing of S-1, S-2, or S-3, Gas Turbine Combustors. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the Water Injection system, the installation and operation of the SCR systems and oxidation catalysts, the installation, calibration, and testing of the CO and NO_x continuous emission monitors, and any activities requiring the firing of the Gas Turbine Combustors (S-1, S-2, and S-3) without abatement by their respective SCR and Oxidation Systems. No Gas Turbine Combustor (S-1, S-2, or S-3) shall be fired sooner than 28 days after the District receives the commissioning plan.

6. During the commissioning period, the owner/operator of the SFERP shall demonstrate compliance with Parts 8 through 11 of this condition through the use of properly operated and maintained continuous emission monitors and data recorders for the following parameters:
   - firing hours for each gas turbine (S-1, S-2, and S-3)
   - fuel flow rates to each train
   - stack gas nitrogen oxide emission concentrations at P-1, P-2, and P-3
   - stack gas carbon monoxide emission concentrations P-1, P-2, and P-3
   - stack gas oxygen or carbon dioxide concentrations P-1, P-2, and P-3

   The owner/operator shall monitor the parameters and record at least once every 15 minutes (excluding normal calibration periods or when the monitor source is not in operation) for the Gas

Turbine Combustors (S-1, S-2, and S-3). The owner/operator shall use District-approved methods to calculate heat input rates, NO_x (as NO_2) mass emission rates, carbon monoxide mass emission rates, and NO_x and CO emission concentrations, summarized for each clock hour and each calendar day. All records shall be retained on site for at least 5 years from the date of entry and made available to District personnel upon request.

7. The owner/operator shall install, calibrate, and properly operate District-approved continuous emission monitors specified in Part 6 prior to the first firing of the Gas Turbine Combustors (S-1, S-2, and S-3). After first firing of the turbines, the detection range of these continuous emission monitors must be adjusted as necessary to accurately measure the resulting range of CO and NO_x emission concentrations. The type, specifications, and location of these monitors shall be subject to District review and approval (by the District's Source Test Section).

8. The owner/operator shall not exceed 100 hours of firing during the commissioning period of S-1, Gas Turbine Combustor without abatement of nitrogen oxide emissions by A-1, SCR System. Such operation of S-1, Gas Turbine Combustor without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District's Engineering and Enforcement Divisions, and the unused balance of the 100 firing hours without abatement shall expire.

9. The owner/operator shall not exceed 100 hours of firing during the commissioning period of S-2, Gas Turbine Combustor without abatement of nitrogen oxide emissions by A-3, SCR System. Such operation of S-2, Gas Turbine Combustor without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District's Engineering and Enforcement Divisions, and the unused balance of the 100 firing hours without abatement shall expire.

10. The owner/operator shall not exceed 100 hours of firing during the commissioning period of S-3, Gas Turbine Combustor without abatement of nitrogen oxide emissions by A-5, SCR System. Such operation of S-3, Gas Turbine Combustor without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR or Oxidation Catalyst Systems fully operational. Upon completion of these activities, the owner/operator shall provide written notice to the District Engineering and Enforcement Divisions. and the unused balance of the 100 firing hours without abatement shall expire.

11. The owner/operator shall calculate the total mass emissions of nitrogen oxides, carbon monoxide, precursor organic compounds, PM_{10}, and sulfur dioxide that are emitted by each Gas Turbine Combustor (S-1, S-2, and S-3) during the commissioning period. These emissions count towards the consecutive twelve-month emission limitations specified in Part 23 of this condition.

12. Prior to the end of the Commissioning Period, the owner/operator shall conduct a District- and CEC-approved source test using external continuous emission monitors to determine compliance with Part 18 of this condition. The source test shall determine NO_x, CO, and POC emissions

during start-up and shutdown of the gas turbines. The POC emissions shall be analyzed for methane and ethane to account for the presence of unburned natural gas. The source test shall include a minimum of three start-up and three shutdown periods. No later than twenty working days before the execution of the source tests, the owner/operator shall submit to the District and the CEC Compliance Program Manager (CPM) a detailed source test plan designed to satisfy the requirements of this condition. The District and the CEC CPM will notify the owner/operator of any necessary modifications to the plan within 20 working days of receipt of the plan; otherwise, the plan shall be deemed approved. The owner/operator shall incorporate the District and CEC CPM comments into the test plan. The owner/operator shall notify the District and the CEC CPM within seven (7) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CEC CPM within 30 days of the source testing date.

