

**Bay Area Air Quality Management District**

939 Ellis Street  
San Francisco, CA 94109  
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**November 29, 2012**

**Final**

**Permit Evaluation**

**and**

**Statement of Basis**

**for**

**MINOR REVISION to**

**MAJOR FACILITY REVIEW PERMIT**

**for**

**San Francisco International Airport**

**Facility #A1784**

**Facility Address:**

SFO International Airport  
San Francisco, CA 94128

**Mailing Address:**

P. O. Box 8097  
San Francisco, CA 94128

Application Engineer: Kevin Oei

Site Engineer: Kevin Oei

Application: 24715

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## **Title V Statement of Basis**

### **A. Background**

This facility is subject to the Operating Permit requirements of Title V of the federal Clean Air Act, Part 70 of Title 40 of the Code of Federal Regulations (CFR), and BAAQMD Regulation 2, Rule 6, Major Facility Review because it is a major facility as defined by BAAQMD Regulation 2-6-212. It is a major facility because it has the “potential to emit” (as defined by BAAQMD Regulation 2-6-218) more than 100 tons per year of a regulated air pollutant.

Major Facility Operating permits (Title V permits) must meet specifications contained in 40 CFR Part 70 as contained in BAAQMD Regulation 2, Rule 6. The permits must contain all “applicable requirements” (as defined in BAAQMD Regulation 2-6-202), monitoring requirements, recordkeeping requirements, and reporting requirements. The permit holders must submit reports of all monitoring at least every six months and compliance certifications at least every year.

In the Bay Area, state and District requirements are also applicable requirements and are included in the permit. These requirements can be federally enforceable or non-federally enforceable. All applicable requirements are contained in Sections I through VI of the permit.

Each facility in the Bay Area is assigned a facility identifier that consists of a letter and a 4-digit number. This identifier is also considered to be the identifier for the permit. The identifier for this facility is A1784.

This facility received its initial Title V permit on April 14, 2004. This application is for a minor revision to the permit. The purpose of the revision is to change the permit condition ID# 25080 for S16 and S17, natural gas fired hot water heaters. The proposed permit shows all changes to the permit in strikeout/underline format.

The revision was evaluated via Application 23441. This evaluation is attached in Appendix A.

### **B. Facility Description**

The San Francisco International Airport is an airport facility where aircraft can land and take off, equipped with hangars, facilities for refueling and repair, and accommodations for passengers. In addition to the airport, the facility has a wastewater treatment facility and numerous emergency diesel generators to provide power in the event of a power outage. The main sources of emissions are boilers, emergency generators, and the small sewage treatment plant.

There has been no significant change in emissions due to this revision.

## **C. Permit Content**

The legal and factual basis for the permit follows. The permit sections are described in the order presented in the permit.

### **I. Standard Conditions**

This section contains administrative requirements and conditions that apply to all facilities. If the Title IV (Acid Rain) requirements for certain fossil-fuel fired electrical generating facilities or the accidental release (40 CFR § 68) programs apply, the section will contain a standard condition pertaining to these programs. Many of these conditions derive from 40 CFR § 70.6, Permit Content, which dictates certain standard conditions that must be placed in the permit. The language that the District has developed for many of these requirements has been adopted into the BAAQMD Manual of Procedures, Volume II, Part 3, Section 4, and therefore must appear in the permit.

The standard conditions also contain references to BAAQMD Regulation 1 and Regulation 2. These are the District's General Provisions and Permitting rules.

Changes to permit:

No changes are proposed.

### **II. Equipment**

This section of the permit lists all permitted or significant sources. Each source is identified by an S and a number (e.g., S24 or S-24).

Permitted sources are those sources that require a BAAQMD operating permit pursuant to BAAQMD Rule 2-1-302.

Significant sources are those sources that have a potential to emit of more than 2 tons per year of a "regulated air pollutant" (as defined in BAAQMD Rule 2-6-222) or 400 pounds per year of a "hazardous air pollutant" (as defined in BAAQMD Rule 2-6-210).

All abatement (control) devices that control permitted or significant sources are listed. Each abatement device whose primary function is to reduce emissions is identified by an A and a number (e.g., A24 or A-24). If a source is also an abatement device, such as when an engine controls VOC emissions, it will be listed in the abatement device table but will have an "S" number. An abatement device may also be a source (such as a thermal oxidizer that burns fuel) of secondary emissions. If the primary function of a device is to control emissions, it is considered an abatement (or "A") device. If the primary function of a device is a non-control function, the device is considered to be a source (or "S").

