Bay Area Air Quality Management District

939 Ellis Street
San Francisco, CA 94109
(415) 771-6000

Permit Evaluation
and
Statement of Basis
for
RENEWAL of

MAJOR FACILITY REVIEW PERMIT

for

Calpine Pittsburg Power Plant
Facility #B1928

Facility Address:
901 Loveridge Road
Pittsburg, CA 94565

Mailing Address:
PO Box 551
Pittsburg, CA 94565-0055

Application Engineer: Dennis Jang
Site Engineer: Dennis Jang

Application: 10663

March 2006

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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 Volume 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, of more than 100 tons per year of a regulated air pollutant. This facility is exempt from the Acid Rain Program (40 CFR Part 72) pursuant to 40 CFR 72.6(b)(4)(i) since its power generating units (gas turbines) were constructed prior to November 15, 1990 and they supply less than one third of their potential electrical output on an annual basis to any utility power distribution system for sale. The gas turbines have been in operation at the facility since 1966 when they were under the ownership and control of Dow Chemical Company.

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 B1928.

This facility received its initial Title V permit on March 22, 2000. This application is for a permit renewal and was received by the District on August 30, 2004. Although the current permit expired on February 28, 2005, it continues in force until the District takes final action on the permit renewal because the facility submitted a complete renewal application to the District at least six months prior to the permit expiration date. The proposed permit shows all changes to the permit in strikeout/underline format.

B. Facility Description

The Calpine Pittsburg Power Plant (CPPP) is a cogeneration facility that generates electricity and produces steam for the Dow Chemical Company and sends the excess electricity to the power grid. Their permitted sources include three gas turbines, three waste heat boilers, and an auxiliary boiler. The auxiliary boiler was initially operated on June 9, 2003 after the original Title V permit was issued to the facility.

Although the Calpine Pittsburg Power Plant facility is contiguous with the Delta Energy Center, a Title V and Title IV (Acid Rain) facility that is also owned and operated by Calpine, it is permitted under a different plant number with respect to Title V, Title IV, and the District NSR permitting program. There are no additional requirements that are applicable to the Calpine Pittsburg Power Plant as a result of its connection to the Delta Energy Center.

Because of the installation and operation of the new auxiliary boiler, the facility emissions have increased by the following quantities:

NOx: 6 ton/year
CO: 20.3 ton/year
POC: 0.7 ton/year
PM_{10}: 2.7 ton/year
SO_2: 0.4 ton/year

The Calpine Pittsburg Power Plant is subject to the following annual facility mass emission limits:

NOx: 24.6 ton/year
CO: 133.7 ton/year
POC: 5.5 ton/year
PM_{10}: 9.8 ton/year
SO_2: 1.0 ton/year

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 for this section.

II. Equipment

This section of the permit lists all permitted or significant sources. Each source is identified by S and a number (for example, 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 of a "regulated air pollutant," as defined in BAAQMD Rule 2-6-222, per year or 400 pounds of a "hazardous air pollutant," as defined in BAAQMD Rule 2-6-210, per year.

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., 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.

There are no differences between the equipment list in the proposed renewal permit and the equipment list in the Title V renewal permit application.

Changes to permit:

The following are explanations of the differences in the equipment list shown in the initial Title V permit and the proposed renewal Title V permit:

Devices Permitted Since Initial Title V permit was issued:

S-11 Auxiliary Boiler, Foster-Wheeler, 306.5 MM BTU/hr, abated by A-8 Selective Catalytic Reduction System

The auxiliary boiler serves as a backup to the primary waste heat boilers (S-68, S-71, and S-74) and is only operated when some or all of the waste heat boilers are out of operation and are not

fulfilling their steam production obligation to Dow Chemical Company. Please see the attached engineering evaluation for application 3990 for further detail.

The permit conditions for S-11 Auxiliary Boiler were changed on August 31, 2005 to remove obsolete start-up conditions and to change the source test frequency from annual to once every 8,000 firing hours or every three years, whichever comes first. Please see the attached engineering evaluation for application 12919 for further detail.

S-69 Gas Generator GG-2
S-75 Gas Generator GG-5

The gas generators are used to replace the gas generator part of the existing gas turbines when they are down for maintenance. This allows the plant to meet its steam obligation during the frequent maintenance periods for the gas generators. Please see the attached engineering evaluation for application 2141 for further detail.

Changes to permit:

S-11, S-69, and S-70 will be added to Table II A as permitted sources.

The maximum rated heat input for S-67 Gas Turbine #1 will be corrected from 262 MM Btu/hr to 264.2 MM Btu/hr to agree with condition #19675, part 13, as determined under permit application 2141.

The maximum rated heat input for S-70 Gas Turbine #2 will be corrected from 292 MM Btu/hr to 330.2 MM Btu/hr to agree with condition #19675, part 13, as determined under permit application 2141.

The maximum rated heat input for S-73 Gas Turbine #3 will be corrected from 330 MM Btu/hr to 330.2 MM Btu/hr to agree with condition #19675, part 13, as determined under permit application 2141.

A-8 Selective Catalytic Reduction System, that abates NOx emissions from S-11 Auxiliary Boiler will be added to Table II B Abatement Devices.

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 pursuant to the definition in BAAQMD Rule 2-6-239.

Changes to permit:

Section III will be modified to say that SIP standards are now found on EPA's website and are not included as part of the permit.

The note regarding SIP information from the Rule Development Section will be deleted since the SIP standards are now found on EPA's website.

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.

Complex Applicability Determinations:

Acid Rain Program:

Each gas turbine is exempt from the Acid Rain Program (40 CFR Part 72) pursuant to 40 CFR 72.6(b)(4)(i) since each power generating unit (gas turbine) was constructed prior to November

15, 1990 and each supplies less than one third of its potential electrical output on an annual basis to any utility power distribution system for sale. The gas turbines have been in operation at the facility since 1966 when they were under the ownership and control of the Dow Chemical Company. Although the CPPP is under the same ownership and control as the Delta Energy Center and the DEC's gas turbines are subject to the Acid Rain Program, this does not make the CPPP's power generating units subject to the Acid Rain Program.

Compliance Assurance Monitoring (CAM) 40 CFR 64:

A pollutant-specific emissions unit at a major source that is required to obtain a part 70 (state operating permit) or part 71 (federal operating permit) is subject to CAM if it satisfies all of the following criteria outlined in 40 CFR 64 (a)(1) through (a)(3):

- The unit is subject to an emission limit/standard for the applicable regulated air pollutant; and
- The unit uses a control device to achieve compliance with any such emission limitation or standard; and
- The unit has potential pre-control device emissions of the applicable regulated air pollutant that are equal to or greater than 100% of the amount, in tons per year, required for a source to be classified as a major source.