Conditions for the Gas Turbine Combustors (S-1, S-2, and S-3)

13. The owner/operator shall ensure that S-1, S-2 and S-3, gas turbine combustors are fired on PUC natural gas exclusively. (Basis: BACT for SO_2 and PM_{10})

14. The owner/operator shall ensure that heat input rate to each Gas Turbine Combustor (S-1, S-2, or S-3) does not exceed 487.3 MM Btu per hour, averaged over one hour period. (Basis: 2-1-234)

15. Except during the commissioning period, the owner/operator of S-1, Gas Turbine Combustor shall properly operate and properly maintain A-1, Selective Catalytic Reduction (SCR) and A-2, Oxidation Catalyst Systems whenever fuel is combusted at the source and the A-1 catalyst bed has reached minimum operating temperature. (Basis: BACT for NO_x and CO)

16. Except during the commissioning period, the owner/operator of S-2, Gas Turbine Combustor shall properly operate and properly maintain A-3, Selective Catalytic Reduction (SCR) and A-4, Oxidation Catalyst Systems whenever fuel is combusted at those sources and the A-3 catalyst bed has reached minimum operating temperature. (Basis: BACT for NO_x and CO)

17. Except during the commissioning period, the owner/operator of S-3, Gas Turbine Combustor shall properly operate and properly maintain A-5, Selective Catalytic Reduction (SCR) and A-6, Oxidation Catalyst Systems whenever fuel is combusted at the source and the A-5 catalyst bed has reached minimum operating temperature. (Basis: BACT for NO_x and CO)

18 The owner/operator of the Gas Turbine Combustors (S-1, S-2, and S-3) shall comply with requirements (a) through (h) below under all operating scenarios, except requirements (a) through (h) do not apply during a gas turbine start-up or shutdown. (Basis: BACT and Toxic Risk Management Policy)

(a) Nitrogen oxide mass emissions (calculated in accordance with District-approved methods) at each P-1, P-2, and P-3 (the exhaust point for each Gas Turbine abated by SCR and Catalyst Oxidation) shall not exceed or 0.0090 lb/MM Btu (HHV). (Basis: BACT for NO_x)

(b) The nitrogen oxide emission concentration at each P-1, P-2, and P-3 shall not exceed 2.5 ppmv, on a dry basis, corrected to 15% O_2, averaged over any rolling 1-hour period. (Basis: BACT for NO_x)

(c) Carbon monoxide mass emissions at each P-1, P-2, and P-3 shall not exceed 0.0089 lb/MM Btu (HHV) of natural gas fired, averaged over any rolling 3-hour period. (Basis: BACT for CO)

(d) The carbon monoxide emission concentration at each P-1, P-2, and P-3 shall not exceed 4 ppmv, on a dry basis, corrected to 15% O_2, averaged over any rolling 3-hour period. (Basis: BACT for CO)

(e)* Ammonia (NH_3) emission concentrations at each P-1, P-2, and P-3 shall not exceed 10 ppmv, on a dry basis, corrected to 15% O_2, averaged over any one-hour period. The owner/operator shall verify, by continuous recording, the ammonia injection rate to A-1, A-3, and A-5, SCR Systems. The correlation between the gas turbine, A-1, A-3 and A-5, SCR System ammonia injection rates and the corresponding ammonia emission concentration at emission points P-1, P-2 and P-3 shall be determined in accordance with Part 25 of this condition. (Basis: TRMP for NH_3)