The equipment section is considered to be part of the facility description. It contains information that is necessary for applicability determinations, such as fuel types, contents or sizes of tanks, etc. This information is part of the factual basis of the permit.

Each of the permitted sources has previously been issued a permit to operate pursuant to the requirements of BAAQMD Regulation 2, Permits. These permits are issued in accordance with state law and the District's regulations. The capacities in the permitted sources table are the maximum allowable capacities for each source, pursuant to Standard Condition I.J and Regulation 2-1-403.

Changes to permit:

No changes are proposed.

### **III. Generally Applicable Requirements**

This section of the permit lists requirements that generally apply to all sources at a facility including insignificant sources and portable equipment that may not require a District permit. If a generally applicable requirement applies specifically to a source that is permitted or significant, the standard will also appear in Section IV and the monitoring for that requirement will appear in Sections IV and VII of the permit. Parts of this section apply to all facilities (e.g., particulate, architectural coating, odorous substance, and sandblasting standards). In addition, standards that apply to insignificant or unpermitted sources at a facility (e.g., refrigeration units that use more than 50 pounds of an ozone-depleting compound) are placed in this section.

Unpermitted sources are exempt from normal District permits pursuant to an exemption in BAAQMD Regulation 2, Rule 1. They may, however, be specifically described in a Title V permit if they are considered "significant sources" as defined in BAAQMD Rule 2-6-239.

Changes to permit:

No changes are proposed.

### **IV. Source-Specific Applicable Requirements**

This section of the permit lists the applicable requirements that apply to permitted or significant sources. These applicable requirements are contained in tables that pertain to one or more sources that have the same requirements. The order of the requirements is:

- District Rules
- SIP Rules (if any) are listed following the corresponding District rules. SIP rules are District rules that have been approved by EPA for inclusion in the California State Implementation Plan. SIP rules are "federally enforceable" and a "Y" (yes) indication will appear in the "Federally Enforceable" column. If the SIP rule is the current District rule, separate citation of the SIP rule is not necessary and the "Federally Enforceable" column will have a "Y" for "yes". If the SIP rule is not the current District rule, the SIP rule or the necessary portion of the SIP rule is cited separately after the District rule. The SIP portion will be federally enforceable; the non-SIP version will not be federally enforceable, unless EPA has approved it through another program.
- Other District requirements, such as the Manual of Procedures, as appropriate.
- Federal requirements (other than SIP provisions)
- BAAQMD permit conditions. The text of BAAQMD permit conditions is found in Section VI of the permit.

- Federal permit conditions. The text of Federal permit conditions, if any, is found in Section VI of the permit.

Section IV of the permit contains citations to all of the applicable requirements. The text of the requirements is found in the regulations, which are readily available on the District or EPA websites, or in the permit conditions, which are found in Section VI of the permit. All monitoring requirements are cited in Section IV. Section VII is a cross-reference between the limits and monitoring requirements. A discussion of monitoring is included in Section C.VII of this permit evaluation/statement of basis.

Changes to permit:

Permit Condition 25080 in Table IV-D for S-14, S-15, S-16, and S-17 has been revised to be consistent with the version in Section VI.

## **V. Schedule of Compliance**

A schedule of compliance is required in all Title V permits pursuant to BAAQMD Regulation 2-6-409.10 which provides that a major facility review permit shall contain the following information and provisions:

“409.10 A schedule of compliance containing the following elements:

- 10.1 A statement that the facility shall continue to comply with all applicable requirements with which it is currently in compliance;
- 10.2 A statement that the facility shall meet all applicable requirements on a timely basis as requirements become effective during the permit term; and
- 10.3 If the facility is out of compliance with an applicable requirement at the time of issuance, revision, or reopening, the schedule of compliance shall contain a plan by which the facility will achieve compliance. The plan shall contain deadlines for each item in the plan. The schedule of compliance shall also contain a requirement for submission of progress reports by the facility at least every six months. The progress reports shall contain the dates by which each item in the plan was achieved and an explanation of why any dates in the schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.”

Since the District has not determined that the facility is out of compliance with an applicable requirement, the schedule of compliance for this permit contains only sections 2-6-409.10.1 and 2-6-409.10.2.

Changes to permit:

There are no changes in compliance status.

## **VI. Permit Conditions**

During the Title V permit development, the District has reviewed the existing permit conditions, deleted the obsolete conditions, and, as appropriate, revised the conditions for clarity and enforceability. Each permit condition is identified with a unique numerical identifier, up to five digits.

When necessary to meet Title V requirements, additional monitoring, recordkeeping, or reporting requirements have been added to the permit.