The units (gas turbines and gas generators) at Calpine Pittsburg Power Plant meet all of the above criteria and are therefore subject to CAM. To be in compliance with CAM for NOx emissions, Calpine would have to continuously monitor the water injection rate at the gas turbines and gas generators (S-67, S-69, S-70, S-73, & S-75). However, 40 CFR 64.2 (b)(1)(vi) exempts Calpine from implementing CAM at the turbines if Calpine's operating permit, issued under the auspices of 40 CFR Part 70 (state operating permit program) or 71 (federal operating permit program), specifies a continuous compliance determination method to demonstrate compliance with federally enforceable emission limitations or standards.

The NOx emissions from the gas turbines and gas generators (S-67, S-69, S-70, S-73, & S-75) are controlled by water injection and are abated by Selective Catalytic Reduction (SCR) systems (A-188, A-189, and A-190), respectively. The NOx emissions from the turbines and gas generators are continuously monitored by continuous emission monitoring systems (CEMS) to demonstrate compliance with the NOx limits outlined in NSPS GG, and federally enforceable permit condition #19675, part 3. Therefore, the gas turbines and gas generators are exempt from CAM for NOx per 40 CFR 64.2 (b)(1)(vi).

The S-11 Auxiliary Boiler is also abated by an SCR system and employs Low-NOx burners and flue gas recirculation. However, its pre-control device emissions of NOx do not exceed 100 tons per year. Therefore, CAM does not apply to the S-11 Auxiliary Boiler.

National Emission Standards for Hazardous Air Pollutants (NESHAPs) Section 112(j):

The facility does not emit nor has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAPs at a rate of 25 tons or more per year as shown in table C below. Therefore, the facility is not subject to the 40 CFR 63 Maximum Achievable Control Technology (MACT) standards for combustion turbines (Subpart YYYY) and/or the

Industrial, Commercial, and Institutional Boilers and Process Heaters MACT standard (Subpart DDDDD). Please refer to Tables A, B, and C for detailed HAP emission calculations. Because the Calpine Pittsburg Power Plant (CPPP) is contiguous with the Delta Energy Center (DEC), the following tables include the HAP emissions from the gas turbines and heat recovery steam generator duct burners at the DEC.

Table A
HAP Emissions from Gas Turbines at
Calpine Pittsburg Power Plant (CPPP) and Delta Energy Center (DEC)

Hazardous Air Pollutant	Emission Factor (lb/MM BTU)	Combined Annual Emissions for six Gas Turbines (lb/year)	Combined Annual Emissions for six Gas Turbines (ton/year)
1,3-Butadiene	4.30E-07	2.60E+01	1.31E-02
Acetaldehyde	4.00E-05	2.42E+03	1.21E+00
Acrolein	6.40E-06	3.86E+02	1.94E-01
Benzene	1.20E-05	7.24E+02	3.64E-01
Ethylbenzene	3.20E-05	1.93E+03	9.72E-01
Formaldehyde	1.08E-04	6.56E+03	3.28E+00
Napthalene	1.30E-06	6.84E+01	3.95E-02
PAH	2.20E-06	1.70E+01	6.68E-02
Propylene Oxide	2.90E-05	2.25E+02	8.81E-01
Toluene	1.30E-04	1.01E+03	3.95E+00
Xylenes	6.40E-05	4.96E+02	1.94E+00

Note: Emission factors for HAPs excerpted from AP-42, Table 3.1-3, April 2000 version
Annual Emissions based upon 8,760 hours of operation per year per gas turbine;
8,099,496 MM BTU/year combined for CPPP Turbines
52,638,840 MM BTU/year combined for DEC turbines

Table B
HAP Emissions from Auxiliary Boiler & Waste Heat Boilers at CPPP and HRSGs at DEC

Hazardous Air Pollutant	Emission Factor (lb/MM scf)	Emission Factor (lb/MM BTU)	Combined Annual Emissions (lb/year)	Combined Annual Emissions (tpy)
2-Methylnaphthalene	2.40E-05	2.35E-08	2.83E-01	1.41E-04
3-Methylchloranthrene	1.80E-06	1.76E-09	2.12E-02	1.06E-05
7,12-Dimethylbenz(a)anthracene	1.60E-05	1.57E-08	1.89E-01	9.44E-05
Acenaphthene	1.80E-06	1.76E-09	2.12E-02	1.06E-05
Acenaphthylene	1.80E-06	1.76E-09	2.12E-02	1.06E-05

Table B HAP Emissions from Auxiliary Boiler & Waste Heat Boilers at CPPP and HRSGs at DEC				
Hazardous Air Pollutant	**Emission Factor (lb/MM scf)**	**Emission Factor (lb/MM BTU)**	**Combined Annual Emissions (lb/year)**	**Combined Annual Emissions (tpy)**
Anthracene	2.40E-06	2.35E-09	2.83E-02	1.41E-05
Arsenic	2.00E-04	1.96E-07	2.36E+00	1.18E-03
Barium	4.40E-03	4.31E-06	5.18E+01	2.59E-02
Benz(a)anthracene	1.80E-06	1.76E-09	2.12E-02	1.06E-05
Benzene	2.10E-03	2.06E-06	2.48E+01	1.24E-02
Benzo(a)pyrene	1.20E-06	1.18E-09	1.42E-02	7.10E-06
Benzo(b)fluoranthene	1.80E-06	1.76E-09	2.12E-02	1.06E-05
Benzo(g,h,i)perylene	1.20E-06	1.18E-09	1.42E-02	7.10E-06
Benzo(k)fluoranthene	1.80E-06	1.76E-09	2.12E-02	1.06E-05
Beryllium	1.20E-05	1.18E-08	1.42E-01	7.10E-05
Cadmium	1.10E-03	1.08E-06	1.30E+01	6.49E-03
Chromium	1.40E-03	1.37E-06	1.65E+01	8.24E-03
Chrysene	1.80E-06	1.76E-09	2.12E-02	1.06E-05
Cobalt	8.40E-05	8.24E-08	9.91E-01	4.96E-04
Copper	8.50E-04	8.33E-07	1.00E+01	5.01E-03
Dibenzo(a,h)anthracene	1.20E-06	1.18E-09	1.42E-02	7.10E-06
Dichlorobenzene	1.20E-03	1.18E-06	1.42E+01	7.10E-03
Fluoranthene	3.00E-06	2.94E-09	3.54E-02	1.77E-05
Fluorene	2.80E-06	2.75E-09	3.31E-02	1.65E-05
Formaldehyde	7.50E-02	7.35E-05	8.84E+02	4.42E-01
Hexane	1.50E+00	1.47E-03	1.77E+04	8.84E+00
Indeno(1,2,3-cd)pyrene	1.80E-06	1.76E-09	2.12E-02	1.06E-05
Manganese	3.80E-04	3.73E-07	4.49E+00	2.24E-03
Mercury	2.60E-04	2.55E-07	3.07E+00	1.53E-03
Molybdenum	1.10E-03	1.08E-06	1.30E+01	6.49E-03
Naphthalene	6.10E-04	5.98E-07	7.19E+00	3.60E-03
Nickel	2.10E-03	2.06E-06	2.48E+01	1.24E-02
Phenanathrene	1.70E-05	1.67E-08	2.01E-01	1.00E-04
Pyrene	5.00E-06	4.90E-09	5.89E-02	2.95E-05
Selenium	2.40E-05	2.35E-08	2.83E-01	1.41E-04
Toluene	3.40E-03	3.33E-06	4.01E+01	2.00E-02
Vanadium	2.30E-03	2.25E-06	2.71E+01	1.35E-02
Zinc	2.90E-02	2.84E-05	3.42E+02	1.71E-01