(f) Precursor organic compound (POC) mass emissions (as CH_4) at each P-1, P-2, and P-3 shall not exceed 0.0025 lb/MM Btu of natural gas fired. (Basis: BACT)

(g) Sulfur dioxide (SO_2) mass emissions at each P-1, P-2, and P-3 shall not exceed 0.0028 lb/MM Btu of natural gas fired. (Basis: BACT)

(h) Particulate matter (PM_{10}) mass emissions at each P-1, P-2, and P-3 shall not exceed 2.5 pounds per hour. (Basis: BACT)

19. The owner/operator shall not exceed the regulated air pollutant mass emission rates from each of the Gas Turbine Combustors (S-1, S-2, and S-3) during a start-up or a shutdown as established below. (Basis: BACT)

	Start-Up (lb/hour)	**Shutdown (lb/hour)**
Oxides of Nitrogen (as NO_2)	40	40
Carbon Monoxide (CO)	10	10
Precursor Organic Compounds (as CH_4)	2	2

20. The owner/operator of the Gas Turbines (S-1, S-2 and S-3) shall not exceed the following daily limits for each turbine during any one calendar day. (Basis: Cumulative Increase)

	Daily Limits, lb/day
Oxides of Nitrogen (as NO_2)	283
Carbon Monoxide (CO)	132
Precursor organic Compounds (as CH_4)	34
Particulate Matter	60
Sulfur Dioxide (SO_2)	33
Ammonia (NH_3)	156

21. The owner/operator shall ensure that the cumulative combined emissions from the Gas Turbine Combustors (S-1, S-2, and S-3) do not exceed the following limits during any consecutive twelve-month period, including emissions generated during gas turbine start-ups and shutdowns:

(a) 39.8 tons of NO_x (as NO_2) per rolling 365 day period;

(b) 27.9 tons of CO per rolling 365 day period;

(c) 7.7 tons of POC (as CH_4) per rolling 365 day period;

(d) 15 tons of PM_{10} per rolling 365 day period; and
(e) 2.7 tons of SO_2 per rolling 365 day period.
(Basis: Cumulative Increase)

22.* The owner/operator shall ensure that the maximum projected annual toxic air contaminant emissions from the Gas Turbine Combustors (S-1, S-2, and S-3) not exceed the following limits:

2,110 pounds of formaldehyde per year
235 pounds of acetaldehyde per year
21 pounds of acrolein per year
19 pounds of benzene per year

unless the following requirement is satisfied: The owner/operator shall perform a health risk assessment using the emission rates determined by annual source test and the most current Bay Area Air Quality Management District-approved procedures and unit risk factors in effect at the time of the analysis. This risk analysis shall be submitted to the District and the CEC CPM within 60 days of the source test date. The owner/operator may request that the District and the CEC CPM revise the carcinogenic compound emission limits specified above. If the owner/operator demonstrates to the satisfaction of the APCO that these revised emission limits will result in a cancer risk of not more than 1.0 in one million, the District and the CEC CPM may, at their discretion, adjust the carcinogenic compound emission limits listed above. (Basis: TRMP)

23 The owner/operator shall demonstrate compliance with Parts 14 through15, 18(a) through 18(d), 19, 21(a), and 21(b) by using properly operated and maintained continuous monitors (during all hours of operation including equipment start-up and shutdown periods) for all of the following parameters in (a) through (d) below.

(a) Firing Hours and Fuel Flow Rates for each of the following sources: S-1, S-2, and S-3 combined.
(b) Carbon Dioxide (CO2) or Oxygen (O2) concentrations, Nitrogen Oxides (NOx) concentrations, and Carbon Monoxide (CO) concentrations at each of the following exhaust points: P-1, P-2, and P-3.
(c) Ammonia injection rate at A-1, A-3, and A-5, SCR Systems
(d) Water or steam injection rate at S-1, S-2, and S-3 Gas Turbine Combustors

The owner/operator shall record all of the above parameters measured in (a) though (d) every 15 minutes (excluding normal calibration periods) and shall summarize all of the above parameters for each clock hour. For each calendar day, the owner/operator shall calculate and record the total firing hours, the average hourly fuel flow rates, and average hourly pollutant emission concentrations. (Basis: District Regulations 1-520.1, 9-9-501, BACT, Offsets, Cumulative Increase)

24 The owner/operator shall use the parameters measured in Part 23(a) through (d) and District-approved calculation methods to calculate the parameters below.