All changes to existing permit conditions are clearly shown in “strike-out/underline” format in the proposed permit. When the permit is issued, all “strike-out” language will be deleted and all “underline” language will be retained, subject to consideration of comments received.

The existing permit conditions are derived from previously issued District Authorities to Construct (A/C) or Permits to Operate (P/O). Permit conditions may also be imposed or revised as part of the annual review of the facility by the District pursuant to California Health and Safety Code (H&SC) § 42301(e), through a variance pursuant to H&SC § 42350 *et seq.*, an order of abatement pursuant to H&SC § 42450 *et seq.*, or as an administrative revision initiated by District staff. After issuance of the Title V permit, permit conditions will be revised using the procedures in Regulation 2, Rule 6, Major Facility Review.

Conditions that are obsolete or that have no regulatory basis have been deleted from the permit.

Conditions have also been deleted due to the following:

- Redundancy in recordkeeping requirements.
- Redundancy in other conditions, regulations and rules.
- The condition has been superseded by other regulations and rules.
- The equipment has been taken out of service or is exempt.
- The event has already occurred (i.e. initial or start-up source tests).

The regulatory basis is listed following each condition. The regulatory basis may be a rule or regulation. The District is also using the following terms for regulatory basis:

- BACT: This term is used for a condition imposed by the Air Pollution Control Officer (APCO) to ensure compliance with the Best Available Control Technology in Regulation 2-2-301.
- Cumulative Increase: This term is used for a condition imposed by the APCO that limits a source’s operation to the operation described in the permit application pursuant to BAAQMD Regulation 2-1-403.
- Offsets: This term is used for a condition imposed by the APCO to ensure compliance with the use of offsets for the permitting of a source or with the banking of emissions from a source pursuant to Regulation 2, Rules 2 and 4.
- PSD: This term is used for a condition imposed by the APCO to ensure compliance with a Prevention of Significant Deterioration permit issued pursuant to Regulation 2, Rule 2.

Changes to permit:

Permit Condition 25080 has been revised to modify Parts 2 and 8 and to delete Parts 6 and 7. Part 2 has been modified to include total hourly heat input limit for S-14, S-15, S-16, and S-17. Part 6 has been deleted because it was redundant with Parts 4 and 5. Part 7 has been deleted because this facility has conducted initial demonstration of compliance with Parts 4 and 5. Part 7 has been renumbered as Part 6. The language in Part 8 has been modified because it referenced Part 7 which was deleted. Part 8 has been renumbered as Part 7.

## **VII. Applicable Limits and Compliance Monitoring Requirements**

This section of the permit is a summary of numerical limits and related monitoring requirements for each source. The summary includes a citation for each monitoring requirement, frequency of

monitoring, and type of monitoring. The applicable requirements for monitoring are completely contained in Sections IV, Source-Specific Applicable Requirements, and VI, Permit Conditions, of the permit.

Changes to permit:

Table VII-D has been modified to renumber Part 8 of Permit Condition 25080 as Part 7 because Part 7 was deleted. Table VII-D has also been modified to include total hourly heat input limit in Part 2 of Permit Condition 25080.

### **VIII. Test Methods**

This section of the permit lists test methods that are associated with standards in District or other rules. It is included only for reference. In most cases, the test methods in the rules are source test methods that can be used to determine compliance but are not required on an ongoing basis. They are not “applicable requirements” as defined by Regulation 2-6-202.

If a rule or permit condition requires ongoing testing, the requirement will also appear in Section IV of the permit.

Changes to permit:

No changes are proposed.

### **IX. Permit Shield:**

The District rules allow two types of permit shields. The permit shield types are defined as follows: (1) A provision in a major facility review permit explaining that specific federally enforceable regulations and standards do not apply to a source or group of sources, or (2) A provision in a major facility review permit explaining that specific federally enforceable applicable requirements for monitoring, recordkeeping and/or reporting are subsumed because other applicable requirements for monitoring, recordkeeping, and reporting in the permit will assure compliance with all emission limits.

The second type of permit shield is allowed by EPA’s “White Paper 2 for Improved Implementation of the Part 70 Operating Permits Program.” The District uses the second type of permit shield for all streamlining of monitoring, recordkeeping, and reporting requirements in Title V permits. The District’s program does not allow other types of streamlining in Title V permits.

This facility has no permit shields.

### **X. Revision History**

Changes to permit:

The revision history is updated.

### **XI. Glossary**

Changes to permit:



There is no change in the glossary.

**D. Alternate Operating Scenarios:**

No alternate operating scenario has been requested for this facility.