Note:

Emission factors for HAPs excerpted from AP-42, Table 1.4-3, July 1998 version

Emissions based upon 8,760 hours of operation per year for auxiliary boiler (2,684,940 MM BTU/yr)

8,760 hours of operation combined for waste heat boilers at CPPP (4,086,540 MM BTU/yr)

8,760 hours of operation per year per HRSG at DEC (5,256,000 MM BTU/yr)

Table C
Total Combined HAP Emissions from all natural gas combustion sources at CPPP and DEC

HAP	Combined Annual Emissions (tpy)
1,3-Butadiene	1.31E-02
Acetaldehyde	1.21E+00
Acrolein	1.94E-01
Benzene	3.76E-01
Ethylbenzene	9.72E-01
Formaldehyde	3.72E+00
Napthalene	4.28E-02
PAH	6.68E-02
Propylene Oxide	8.81E-01
Toluene	3.97E+00
Xylenes	1.94E+00
2-Methylnaphthalene	1.41E-04
3-Methylchloranthrene	1.06E-05
7,12-Dimethylbenz(a)anthracene	9.44E-05
Acenaphthene	1.06E-05
Acenaphthylene	1.06E-05
Anthracene	1.41E-05
Arsenic	1.18E-03
Barium	2.59E-02
Benz(a)anthracene	1.06E-05
Benzo(a)pyrene	7.10E-06
Benzo(b)fluoranthene	1.06E-05
Benzo(g,h,i)perylene	7.10E-06
Benzo(k)fluoranthene	1.06E-05
Beryllium	7.10E-05
Cadmium	6.49E-03
Chromium	8.24E-03
Chrysene	1.06E-05
Cobalt	4.96E-04
Copper	5.01E-03
Dibenzo(a,h)anthracene	7.10E-06
Dichlorobenzene	7.10E-03
Fluoranthene	1.77E-05
Fluorene	1.65E-05
Hexane	8.84E+00
Indeno(1,2,3-cd)pyrene	1.06E-05
Manganese	2.24E-03
Mercury	1.53E-03
Molybdenum	6.49E-03

Table C Total Combined HAP Emissions from all natural gas combustion sources at CPPP and DEC	
HAP	**Combined Annual Emissions (tpy)**
Nickel	1.24E-02
Phenanathrene	1.00E-04
Pyrene	2.95E-05
Selenium	1.41E-04
Vanadium	1.35E-02
Zinc	1.71E-01
Total	**22.5**

Changes to permit:

Section IV will be modified to say that SIP standards are now found on EPA's website and are not included as part of the permit.

Table IV-A, that applies to the gas turbines and gas generators, will be modified as follows:
The applicable SIP Regulation 1 requirements will be added to Table IV-A.

The adoption dates for BAAQMD Regulation 1 and Regulation 2, Rule 1 will be updated.

The applicable requirements of 40 CFR 63, Subpart GG, "Standards of Performance for Stationary Gas Turbines" will be added to Table IV-A.

A citation for BAAQMD Regulation 6-310.3 will be added to Table IV-A. This was omitted from the original Title V permit in error.

A citation for the BAAQMD Continuous Emission Monitoring Policy and Procedures will be added to Table IV-A.

BAAQMD permit condition #19675, parts 1 through 13 that was established under NSR application 2141 will be added to Table IV-A.

BAAQMD permit condition #16885, part 2 that was omitted from the original Title V permit in error will be added to Table IV-A.

Table IV-B, that applies to the waste heat boilers, will be modified as follows:
The adoption dates for BAAQMD Regulation 1 and Regulation 2, Rule 1 will be updated.
The applicable SIP Regulation 1 requirements will be added to Table IV-B.
The applicable requirements of 40 CFR 63, Subpart GG, "Standards of Performance for Stationary Gas Turbines" will be added to Table IV-B.
A citation for BAAQMD Regulation 6-310.3 will be added to Table IV-B. This was omitted from the original Title V permit in error.
A citation for the BAAQMD Continuous Emission Monitoring Policy and Procedures will be added to Table IV-B.

Table IV-C, that applies to the Auxiliary Boiler will be added to the permit.

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.

A summary of the pending compliance review from the District Enforcement Division will be added here.

Changes to permit:

No changes are proposed for this section.

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 has 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 will be deleted from the permit.

Conditions will also be deleted for the following reasons:
- Redundancy in record-keeping 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.
- TRMP: This term is used for a condition imposed by the APCO to ensure compliance with limits that arise from the District's Toxic Risk Management Policy.

Additional monitoring has been added, where appropriate, to assure compliance with the applicable requirements.

Changes to permit:

Condition #19356 that applies to the S-11 Auxiliary Boiler will be added to the permit. This condition was imposed under NSR application 3990.

Condition #19675 that applies to S-67, S-70, & S-73 Gas Turbines, S-69 & S-75 Gas Generators, and S-68, S-71, & S-74 Waste Heat Boilers will be added to the permit. This condition was imposed under NSR application 2141 that involved the permitting of S-69 and S-75 Gas Generators.

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.

The District has reviewed all monitoring and has determined the existing monitoring is adequate with the following exceptions.

The tables below contain only the limits for which no monitoring is required or inadequate monitoring is currently required. The District has examined the monitoring for other limits and has determined that monitoring is adequate to provide a reasonable assurance of compliance. Calculations for potential to emit will be provided in the discussion when no monitoring is proposed due to the size of a source.

Monitoring decisions are typically the result of a balancing of several different factors including: 1) the likelihood of a violation given the characteristics of normal operation, 2) degree of variability in the operation and in the control device, if there is one, 3) the potential severity of impact of an undetected violation, 4) the technical feasibility and probative value of indicator monitoring, 5) the economic feasibility of indicator monitoring, and 6) whether there is some other factor, such as a different regulatory restriction applicable to the same operation, that also provides some assurance of compliance with the limit in question.