(a) Heat Input Rate for each of the following sources: S-1, S-2, and S-3.
(b) Corrected NOx concentrations, NOx mass emissions (as NO2), corrected CO concentrations, and CO mass emissions at each of the following exhaust points: P-1, P-2, and P-3.

Applicable to emission points P-1, P-2, and P-3, the owner/operator shall record the parameters specified above at least once every 15 minutes (excluding normal calibration periods). (Basis: District Regulations 1-520.1, 9-9-501, BACT, Offsets, Cumulative Increase)

25. As specified below, the owner/operator shall calculate and record the following data:
    (a) total Heat Input Rate for every clock hour and the average hourly Heat Input Rate.
    (b) on an hourly basis, the cumulative total Heat Input Rate for each calendar day for the following: each Gas Turbine and all three sources (S-1, S-2, and S-3).
    (c) the average NO_x mass emissions (as NO_2), CO mass emissions, and corrected NO_x and CO emission concentrations for every clock hour.
    (d) on an hourly basis, the cumulative total NO_x mass emissions (as NO_2) and the cumulative total CO mass emissions, for each calendar day for the following: each Gas Turbine (S-1, S-2, and S-3) combined.
    (e) For each calendar day, the average hourly Heat Input Rates, Corrected NO_x emission concentrations, NO_x mass emissions (as NO_2), corrected CO emission concentrations, and CO mass emissions for each Gas Turbine combined.
    (f) On a daily basis, the cumulative total NO_x mass emissions (as NO_2) and cumulative total CO mass emissions, for the previous consecutive twelve month period for all three sources (S-1, S-2, and S-3) combined.

    (Basis: District Regulations 1-520.1, 9-9-501, BACT, Offsets, Cumulative Increase)

26. To demonstrate compliance with parts 18(f), 18(g), 18(h), 21(c), 21(d) and 21(e), the owner/operator shall calculate and record on a daily basis, the Precursor Organic Compound (POC) mass emissions, Fine Particulate Matter (PM_{10}) mass emissions (including condensable particulate matter), and Sulfur Dioxide (SO_2) mass emissions from each power train. The owner/operator shall use the actual Heat Input Rates calculated pursuant to Part 28, actual Gas Turbine Start-up Times, actual Gas Turbine Shutdown Times, and CEC and District-approved emission factors to calculate these emissions. The calculated emissions shall be presented as follows:
    (a) For each calendar day, POC, PM_{10}, and SO_2 emissions shall be summarized for: each power train (S-1, S-2, and S-3) combined.
    (b) On a daily basis, the 365 day rolling average cumulative total POC, PM_{10}, and SO_2 mass emissions, for all three sources (S-1, S-2, and S-3) combined.

    (Basis: Offsets, Cumulative Increase)

27.* To demonstrate compliance with Part 22, the owner/operator shall calculate and record on an annual basis the maximum projected annual emissions of: Acetaldehyde, Acrolein, Formaldehyde and Benzene. Maximum projected annual emissions shall be calculated using the maximum Heat Input Rate of 5,847,600 MM Btu/year and the highest emission factor (pounds of pollutant per MM Btu of Heat Input) determined by any source test of the S-1, S-2, and S-3 Gas Turbine Combustors. (Basis: TRMP)

28.* Within 120 days of start-up of the SFERP, the owner/operator shall conduct a District-approved source test at the exhaust point P-1, P-2, or P-3 to determine the corrected ammonia (NH_3) emission concentration compliance with Part 18(e). The source test shall determine the

correlation between the heat input rates of each gas turbine S-1, S-2, and S-3 and NH_3 mass emissions. (Basis: TRMP)