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- 24715\ A1784 Minor Revision SOB.docx

**APPENDIX A ENGINEERING EVALUATION**

**ENGINEERING EVALUATION**

Application 23441 – Boilers S-16, S-17. (2012)

Application 11596-Standby Diesel Generators S-640 & S-650 (2005)

**ENGINEERING EVALUATION  
SAN Francisco International Airport  
PLANT NO. 1784  
APPLICATION NO. 23441**

**BACKGROUND**

San Francisco Airport Authority is applying for an Authority to Construct and/or Permit to Operate the following equipment:

**S-16 Natural Gas Fired Hot Water Heater, International-Lamont TJW-C-25, 30.2 MM Btu/hr**  
**S-17 Natural Gas Fired Hot Water Heater, International-Lamont TJW-C-50, 50.9 MM Btu/hr**

The heaters are equipped with low-NO<sub>x</sub> burners and flue gas recirculation. Sources S-16 and S-17 are replacing existing heaters S-12 and S-13. S-16 operates 4032 hours per year and S-17 operates 2016 hours per year.

**EMISSION CALCULATION AND SUMMARY**

The following furnishes the emission calculation basis. Table 1 furnishes the emission factors for the S-16 and S-17 and emissions in lb/yr, lb/highest day, t/yr and total annual emissions in t/yr.. Table 2 furnishes the Plant Cumulative Emissions.

Calculation Basis for Sources S-16 and S-17:

<u>Parameter</u>	<u>S-16</u>	<u>S-17</u>
Maximum heat input (MM Btu/hr)	30.2	59.9
Operation (Days per Year)	168	84
Operation (hours per year)	4032	2016
HHV of Natural gas (Btu/cu.ft)	1020	1020
Heat input per year:		
--- MM Btu/Year	121,726	120,839.04
--- Therms/Year	1,217,260	1,208,390.4
--- MM Cu.ft. per Year	119.3	118.5

**Table 1: S-16 and S-17 Emission Factors and Emissions**

Pollutant	Emission Factor lb/MM Btu	Source S-16			Source S-17			Total Annual emission t/yr
		lb/yr	lb/day	t/yr	Lb/yr	Lb/day	t/yr	
NO <sub>x</sub>	0.011	1339	8	0.7	1329.2	15.8	0.7	1.4
CO	0.037	4503.9	26.8	2.3	4471	53.2	2.2	4.5
VOC	0.0012	146.1	0.9	0.1	145	1.7	0.1	0.2
PM <sub>10</sub>	0.005	608.6	3.6	0.3	604.2	7.2	0.3	0.6
SO <sub>2</sub>	0.0006	73.0	0.4	0.04	72.5	0.9	0.04	0.08

\* Emission factors guaranteed by S-16 and S-17 water heater manufacturer

**Table 2: Plant Cumulative Increase (since 4/5/91)**

Pollutant	Existing (TPY)	New (TPY)	Total (TPY)
NO <sub>x</sub>	0.0	1.4	1.4
CO	9.29	4.5	13.79
POC	0.03	0.2	0.23
PM <sub>10</sub>	1.32	0.6	1.92
SO <sub>2</sub>	0.01	0.08	0.09
NPOC	0	0	0

**Toxic Risk Screening:**

Emissions of toxic air contaminants from the natural gas fired water heaters S-16 and S-17 do not exceed any Toxic Air Contaminant trigger levels of Table 2-5-1 of Regulation 2-5.

**Table 3 Toxic Air Contaminant Emission**

Toxic Compound	Emission Factor lb/MM Btu	S-16		S-17		Trigger Levels	
		lb/hr	lb/yr	lb/hr	lb/yr	lb/hr	lb/yr
Benzene	2.06 E-6	0.00006	0.3	0.00012	0.25	2.9	6.4
Formaldehyde	7.35 E-5	0.002	9	0.004	8.88	0.21	30
Toluene	3.33 E-6	0.0001	0.4	0.0002	0.40	82	12

**STATEMENT OF COMPLIANCE**

The owner/operator of S-16 and S-17 Natural Gas Fired Water Heaters shall comply with Reg. 6-1 (Particulate Matter), Reg. 9-1-301 (Inorganic Gaseous Pollutants: Sulfur Dioxide for Limitations on Ground Level Concentrations), and Regulation 9-7. The owner/operator is expected to comply with Regulation 6-1 since the unit is fueled with natural gas. Thus for any period aggregating more than three minutes in any hour, there should be no visible emission as dark or darker than No. 1 on the Ringlemann Chart (Regulation 6-1-301) and no visible emission to exceed 20% opacity (Regulation 6-1-302). Sulfur oxides are also very low since natural gas is being used to fire the boiler. International Boiler Works guarantees NO<sub>x</sub> emissions of 9 ppmvd at 3% O<sub>2</sub> and CO emissions of 50 ppmvd at 3% O<sub>2</sub> while firing natural gas. The sources meet the NO<sub>x</sub> and CO limits of 30 ppmvd NO<sub>x</sub> at 3% O<sub>2</sub> and 400 ppmvd CO at 3% O<sub>2</sub> of Regulations 9-7-301.1 and 9-7-301.2 (Gaseous Fuel Emission Limits). Further the 9 ppm NO<sub>x</sub> emission guarantee by the boiler manufacturer also meets the standards that will be applicable from January 1, 2012.