These factors are the same as those historically applied by the District in developing monitoring for applicable requirements**.** It follows that, although Title V calls for a re-examination of all monitoring**,** there is a presumption that these factors have been appropriately balanced and incorporated in the District's prior rule development and/or permit issuance. It is possible that, where a rule or permit requirement has historically had no monitoring associated with it, no monitoring may still be appropriate in the Title V permit if, for instance, there is little likelihood of a violation**.** Compliance behavior and associated costs of compliance are determined in part by the frequency and nature of associated monitoring requirements. As a result, the District will generally revise the nature or frequency of monitoring only when it can support a conclusion that existing monitoring is inadequate**.**

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-11 Auxiliary Boiler, S-67, S-70, & S-73 Gas Turbines, S-69 & S-75 Gas Generators, S-68, S-71, & S-74 Waste Heat Boilers	BAAQMD 9-1-301	Ground level concentrations of SO2 shall not exceed: 0.5 ppm for 3 consecutive minutes AND 0.25 ppm averaged over 60 consecutive minutes AND 0.05 ppm averaged over 24 hours	None

SO_2 Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-11 Auxiliary Boiler, S-67, S-70, & S-73 Gas Turbines, S-69 & S-75 Gas Generators, S-68, S-71, & S-74 Waste Heat Boilers	BAAQMD 9-1-302	300 ppm (dry)	None

SO2 Discussion:

BAAQMD Regulations 9-1-301 and 9-1-302

All facility combustion sources are subject to the SO2 emission limitations in District Regulation 9, Rule 1 (ground-level concentration and emission point concentration). In EPA's June 24, 1999 agreement with CAPCOA and ARB, "Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", EPA has agreed that natural-gas-fired combustion sources do not need additional monitoring to verify compliance with Regulation 9, Rule 1, since violations of the regulation are unlikely. The sources listed in the table above entitled “SO2 Sources” all fire exclusively natural gas. Therefore, no monitoring is necessary for these requirements.

PM Sources

S# & Description	Emission Limit Citation	Federally Enforceable Emission Limit	Monitoring
S-11 Auxiliary Boiler, S-67, S-70, & S-73 Gas Turbines, S-69 & S-75 Gas Generators, S-68, S-71, & S-74 Waste Heat Boilers	BAAQMD Regulation 6-301	Ringelmann 1.0	None
S-11 Auxiliary Boiler, S-67, S-70, & S-73 Gas Turbines, S-69 & S-75 Gas Generators, S-68, S-71, & S-74 Waste Heat Boilers	BAAQMD Regulation 6-310	0.15 gr/dscf	None

PM Discussion:

BAAQMD Regulation 6 “Particulate Matter and Visible Emissions”

Visible Emissions

BAAQMD Regulation 6-301 limits visible emissions to no darker than 1.0 on the Ringelmann Chart (except for periods or aggregate periods less than 3 minutes in any hour). Visible emissions are normally not associated with combustion of gaseous fuels, such as natural gas. S-11 Auxiliary Boiler, S-67, S-70, & S-73 Gas Turbines, S-69 & S-75 Gas Generators, and S-68, S-71, & S-74 Waste Heat Boilers burn natural gas exclusively, therefore, per the EPA's June 24, 1999 agreement with CAPCOA and ARB titled "Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for these sources.

Particulate Weight Limitation

BAAQMD Regulation 6-310 limits filterable particulate (FP) emissions from any source to 0.15 grains per dry standard cubic foot (gr/dscf) of exhaust volume. Section 310.3 limits filterable particulate emissions from "heat transfer operations" to 0.15 gr/dscf @ 6% O_2. These are the "grain loading" standards.

Exceedances of the grain loading standards are normally not associated with combustion of gaseous fuels, such as natural gas. S-11 Auxiliary Boiler, S-67, S-70, & S-73 Gas Turbines, S-69 & S-75 Gas Generators, and S-68, S-71, & S-74 Waste Heat Boilers burn natural gas exclusively, therefore, per the EPA's July 2001 agreement with CAPCOA and ARB entitled "CAPCOA/CARB/EPA Region IX Recommended Periodic Monitoring for Generally Applicable Grain Loading Standards in the SIP: Combustion Sources: Summary of Periodic Monitoring Recommendations for Generally Applicable Requirements in SIP", no monitoring is required to assure compliance with this limit for these sources.

Changes to permit:

The column heading "Emission Limit Citation" will be changed to "Citation of Limit" since not every limit is an emission limit.

The column heading "Emission Limit" will be changed to "Limit" since not every limit is an emission limit.

The description of the BAAQMD 6-301 limit in Section VII will be corrected to say "for < 3 min/hr."

The "type of limit" will be changed to "Opacity" for BAAQMD Regulation 6-301, since it is an opacity standard.

The "type of limit" will be changed to "FP" for BAAQMD Regulation 6-310 and 6-311, since it is a filterable particulate standard.

A citation for BAAQMD Condition # 19675, part 2 will be added to Table VII-A that applies to the gas turbines, gas generators, and waste heat boilers. This citation was omitted in error from the original Title V permit.

A citation for the NOx emission limitation of 40 CFR 63, Subpart GG, "Standards of Performance for Stationary Gas Turbines" will be added to Table VII-A.

Table VII-B, that applies to the auxiliary boiler will be added to the permit.

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.

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

Changes to permit:

There are no changes proposed for this section.

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.

The facility will not have either type of permit shield in its Title V permit.

Changes to permit:

The standard language in the Section IX, Permit Shield, will be updated.

X. Glossary

Changes to permit:

There are no changes proposed for this section.

XI. Appendix A - State Implementation Plan

Changes to permit:

This section will be deleted since the SIP standards can be found on EPA's website.

D. Alternate Operating Scenarios:

No alternate operating scenario has been requested for this facility.

E. Compliance Status:

An office memorandum from the Director of Compliance and Enforcement to the Director of Permit Services, dated March 6, 2006 presents a review of the compliance record of Calpine Pittsburg (Site # B1928). The Compliance and Enforcement Division staff has reviewed the records for Calpine Pittsburg for the period of 3/1/05 through 2/28/06. This review was initiated as part of the District evaluation of Calpine Pittsburg's application for a renewal Title V permit. During the period subject to review, activities known to the District include:

- There were no Notices of Violation issued during this review period.
- The District did not receive any air pollution complaints alleging Calpine Pittsburg as the source
- The facility is not operating under a Variance or an Order for Abatement from the District Hearing Board.
- There were no monitor excesses or equipment breakdowns reported or documented by District staff.

The owner certified that all equipment was operating in compliance on August 26, 2004. No non-compliance issues have been identified to date.

F. Differences between the Application and the Proposed Permit:

The Title V renewal permit application (#10663) was originally submitted to the District on August 30, 2004. This version is the basis for constructing the proposed Title V permit. Revisions were made to the application 10663 as a result of changes at the facility that were made pursuant to permit application 12919 that instituted permit condition changes for S-11 Auxiliary Boiler.

Otherwise, there are no substantive differences between the information and specifications in renewal permit application and the proposed renewal Title V permit.

APPENDIX A

BAAQMD COMPLIANCE REPORT

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

Basis
The underlying authority which 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

CEQA
California Environmental Quality Act

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

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). Cumulative increase is used to determine whether threshold-based requirements are triggered.

District
The Bay Area Air Quality Management District

dscf
Dry Standard Cubic Feet

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 (MACT), 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.

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.

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.

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)

NOx
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.)

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, NOx, PM10, and SO2.

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
Particulate Matter

PM10
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.