29.* The owner/operator shall determine the SCR System ammonia injection rate and the corresponding NH_3 emission concentration at emission point P-1, P-2, or P-3. The source test shall be conducted over the expected operating range of the turbine (including, but not limited to minimum, 70%, 85%, and 100% load) to establish the range of ammonia injection rates necessary to achieve NO_x emission reductions while maintaining ammonia slip levels. Continuing compliance with part 18(e) shall be demonstrated through calculations of corrected ammonia concentrations based upon the source test correlation and continuous records of ammonia injection rate. (Basis: TRMP)

30. Within 120 days of start-up of the SFERP and on an annual basis thereafter, the owner/operator shall conduct a District-approved source test on exhaust points P-1, P-2, and P-3 while each Gas Turbine Combustor is operating at maximum load to determine compliance with Parts 18(a), (b), (c), (d), (f), (g), and (h), while each Gas Turbine Combustor is operating at minimum load to determine compliance with Parts 18(b) and (d), and to verify the accuracy of the continuous emission monitors required in Part 23. The owner/operator shall test for (as a minimum): water content, stack gas flow rate, oxygen concentration, precursor organic compound concentration and mass emissions, nitrogen oxide concentration and mass emissions (as NO_2), carbon monoxide concentration and mass emissions, sulfur dioxide concentration and mass emissions, methane, ethane, and particulate matter (PM_{10}) emissions including condensable particulate matter. (Basis: BACT, offsets)

31.* Within 120 days of start-up of the SFERP and on a biennial basis (once every two years) thereafter, the owner/operator shall conduct a District-approved source test at the exhaust point P-1, P-2, or P-3 while the Gas Turbine Combustor is operating at maximum allowable operating rates to demonstrate compliance with Part 27. If three consecutive biennial source tests demonstrate that the annual emission rates calculated pursuant to Part 27 for any of the compounds listed below are less than the BAAQMD Toxic Risk Management Policy trigger levels shown, then the owner/operator may discontinue future testing for that pollutant:

Acetaldehyde $\leq$ 235 pounds/year
Acrolein $\leq$ 21 pounds/year
Benzene $\leq$ 19 pounds/year
Formaldehyde $\leq$ 2110 pounds/year

(Basis: TRMP)

32. The owner/operator shall obtain approval for all source test procedures from the District's Source Test Section and the CEC CPM prior to conducting any tests. The owner/operator shall comply with all applicable testing requirements for continuous emission monitors as specified in Volume V of the District's Manual of Procedures. The owner/operator shall notify the District's Source Test Section and the CEC CPM in writing of the source test protocols and projected test dates at least 7 days prior to the testing date(s). As indicated above, the owner/operator shall measure the contribution of condensable PM (back half) to the total PM_{10} emissions. However, the owner/operator may propose alternative measuring techniques to measure condensable PM such as the use of a dilution tunnel or other appropriate method used to capture semi-volatile

organic compounds. Source test results shall be submitted to the District and the CEC CPM within 60 days of conducting the tests. (Basis: BACT)

33. The owner/operator of the SFERP shall submit all reports (including, but not limited to monthly CEM reports, monitor breakdown reports, emission excess reports, equipment breakdown reports, etc.) as required by District Rules or Regulations and in accordance with all procedures and time limits specified in the Rule, Regulation, Manual of Procedures, or Enforcement Division Policies & Procedures Manual. (Basis: Regulation 2-6-502)

34. The owner/operator of the SFERP shall maintain all records and reports on site for a minimum of 5 years. These records shall include but are not limited to: continuous monitoring records (firing hours, fuel flows, emission rates, monitor excesses, breakdowns, etc.), source test and analytical records, natural gas sulfur content analysis results, emission calculation records, records of plant upsets and related incidents. The owner/operator shall make all records and reports available to District and the CEC CPM staff upon request. (Basis: Regulation 2-6-501)