**CEQA:**

The project is considered to be ministerial under the District's CEQA regulation 2-1-311 and therefore is not subject to CEQA review. The engineering review for this project requires only the application of standard permit conditions and standard emissions factors and therefore is not discretionary as defined by CEQA. (Permit Handbook Chapter 2.1 for Boilers)

The project is over 1000 feet from the nearest school and therefore not subject to the public notification requirements of Reg. 2-1-412.

**Best Available Control Technology:** In accordance with Regulation 2, Rule 2, Section 301, BACT is triggered for any new or modified source with the potential to emit 10 pounds or more per highest day of POC, NPOC, NO<sub>x</sub>, CO, SO<sub>2</sub> or PM<sub>10</sub>. Based on the emissions calculations above, BACT is triggered for both sources S-16 and S-17. For S-16 BACT is triggered since the CO emission is 26.8 lb/day exceeding the 10 lb/day BACT trigger limit. For source S-17 BACT is triggered since CO and NO<sub>x</sub> emission exceed 10 lb /day. For S-17 CO emission is 15.8 lb/day and NO<sub>x</sub> emission is 53.2 lb/day. S-16 complies with BAAQMD BACT Guidelines for boilers rated at less than 33.5 MMBtu/hr. (CO emissions of 50 ppmvd at 3% O<sub>2</sub>). For S-17 size boilers (59.9 MM Btu/hr) the NO<sub>x</sub> emission achieved in practice is 5 ppm. These boilers are equipped with ultra-low NO<sub>x</sub> burners. S-17 will be operating for 84 days in a year. The difference in the annual NO<sub>x</sub> emission between 9 ppm and 5 ppm is 0.3021 tons for S-17. The ultra-low NO<sub>x</sub> burners cost approximately \$200,000 more than the presently proposed low-NO<sub>x</sub> burners. Further the low-NO<sub>x</sub> burner emission of 9 ppmvd NO<sub>x</sub> @3% O<sub>2</sub> complies with the new Regulation 8-7-307 that will be the standard from January 1, 2012. Thus no further control will be required for S-17. Proper monitoring and record keeping will be part of the condition to assure compliance to the NO<sub>x</sub> and CO emission limits and annual throughput limit.

**Offsets:** Offsets must be provided for any new or modified source at a facility that emits more than 10 tons/yr of POC or NO<sub>x</sub> per Regulation 2-2-302. The District may provide offsets from the Small Facility Banking Account for a facility with emissions between 10 and 35 tons/yr of POC or NO<sub>x</sub>, provided that facility has no available offsets. The facility has triggered offsets in previous permit applications for NO<sub>x</sub>. This offset requirement was met by the small facility bank. In this application also the offset requirement of 1.334 tons per year of NO<sub>x</sub> and 0.176 ton per year of POC will be met by the small facility bank.

S-16 and S-17 are not subject to NSPS Subpart Dc—Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units—since they are exclusively fired on natural gas.

PSD and NESHAPS do not apply.

## PERMIT CONDITIONS

The following condition applies to the following sources;

**S-16 Natural Gas Fired Hot Water Heater, International-Lamont TJW-C-25, 30.19 MM Btu/hr**  
**S-17 Natural Gas Fired Hot Water Heater, International-Lamont TJW-C-50, 50.94 MM Btu/hr**

### Condition # 25080

1. The owner/operator shall fire exclusively natural gas fuel at sources S-16 and S-17 (basis: Cumulative Increase)
2. The owner/operator shall not exceed the total heat input of 1,217,260 therms at source S-16 and 1,208,390 therms at source S-17 during any consecutive 12 month period.
3. To determine compliance with the part 2, the owner/operator of S-16 and S-17 shall install a dedicated non-resettable totalizing natural gas meters for each source and shall maintain the monthly records of natural gas consumption in a District approved log. These logs shall be kept for at least 5 years and shall be made available to the District upon request. (basis: Cumulative Increase)