SO2
Sulfur dioxide

THC
Total Hydrocarbons (NMHC + Methane)

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
hp	=	horsepower
hr	=	hour
lb	=	pound
in	=	inches
max	=	maximum
m^2	=	square meter
min	=	minute
mm	=	million
MMbtu	=	million btu
MMcf	=	million cubic feet
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

APPENDIX C

Engineering Evaluation for Application 3990

ENGINEERING EVALUATION REPORT
Calpine Pittsburg, LLC
SITE NUMBER 11928
APPLICATION NUMBER 3990

I. BACKGROUND

Calpine Pittsburg Power Plant (CPPP) is a 73.4 MW, gas turbine power plant in Pittsburg, CA, which also provides process steam to Dow Chemical. CPPP along with the Delta Energy Facility (DEC) are considered a single facility for permit purposes. In the present facility the process steam is produced by waste heat boilers from the exhaust of the gas turbines. The integration of CPPP and DEC has resulted in restricted operation of the gas turbines at CPPP. To meet the steam requirement when the gas turbine operation is reduced Calpine wants to install an auxiliary boiler at CPPP. The proposed boiler is equipped with a Low NOx burner and an integral SCR unit that can achieve 9 ppmvd NO_x (3% O_2) and 50 ppmvd CO (3% O_2). At loads below about 25%, the SCR becomes ineffective due to low flue gas temperature and the NO_x limit is 2.8 lbs/hr (less than 100% load). An application has been submitted for:

S-11 Auxiliary Boiler, Foster Wheeler AG-5275, 250,000 pph, with Low NO_x burner abated by SCR (A-8) and FGR, 306.5 MMBtu/hr Capacity.

II. EMISSION CALCULATIONS

A. Combustion Emissions

Operating Conditions:
Steam Output: 250,000 lb/hr @, 170 psig, saturated
Fuels: Natural Gas only
Fuel Usage: 306.5 MMBtu/hr
NO_x Control: Low NO_x burner, FGR and SCR
Boiler Type: Watertube
Emissions Data:

- NO_x : 9 ppmvd (@ 3% O_2); BAAQMD BACT Guideline
- CO : 50 ppmvd (@ 3% O_2); BAAQMD BACT Guideline
- POC: 0.00137 lb/MMBtu, fuel sulfur content 0.25 gr/100scf
- PM_{10}: 0.005 lb/MMBtu, specified by Foster Wheeler
- SO_2: 0.0007 lb/MMBtu, specified by Foster Wheeler

1. Criteria Pollutant Emissions

Table 1 presents the emissions of criteria pollutants that would result from operation of the auxiliary boiler at 100% load (MCR) for a full year or 8760 hours. This is the theoretical maximum and actual operation will not be this high.

Table 1 – Maximum Auxiliary Boiler Emissions

Pollutant	Emission Factor	Emissions[1]	Emissions	Emissions[4]
	(lb/MMBtu)	(lb/hr)	(lb/yr)	(ton/yr)
NO_x	0.011[2]	3.37	80.9	14.8
CO	0.037[3]	11.34	272	49.7
POC	0.00137	0.42	10.1	1.84
PM_{10}	0.005	1.53	36.7	6.70
SO_2	0.0007	0.21	5.15	0.94

Notes: 1. Firing rate 306.5 MMBtu/hr
2. 9 ppmvd @ 3% O_2

3. 50 ppmvd @ 3% O_2
4, 8760 hours operation

Table 2 presents the criteria pollutant emissions for a more typical operation of the CPPP. The gas turbine/HRSG units are operating at the reduced level required when DEC becomes operational and the auxiliary boiler is operating for 3570 hours at 100% load.

Table 2 – Typical Modified CPPP Emissions

Pollutant	Existing CPPP[1]	Auxiliary Boiler[2]	Modified CPPP
	(ton/yr)	(ton/yr)	(ton/yr)
NO_x	18.5	6.0	24.6
CO	113.3	20.3	133.7
POC	4.7	0.7	5.5
PM_{10}	7.1	2.7	9.8
SO_2	0.6	0.4	1.0

Notes: 1. Heat input 2,060,652 MMBtu per DEC limit.
2. Assumes 3570 hrs at full load.

Table 3 presents the criteria pollutant emissions for the combined operation of DEC and the modified CPPP.

Table 3 – Maximum Combined Plant Emissions

Pollutant	DEC	Modified CPPP	Combined	Offset Trigger
	(ton/yr)	(ton/yr)	(ton/yr)	(ton/yr)
NO_x	277.5	24.6	302.0	50
CO	1106.9	133.7	1240.6	n/a
POC	74.1	5.5	79.6	50
PM_{10}	145.6	9.8	155.5	100
SO_2	18.4	1.0	19.4	100

2. Toxic Emissions

Table 4 presents the toxic emissions that would result from operation of the auxiliary boiler at 100% load (MCR) for a full year or 8760 hours. This is the theoretical maximum and actual operation will not be this high.

Table 4 – Toxic Emissions

Toxic Pollutant	Emission Factor	Emissions	Toxic Trigger	Above Trigger?
	(lb/MMscf)	(lb/yr)	(lb/yr)	
Acetaldehyde	8.87E-03	27.7	72	no
Acrolein	8.00E-04	2.50	4	no
Ammonia(ppmv)	1.00E+01	12,042	n/a	no
Benzene	2.15E-06	13.5	7	yes
Ethylbenzene	2.00E-02	62.5	193,000	no
Formaldehyde	2.21E-01	691	33	yes
Hexane	1.30E-03	4.06	83,000	no
Propylene	1.55E-02	48.4	n/a	no
Toluene	7.80E-03	24.4	39,900	no
Xylene	5.80E-03	18.1	58,800	no

Note: Toxic emission factors for gas firing are from Ventura County APCD except for Acetaldehyde, benzene, and formaldehyde, which are from CARB.

[1]Ammonia emissions is calculated based on a 10 ppm slip rate:

(10 ppmvd)(20.95/20.95 – 3) = 10.7 ppmv NH_3

$(10.7/10^6)$(1 lb/mol/385.3 dscf)(17 lb NH3/lb/mol)(8710 dscf/MMBtu) = 0.0045 lb/MMBtu

(0.0045 lb/MMBtu}(306.5 MMBtu/hr)(8760 hr/yr) = 12,042 lb/yr

III. EXEMPT OPERATIONS

None

IV. LIST OF SOURCES

The following source requires a Permit to Operate from the District in accordance with Regulations 2-1-301 and 2-1-302:

S-11 Auxiliary Boiler, Foster Wheeler AG-5275, 250,000 pph, with Low NO_x burner abated by SCR (A-8) and FGR, 306.5 MMBtu/hr Capacity.

V. CUMULATIVE EMISSIONS

Table 5 – Cumulative Emissions

	Current	Increase	Cumulative Total
Pollutant	ton/year	ton/year	ton/year
NO_x	0	6.0	6.0
CO	0	20.3	20.3
POC	0	0.7	0.7
PM_{10}	0	2.7	2.7
SO_2	0	0.4	0.4

VI. APPLICABLE REQUIREMENTS

The sources covered in this application are not currently subject to National Emission Standards for Hazardous Air Pollutants (NESHAPS).