35. The owner/operator of the SFERP shall notify the District and the CEC CPM of any violations of these permit conditions. Notification shall be submitted in a timely manner, in accordance with all applicable District Rules and Regulations, and the Manual of Procedures. Notwithstanding the notification and reporting requirements given in any District Rule, Regulation, or the Manual of Procedures, the owner/operator shall submit written notification (facsimile is acceptable) to the Enforcement Division within 96 hours of the violation of any permit condition. (Basis: Regulation 2-1-403)

36. The owner/operator of SFERP shall provide adequate stack sampling ports and platforms to enable the performance of source testing. The location and configuration of the stack sampling ports shall be subject to BAAQMD review and approval.
(Basis: Regulation 1-501)

37. Within 180 days of the issuance of the Authority to Construct for the SFERP, the owner/operator shall contact the BAAQMD Technical Services Division (Source Test Section) regarding requirements for the continuous monitors, sampling ports, platforms, and source tests required by parts 23, 28, 29, 30, and 31. All source testing and monitoring must be conducted in accordance with the BAAQMD Manual of Procedures or EPA methods. (Basis: Regulation 1-501)

38. Prior to the issuance of the BAAQMD Authority to Construct for the SFERP, the owner/operator shall provide to the District valid emission reduction credit banking certificates in the amount of 45.8 tons/year of Nitrogen Oxides or equivalent as defined by District Regulations 2-2-302.1 and 2-2-302.2. (Basis: Offsets)

39. Pursuant to BAAQMD Regulation 2, Rule 6, section 404.1, the owner/operator of the SFERP shall submit an application to the BAAQMD for a major facility review permit within 12 months of the issuance of the Authority to Construct . (Basis: Regulation 2-6-404.1)

40. Pursuant to 40 CFR Part 72.30(b)(2)(ii) of the Federal Acid Rain Program, the owner/operator of the SFERP shall not operate either of the gas turbines until either: 1) a Title IV Operating Permit has been issued; 2) 24 months after a Title IV Operating Permit Application has been submitted, to the District whichever is earlier. (Basis: Regulation 2, Rule 7)

41. The owner/operator of SFERP shall comply with the continuous emission monitoring requirements of 40 CFR Part 60 or 75 (Appendix A; Specifications and Test procedures, and Appendix B; Quality Assurance and Quality Control Procedures). (Basis: Regulation 2, Rule 7)

42. The owner/operator shall take monthly samples of the natural gas utilized at the SFERP and analyze for the sulfur content using District-approved laboratory methods, or shall obtain certified analytical results from the gas supplier. The sulfur content test results shall be retained on site for a minimum of five years from the test date and shall be utilized to satisfy the requirements of 40 CFR Part 60, subpart GG. (Basis: Recordkeeping)

V. Recommendation

The APCO has concluded that the proposed SFERP, which is composed of the sources listed below, complies with all applicable District rules and regulations. The following sources will be subject to the permit conditions and BACT and offset requirements discussed previously.

S-1 Combustion Turbine Generator (CTG) #1, General Electric LM-6000 PC Sprint, 487.3 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-1 Selective Catalytic Reduction (SCR) System and A-2 Oxidation Catalyst.

S-2 Combustion Turbine Generator (CTG) #2, General Electric LM-6000 PC Sprint, 487.3 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-3 Selective Catalytic Reduction (SCR) System A-4 Oxidation Catalyst.

S-3 Combustion Turbine Generator (CTG) #3, General Electric LM-6000 PC Sprint, 487.3 MMBtu/hr maximum rated capacity, natural gas fired only; Abated by A-5 Selective Catalytic Reduction (SCR) System A-6 Oxidation Catalyst.

S-4 Cooling Tower, Two Cells, 40’ H x 50’ L x 14’ W, 52,000 gpd (exempt permit per /requirements per District Regulation 2-1-103)

S-5 Aqueous Ammonia Storage Tank, 29% NH_3, 8’ dia. x 30 ‘L, capacity 11,300 gallons (exempt from permit requirements per District Regulation 2-1-123)