4. The owner/operator of each source S-16 and S-17 shall not allow NO<sub>x</sub> emissions, calculated as NO<sub>2</sub>, at the stack outlets to exceed 9 ppmvd @ 3% oxygen while operating at 25% to 100% full load range. (basis: Cumulative Increase, BACT)
5. The owner/operator of each source S-16 and S-17 shall not allow CO emissions at the stack outlets to exceed 50 ppmvd @ 3% oxygen while operating at 25% to 100% full load range. (basis: Cumulative Increase, BACT)
6. To determine compliance with Parts 4 and 5, the owner/operator of S-16 and S-17, within 30 days of startup, shall conduct a District approved source test in accordance with the District's Manual of Procedures. The owner/operator shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing. Within 30 days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition. (basis: Cumulative Increase, BACT, Regulation 2-1-403)
7. The owner/operator of S-16 and S-17 shall repeat source test of Part 6 once every two years to demonstrate compliance with Parts 4 and 5, and the results of these tests shall be submitted to the District's Source Test Section for review and disposition.

## RECOMMENDATION

Issue an Authority to Construct to San Francisco International Airport for the following sources subject to Condition #25080.

**S-16 Natural Gas Fired Hot Water Heater, International-Lamont TJW-C-25, 30.19 MM Btu/hr**  
**S-17 Natural Gas Fired Hot Water Heater, International-Lamont TJW-C-50, 50.94 MM Btu/hr**

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Hari Doss  
Air Quality Engineer II



**Addendum  
Engineering Evaluation  
San Francisco International Airport (Plant No. 1784)  
Application No. 23441**

**Background**

This is an addendum to the original evaluation report for Application No. 23441, which was approved on 08/01/2012.

San Francisco International Airport submitted results of the source tests for S-16 and S-17 conducted on 04/06/2012. Per memo dated 08/06/2012 from Tim Underwood of the District, the emissions from the boilers were in compliance with the emission limits in Permit Condition #25080.

Because San Francisco International Airport has demonstrated compliance with the emission limits in Permit Condition #25080 following the startup of the boilers, Part 6 of the condition should have been but was not deleted upon issuance of the Permits to Operate. Therefore, under this addendum, Part 6 of Permit Condition #25080 will be deleted and Part 7 will be slightly modified because it currently references Part 6.

**Permit Condition**

Condition #25080 -----

1. The owner/operator shall fire exclusively natural gas fuel at sources S-16 and S-17. (basis: Cumulative Increase)
2. The owner/operator shall not exceed the total heat input of 1,217,260 therms at source S-16 and 1,208,390 therms at source S-17 during any consecutive 12 month period.
3. To determine compliance with the part 2, the owner/operator of S-16 and S-17 shall install a dedicated non-resettable totalizing natural gas meters for each source and shall maintain the monthly records of natural gas consumption in a District approved log. These logs shall be kept for at least 5 years and shall be made available to the District upon request. (basis: Cumulative Increase)
4. The owner/operator of each source S-16 and S-17 shall not allow NO<sub>x</sub> emissions, calculated as NO<sub>2</sub>, at the stack outlets to exceed 9 ppmvd @ 3% oxygen while operating at 25% to 100% full load range. (basis: Cumulative Increase, BACT)
5. The owner/operator of each source S-16 and S-17 shall not allow CO emissions at the stack outlets to exceed 50 ppmvd @ 3% oxygen while operating at 25% to 100% full load range. (basis: Cumulative Increase, BACT)
6. ~~(A/C startup source test condition deleted.) To determine compliance with Parts 4 and 5, the owner/operator of S-16 and S-17, within 30 days of startup, shall conduct a District approved source test in accordance with the District's Manual of Procedures. The owner/operator shall notify the Manager of the District's Source Test Section at least seven (7) days prior to the test, to provide the District staff the option of observing the testing. Within 30 days of test completion, a comprehensive report of the test results shall be submitted to the Manager of the District's Source Test Section for review and disposition. (basis: Cumulative Increase, BACT, Regulation 2-1-403)~~
7. The owner/operator of S-16 and S-17 shall repeat perform a District approved source test ~~of Part 6~~ once every two years to demonstrate compliance with Parts 4 and 5, and the results of these tests shall be submitted to the District's Source Test Section for review and disposition.

**Recommendation**

I recommend Permit Condition #25080 be modified as shown in the above "Permit Condition" Section.

By: Kevin Oei *Kevin Oei* *8-14-12*  
Kevin Oei  
Air Quality Engineer

Date: 8/14/2012



**Addendum  
Engineering Evaluation  
San Francisco Airport (Plant No. 1784)  
Application No. 23441**

The following addition was done to Condition # 25080 at the request of the applicant and concurrence of acting manager Ms. Pam Leong:

The following addition was made to Part 2 of Condition 25080: There will be no change in the source or plant emissions due to this addition.