A. Toxic Risk Assessment

The boiler covered by this application is predicted to emit some compounds in excess of the risk screen trigger levels. Therefore, a toxic risk screening analysis was required. The modeling program was used to predict maximum ground level impacts from this project. The increased cancer risk to the maximally exposed individual was found to be 0.02 in a million. The chronic hazard index was found to be 0.0014. This project will comply with the District's Toxic Risk Management Policy by resulting in both the increased cancer risk and the chronic hazard index being well below one in a million.

B. New Source Review - Regulation 2, Rule 2

1. Best Available Control Technology Requirements (2-2-301)

A Best Available Control Technology (BACT) review is required for any new or modified source which results in a cumulative emissions increase for POC, NPOC, NO_x, SO_2, PM_{10}, or CO of greater than 10 pounds per highest day since April 5, 1991, or which results in a cumulative increase since 1982, which exceeds the emission rate of a pollutant listed in Regulation 2-2-301.2.

S-11 triggers BACT. The boiler is equipped with a low NO_x burner and SCR unit to reduce NOx and CO emissions to 9 ppmvd (3% O_2) and 50 ppmvd (3% O_2), respectively. SO_2, PM_{10} and POC emissions will be minimized by the use of natural gas fuel. This complies with the District BACT Workbook for boilers in this category.

However, SCR performance is temperature dependant and with high turndown units the SCR will not perform well at low loads, i.e. low temperature. This load level is expected to be about 25% for this boiler. The SJVUAPCD BACT guideline notes that boilers with high turndown cannot be expected to meet 9 ppmv at 3% O_2 over all load ranges and the BACT limit should consider the operating range of the emission controls. At low loads, without SCR, the BACT limit will be 2.8 lbs/hr, which is less than 100% load and 9-ppmv value of 3.37 lbs/hr. Operation of the boiler without SCR will be limited to 10% of total operating time and the minimum SCR operating temperature will be determined by source test. Therefore, S-11 is considered to have a BACT level of control with a 9 ppmv with SCR and 2.8 lbs/hr below the SCR range.

2. Offset Requirements (2-2-302)

The required offsets are summarized in Table 6. The Baseline emissions are for the existing CPPP operating at the DEC heat input limit. As shown in Table 3, NO_x, POC and PM_{10} must be offset. Calpine will furnish the required offsets prior to the District issuing the ATC.

Table 6 - Offset Summary

Pollutant	Baseline Emissions	Maximum Emissions	Emission Increase	Offset Ratio	Required Offsets
	(ton/yr)	(ton/yr)	(ton/yr)		(ton/yr)
NO_x	18.5	24.6	6.0	1.15	6.9
CO	113.3	133.7	20.3	n/a	n/a
POC	4.7	5.5	0.7	1.15	0.9
PM_{10}	7.1	9.8	2.7	1.00	2.7
SO_2	0.6	1.0	0.4	1.00	n/a

3. PSD (Prevention of Significant Deterioration) Requirements (2-2-304)

PSD is triggered if a major facility has a modification that increases emissions more than the triggers in 2-2-221. The emission increase is compared to the PSD triggers in Table 7. The increase for this modification is less than the trigger levels, therefore, PSD does not apply.

Table 7 – PSD Trigger

Pollutant	Emission Increase	PSD Trigger	Trigger Exceeded?
	(ton/yr)	(ton/yr)	
NO_x	6.0	40	no
CO	20.3	100	no
POC	0.7	n/a	n/a
PM_{10}	2.7	15	no
SO_2	0.4	40	no

C. Particulate Matter and Visible Emissions, Regulation 6

1. Visible Emissions

S-11 is subject to and in compliance with the requirements of Regulations 6-301 (Ringelmann No. 1 Limitation), 6-302 (Opacity Limitation), and 6-305 (Visible Particles).

D. Inorganic Gaseous Pollutants, Regulation 9

1. Sulfur Dioxide, Regulation 9, Rule 1

S-11 is subject to and in compliance with the requirements of Regulations 9-1-301 (Limitations on Ground Level Concentrations), 9-1-302 (General Emission Limitation), and 9-1-304 (Fuel Burning – Liquid and Solid Fuels).

This project is to be considered exempt from CEQA review as it qualifies for the ministerial statutory exemption.

E. New Source Performance Standards (NSPS)

S-11 Boiler is subject to New Source Performance Standards (NSPS) since it fires natural gas/LPG and the rated heat input is greater than 100 MM Btu/hr. Title 40 CFR Part 60 Subpart Db prohibits NO_x emissions in excess of 0.1 lb/MM Btu for this type of application. The NO_x emission for this unit will be 0.011 lb/MM Btu. The source therefore complies with the NSPS standard.

VII. PERMIT CONDITIONS

1. S-11 Boiler shall be fired exclusively with natural gas at a firing rate not to exceed 86 MM Btu/hr. [Basis: BACT or Cumulative Increase]

2. S-11 Boiler shall be abated by the properly operated and maintained A-8 Selective Catalytic Reduction System (SCR) during normal operations. At low loads the boiler may be operated without SCR based on a minimum SCR inlet temperature. This minimum temperature will be determined during the Source Testing required of Condition #11 and will be established when NO_x exceeds 9 ppmv or ammonia slip exceeds 10 ppmv. Operation of the boiler without SCR, during any 12-month period, shall be limited to 10% of the boiler operating time in hours. [Basis: BACT]

3. Emissions of nitrogen oxides (NO_x) shall not exceed 9 ppmv (reference 3 percent O_2, dry), averaged over any rolling 3 hour period, when firing natural gas with SCR. When operated, without SCR,

emissions of nitrogen oxides (NO_x) shall not exceed 2.8 lbs/hr, averaged over any rolling 3-hour period. [Basis: BACT]

4. Emissions of carbon monoxide (CO) shall not exceed 50 ppmv (reference 3 percent O_2, dry) averaged over any rolling 3 hour period. [Basis: BACT]

5. Emissions of ammonia shall not exceed 10 ppmv (reference 3 percent O_2, dry) averaged over any rolling 3 hour period. [Basis: BACT]

6. The total usage of natural gas at this facility shall not exceed the DEC limit specified in Condition Number 17154. [Basis: Cumulative Increase]

7. Visible particulate emissions from S-11 Boiler shall not exceed Ringelmann 1.0. [Regulation 6-301]

8. The limits specified in conditions 3 and 4 shall not apply during startup periods not exceeding 3 hours and shutdown periods not exceeding 2 hours for source S-11. [Basis: Regulation 2-1-403]

9. "Startup" shall mean that period of time during which the piece of equipment in question is put into normal operation from an inactive status by following a prescribed series of separate steps or operations, not to exceed 3 hours. [Basis: Regulation 2-1-403]

10. "Shutdown" shall mean that period of time during which the piece of equipment in question is taken out of service from a normal operating mode to an inactive status following a prescribed series of separate steps of operations, not to exceed 2 hours. [Basis: Regulation 2-1-403]

11. In order to demonstrate compliance with Conditions # 2, 3, 4, 5 above, the permit holder shall perform a District approved source test within 60 days of start-up and annually thereafter, in accordance with the District's Manual of Procedures. The permit holder 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 45 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: Regulation 2-1-403). This A/C startup condition will be deleted upon issuance of the Permit to Operate.