- Total heat input to sources S-14, S-15, S-16 and S-17 Shall not exceed 1560 therms per hour.

**Permit Condition:**

COND# 25080 -----

1. The owner/operator shall fire exclusively natural gas fuel at sources S-16 and S-17. (basis: Cumulative Increase)
2. The owner/operator shall not exceed the total heat input of 1,217,260 therms at source S-16 and 1,208,390 therms at source S-17 during any consecutive 12-month period. Total heat input to sources S-14, S-15, S-16 and S-17 Shall not exceed 1560 therms per hour.
3. To determine compliance with the part 2, the owner/operator of S-16 and S-17 shall install a dedicated non-resettable totalizing natural gas meters for each source and shall maintain the monthly records of natural gas consumption in a District approved log. These logs shall be kept for at least 5 years and shall be made available to the District upon request. (basis: Cumulative Increase)
4. The owner/operator of each source S-16 and S-17 shall not allow NOx emissions, calculated as NO2, at the stack outlets to exceed 9 ppmvd @ 3% oxygen while operating at 25% to 100% full load range. (basis: Cumulative Increase, BACT)
5. The owner/operator of each source S-16 and S-17 shall not allow CO emissions at the stack outlets to exceed 50 ppmvd @ 3% oxygen while operating at 25% to 100% full load range. (basis: Cumulative Increase, BACT)
6. (A/C startup source test condition deleted.)
7. The owner/operator of S-16 and S-17 shall perform a

District approved source test once every two years to demonstrate compliance with Parts 4 and 5, and the results of these tests shall be submitted to the District's Source Test Section for review and disposition.

Recommendation:

I recommend that Permit condition 25080 be modified to reflect the above change in Part 2



Hari S Doss  
Air Quality Engineer

Date 10/11/2012

## **APPENDIX B GLOSSARY**

### **APPENDIX B GLOSSARY**

**ACT**

Federal Clean Air Act

**APCO**

Air Pollution Control Officer

**ARB**

Air Resources Board

**BAAQMD**

Bay Area Air Quality Management District

**BACT**

Best Available Control Technology

**BARCT**

Best Available Retrofit Control Technology

**Basis**

The underlying authority that allows the District to impose requirements.

**CAA**

The federal Clean Air Act

**CAAQS**

California Ambient Air Quality Standards

**CAPCOA**

California Air Pollution Control Officers Association

**CCR**

**California Code of Regulations**

**CEC**

California Energy Commission

**CEQA**

California Environmental Quality Act

**CEM**

Continuous Emission Monitor: a monitoring device that provides a continuous direct measurement of some pollutant (e.g. NO<sub>x</sub> concentration) in an exhaust stream.

**CFR**

The Code of Federal Regulations. 40 CFR contains the implementing regulations for federal environmental statutes such as the Clean Air Act. Parts 50-99 of 40 CFR contain the requirements for air pollution programs.

**CO**

Carbon Monoxide

**CO<sub>2</sub>**

Carbon Dioxide

**Cumulative Increase**

The sum of permitted emissions from each new or modified source since a specified date pursuant to BAAQMD Rule 2-1-403, Permit Conditions (as amended by the District Board on 7/17/91) and SIP Rule 2-1-403, Permit Conditions (as approved by EPA on 6/23/95). Used to determine whether threshold-based requirements are triggered.

**District**

The Bay Area Air Quality Management District

**dscf**

Dry Standard Cubic Feet

**dscm**

Dry Standard Cubic Meter

**E 6, E 9, E 12**

Very large or very small number values are commonly expressed in a form called scientific notation, which consists of a decimal part multiplied by 10 raised to some power. For example, 4.53 E 6 equals  $(4.53) \times (10^6) = (4.53) \times (10 \times 10 \times 10 \times 10 \times 10 \times 10) = 4,530,000$ . Scientific notation is used to express large or small numbers without writing out long strings of zeros.

**EPA**

The federal Environmental Protection Agency.

**Excluded**

Not subject to any District regulations.

**Federally Enforceable, FE**

All limitations and conditions which are enforceable by the Administrator of the EPA including those requirements developed pursuant to 40 CFR Part 51, subpart I (NSR), Part 52.21 (PSD), Part 60 (NSPS), Part 61 (NESHAPs), Part 63 (HAP), and Part 72 (Permits Regulation, Acid Rain), including limitations and conditions contained in operating permits issued under an EPA-approved program that has been incorporated into the SIP.