12. Facility emission limits contained in DEC Condition Number 17154 shall not be exceeded. [Basis: Cumulative Increase]

13. The owner/operator shall comply with the following monitoring requirements:

a. The boiler exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods.

b. The ammonia injection system shall be equipped with an operational ammonia flowmeter and injection pressure indicator accurate to plus or minus five percent at full scale and calibrated once every twelve months.

c. The boiler exhaust shall be equipped with continuously recording emissions monitors (CEM) for NOx, CO and O_2 or CO_2. Continuous emissions monitors shall comply with the requirements of 40 CFR Part 60, Appendices B and F and shall be capable of monitoring concentrations and mass emissions during normal operating conditions and during startups and shutdowns.

d. The fuel heat input rate shall be continuously recorded using District-approved fuel flow meters along with quarterly fuel compositional analyses for the fuel's higher heating value (wet basis).

e. The total sulfur content of the fuel gas shall be analyzed on a quarterly basis.

f. Monitoring of a pollutant, not measured by the CEM, shall be computed with a District approved calculation based on source testing.
[Basis: Monitoring & record keeping, Regulation 1-520.1]

14. To determine compliance with the above conditions, the Owner/Operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions, including the following information:

a. Monthly records of the quantity of natural gas (therms) fired in S-11.
b. Monthly records of the number and duration (hours) of shutdowns and startups.
c. Monthly records of the number of hours of boiler operation with and without SCR.
d. Monthly records of the emissions of NO_x, CO, POC and SO_2.
e. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained on site for two years, from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations.

VIII. RECOMMENDATIONS

It is recommended that an Authority to Construct be issued to NRG Energy Center for the following:

S-11 Auxiliary Boiler, Foster Wheeler AG-5275, 250,000 pph, with Low NO_x burner abated by SCR (A-8) and FGR, 306.5 MMBtu/hr Capacity.

By: _____ Date:_____
Dick Wocasek, P.E.

APPENDIX D

Engineering Evaluation for Application 2141

Calpine Pittsburg Power Plant

Loveridge Road
Pittsburg, CA 94565
Plant 11928 Application 2141

Background

The Calpine Pittsburg Power Plant (CPPP) operates a cogeneration power plant consisting of three Pratt & Whitney aircraft derivative gas turbines with nominal plant rating of 69.9 MW. The Cogen facility was originally owned and operated by Dow Chemical Company but was sold to Calpine in 1995 and has been operated since as the Calpine Pittsburg Power Plant. CPPP is located on property that Calpine leases from Dow Chemical and is in close proximity to the Delta Energy Center (DEC), which is also located on the property that Calpine leases from Dow Chemical. The District recognizes CPPP and DEC as a single facility for permitting purposes because of their location and the fact that CPPP and DEC are under the "common control" of Calpine Corporation.

The plant operates three gas turbine power generation units that each consist of a gas generator, power turbine and electrical generator. The exhaust from these units is ducted to fired waste heat boilers that supply process steam to Dow Chemical. The gas generators and fired waste heat boilers have a combined heat input rate of 924.6 MMBtu/hr and 466.5 MM BTU/hr., respectively. One of three gas turbine power generators is rated at 19.1 MW (264.2 MMBtu/hr input) and the other two units are rated at 25.4 MW (330.2 MMBtu/hr input) each. The gas generator portion of these units is an aircraft derivative (jet engine) and requires more maintenance than a utility type gas turbine. When the unit needs maintenance the practice is to replace the entire gas generator portion with one of two spare units. Only three of the five gas generators can be operated at one time since there are only three power generation units. Under District policy this replacement constitutes a new source and requires a new permit. This application will permit two more gas generators for a total of five gas generator permits. The existing sources (S-67, S-70 & S-73) will be used for three of the gas generators and two new sources will be permitted (S-69 & S-75). The two new sources are:

S-69 Gas Generator GG-2, Pratt & Whitney Model FT4A-9-GF, 264.2 MMBtu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

S-75 Gas Generator GG-5, Pratt & Whitney Model FT4C1-D-GF, 330.2 MMBtu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

For fee purposes, the two new sources will be treated as Loss of Exemption and only Permit to Operate fees will be charged.

Descriptions of the following existing gas generator sources will be revised to reflect their flexible use:

S-67 Gas Generator GG-1, Pratt & Whitney Model FT4A-9-GF, 264.2 MMBtu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

S-70 Gas Generator GG-3, Pratt & Whitney Model FT4C1-D-GF, 330.2 MMBtu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

S-73 Gas Generator GG-4, Pratt & Whitney Model FT4C1-D-GF, 330.2 MMBtu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

In addition, Calpine would like the flexibility of being able to operate any gas generator in any of the three units. This will be allowed provided the three units are never operated above a combined firing rate of 924.6 MMBtu/hr which is the firing rate of the original plant configuration.

These sources are limited in annual mass emissions by the DEC permit condition 17154-26. This annual limit is:

NOx (as NO2)	54.9 tons

Plant Cumulative Emissions

There will be no cumulative increase with this operation.

Toxic Risk Screening analysis

A toxic risk screening analysis is not required because there are no net increases in toxic emissions.

Statement of Compliance

1. PSD Prevention of Significant Deterioration) Requirements (2-2-304)

PSD is not triggered because the facility emissions do not increase by 40 tons per year for regulated air pollutants.

Particulate Matter and Visible Emissions, Regulation 6

1. Visible Emissions

Sources at the CPPP (67, 68, 69, 70, 71, 73, 74 & 75) are subject to and in compliance with the requirements of Regulations 6-301(Ringelmann No. 1 Limitation), 6-302 (Opacity Limitation) and 6-305 (Visible Particles).

Inorganic Gaseous Pollutants, Regulation 9

1. Sulfur Dioxide, Regulation 9, Rule 1

Sources (67, 68, 69, 70, 71, 73, 74 & 75) at the CPPP are subject to and in compliance with the requirements of Regulations 9-1-301 (Limitations on Ground Level Concentrations), 9-1-302 (General Emission Limitation), and 9-1-304 (Fuel Burning – Liquid and Solid Fuels).

This project is to be considered exempt from CEQA review as it qualifies for the ministerial statutory exemption.

2. Nitrogen Oxides, Regulation 9, Rule 9

Sources (67, 69, 70, 73 & 75) Gas Generators at the CPPP are subject to and in compliance with the requirements of Regulation 9-9-301.3 (Emission Limits).

3. Nitrogen Oxides and Carbon Monoxide, Regulation 9, Rule 7

Sources (68, 71 & 74) Waste Heat Boilers at the CPPP are subject to and in compliance with requirements of Regulation 9-7-301 (Emission Limits).