**FP**

Filterable Particulate as measured by BAAQMD Method ST-15, Particulate.

**FR**

Federal Register

**GDF**

Gasoline Dispensing Facility

**GLM**

Ground Level Monitor

**grain**

1/7000 of a pound

**HAP**

Hazardous Air Pollutant. Any pollutant listed pursuant to Section 112(b) of the Act. Also refers to the program mandated by Title I, Section 112, of the Act and implemented by 40 CFR Part 63.

LOE

Loss of Exemption.

**Major Facility**

A facility with potential emissions of: (1) at least 100 tons per year of regulated air pollutants, (2) at least 10 tons per year of any single hazardous air pollutant, and/or (3) at least 25 tons per year of any combination of hazardous air pollutants, or such lesser quantity of hazardous air pollutants as determined by the EPA administrator.

**MFR**

Major Facility Review. The District's term for the federal operating permit program mandated by Title V of the Federal Clean Air Act and implemented by District Regulation 2, Rule 6.

**MOP**

The District's Manual of Procedures.

**MSDS**

Material Safety Data Sheet

**NA**

Not Applicable

**NAAQS**

National Ambient Air Quality Standards

**NESHAPS**

National Emission Standards for Hazardous Air Pollutants. See in 40 CFR Parts 61 and 63

**NMHC**

Non-methane Hydrocarbons (Same as NMOC)

**NMOC**

Non-methane Organic Compounds (Same as NMHC)

**NO<sub>x</sub>**

Oxides of nitrogen.

**NSPS**

Standards of Performance for New Stationary Sources. Federal standards for emissions from new stationary sources. Mandated by Title I, Section 111 of the Federal Clean Air Act, and implemented by 40 CFR Part 60 and District Regulation 10.

**NSR**

New Source Review. A federal program for pre-construction review and permitting of new and modified sources of pollutants for which criteria have been established in accordance with Section 108 of the Federal Clean Air Act. Mandated by Title I of the Federal Clean Air Act and implemented by 40 CFR Parts 51 and 52 and District Regulation 2, Rule 2. (Note: There are additional NSR requirements mandated by the California Clean Air Act.)

**O<sub>2</sub>**

The chemical name for naturally-occurring oxygen gas.

**Offset Requirement**

A New Source Review requirement to provide federally enforceable emission offsets for the emissions from a new or modified source. Applies to emissions of POC, NO<sub>x</sub>, PM<sub>10</sub>, and SO<sub>2</sub>.

**Phase II Acid Rain Facility**

A facility that generates electricity for sale through fossil-fuel combustion and is not exempted by 40 CFR 72 from Titles IV and V of the Clean Air Act.

**POC**

Precursor Organic Compounds

**PM**

Total Particulate Matter

**PM<sub>10</sub>**

Particulate matter with aerodynamic equivalent diameter of less than or equal to 10 microns

**PSD**

Prevention of Significant Deterioration. A federal program for permitting new and modified sources of those air pollutants for which the District is classified "attainment" of the National Air Ambient Quality Standards. Mandated by Title I of the Act and implemented by both 40 CFR Part 52 and District Regulation 2, Rule 2.

**SIP**

State Implementation Plan. State and District programs and regulations approved by EPA and developed in order to attain the National Air Ambient Quality Standards. Mandated by Title I of the Act.

**SO<sub>2</sub>**

Sulfur dioxide

**THC**

Total Hydrocarbons (NMHC + Methane)

**therm**

100,000 British Thermal Units

**Title V**

Title V of the federal Clean Air Act. Requires a federally enforceable operating permit program for major and certain other facilities.

**TOC**

Total Organic Compounds (NMOC + Methane, Same as THC)

**TPH**

Total Petroleum Hydrocarbons

**TRMP**

Toxic Risk Management Plan

**TSP**

Total Suspended Particulate

**VOC**

Volatile Organic Compounds

**Units of Measure:**

bhp	=	brake-horsepower
btu	=	British Thermal Unit
cfm	=	cubic feet per minute
g	=	grams
gal	=	gallon
gpm	=	gallons per minute
gr	=	grain
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m <sup>2</sup>	=	square meter
min	=	minute
M	=	thousand
MM	=	million
mm	=	millimeter
MMbtu	=	million btu
ppmv	=	parts per million, by volume
ppmw	=	parts per million, by weight
psia	=	pounds per square inch, absolute
psig	=	pounds per square inch, gauge
scfm	=	standard cubic feet per minute

yr = year

**Symbols:**

<	=	less than
>	=	greater than
≤	=	less than or equal to
≥	=	greater than or equal to