New Source Performance Standards (NSPS)

Sources at the CPPP (67, 68, 69, 70, 71, 73, 74 & 75) are not subject to any New Source Performance Standards (NSPS) since these sources were in operation before 1973 and there are no emission increases.

Permit Conditions

1. The owner/operator shall not operate the units at a combined heat input of greater than 924.6 MM BTU/hr and 466.5 MM BTU /hr, for sources S-67, 69, 70, 73 and 75, five gas generators, and S-68, 71 and 74, three waste heat boilers, respectively. [Cumulative increase and offsets]

2. The owner/operator shall not allow the plant to exceed the following combined mass emission limit per year from the CPPP Gas Generators (S-67, S-69, S-70, S-73 and S-75) and Waste Heat Boilers (S-68, S-71, and S-74) including emissions generated during Turbine Start-ups and Shutdowns.

NOx (as NO2) 54.9 tons
[Cumulative increase and offsets]

3. The owner/operator shall not allow the stack NOx concentration to exceed 9 ppmv @15% O2 averaged over 3 hours except for turbine start-up and shutdown periods for sources S-67, S-69, S-70, S-73 and S-75, Gas Turbines and S-68, S-71, and S-74, Waste Heat Boilers.
[Regulation 9-9-301.3]

4. The owner/operator shall fire the units exclusively on PUC-quality natural gas in the Gas Generators (S-67, S-69, S-70, S-73 and S-75) and Waste Heat Boilers (S-68, S-71, and S-74). [Cumulative increase]

5. The owner/operator of the Gas Generators S-67, S-69, S-70, S-73 and S-75 and the Waste Heat Boilers (S-68, S-71, and S-74) shall not operate these units unless they are abated by the Shell DeNOx Selective Catalytic Reduction System (SCR) A-188, A-189, & A-190. The SCR units must be properly maintained and operated. [Cumulative Increase]

6. The owner/operator shall not allow visible particulate emissions from S-67, S-69, S-70, S-73 and S-75 and S-68, S-71, & S-74 to exceed Ringelmann 1.0. [Regulation 6-301]

7. The limits specified in condition 3 shall not apply during startup periods not exceeding 3 hours and shutdown periods not exceeding 2 hours for source S-67, S-69, S-70, S-73 and S-75. [Basis: Regulation 2-1-403]

8. "Startup" shall mean that period of startup from first-fire to where the unit is in compliance with pollutant concentration limits (at least two consecutive data points), not to exceed 3 hours. [Basis: Regulation 2-1-403]

9. "Shutdown" shall mean that period of shutdown from where the unit is out of compliance with pollutant concentration limits to fuel cut-off, not to exceed 2 hours. [Basis: Regulation 2-1-403]

10. The owner/operator shall not operate the gas generators (S-67, S-69, S-70, S-73 and S-75), waste heat boilers (S-68, S-71, & S-74), emissions controls (A-188, A-189 & A-190), CEMs (NOx & O_2), fuel gas flow meters and associated equipment unless the equipment are properly maintained and kept in good operating condition at all times when the gas turbine(s) is in operation.

11. The owner/operator shall use the parameters measured in condition 10 with District-approved calculation methods to calculate the following parameters:

a. Combined heat input for S-67, S-68, S-69, S-70, S-71, S-73, S-74 and S-75

b. Corrected NOx concentrations and NOx (as NO2) mass emissions at each of the following exhaust points: P-67, P-73 and P-79.

For each source, source grouping, or exhaust point, the owner/operator shall record the firing hours, fuel flow rates, NOx and O2 parameters at least once every 15 minutes (excluding normal calibration periods). As specified below, the owner/operator shall utilize the data specified. [Recordkeeping]

12. Mass Emission limits: The owner/operator shall maintain hourly, three rolling averages, daily and annual NOx mass emissions at each exhaust point.

To determine compliance with the above conditions, the owner/operator shall maintain the following records and provide all of the data necessary to evaluate compliance with the above conditions, including the following information:

a. Monthly records of the quantity of natural gas (BTUs) at S-67, S-69, S-70, S-73 and S-75 Gas Generators and (S-68, S-71, and S-74) the Waste Heat Boilers
b. Monthly records of the number and duration (hours) of shutdowns and startups.
c. Monthly records shall be totaled for each consecutive 12-month period.

All records shall be retained on site for five years, from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations. [Recordkeeping]

14. The five gas generators shall be permanently identified as follows:

GG-1	Source 67	264.2 MM Btu/hr Max

GG-2	Source 69	264.2 MM Btu/hr Max
GG-3	Source 70	330.2 MM Btu/hr Max
GG-4	Source 73	330.2 MM Btu/hr Max
GG-5	Source 75	330.2 MM Btu/hr Max

Recommendations

It is recommended that the following new sources be issued a Conditional Permit to Operate:

S-69 Gas Generator GG-2, Pratt & Whitney Model FT4A-9-GF, 264.2 MM Btu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

S-75 Gas Generator GG-5, Pratt & Whitney Model FT4C1-D-GF, 330.2 MM Btu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

It is further recommended that the descriptions of the existing gas generator sources will be revised to reflect their flexible use:

S-67 Gas Generator GG-1, Pratt & Whitney Model FT4A-9-GF, 264.2 MM Btu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

S-70 Gas Generator GG-3, Pratt & Whitney Model FT4C1-D-GF, 330.2 MM Btu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

S-73 Gas Generator GG-4, Pratt & Whitney Model FT4C1-D-GF, 330.2 MM Btu/hr, by abated by A-188, A-189 or A-190 Shell DeNOx Selective Catalytic Reduction Unit

By: _____ Date:_____

Dick Wocasek, P.E.

APPENDIX E

Engineering Evaluation for Application 12919

ENGINEERING EVALUATION
CALPINE PITTSBURG, LLC # 11928
APPLICATION # 12919

BACKGROUND
Calpine Pittsburg Power Plant (CPPP) is requesting administrative changes to their existing operating permit condition #19356. There is no impact on emissions from the requested changes. The source is described as follows:

S-11 Auxiliary Boiler, Foster Wheeler AG-5275, 250,000 pph, with low NOx burner abated by SCR (A-8) and FGR, 306.5 MM Btu/hr Capacity

EMISSIONS SUMMARY
Requested changes are as follows:

1. Condition #16, #17, and #18 will be deleted because they regulate the commissioning period for the auxiliary boiler which is now completed.

2. Correct typo in Condition #14f. (POC should be change to CO).

3. Change Condition #12 from annual source testing to source testing every 8,000 hrs of boiler operation or every 3 years, whichever comes first.

PLANT CUMULATIVE INCREASE
There are no net increase associated with the proposed changes.

TOXIC RISK SCREENING ANALYSIS
In the original application #3990, a District Risk Screen was performed yielding a cancer risk of 0.02 in a million. The level of risk is considered insignificant. The proposed changes in this report will not have a change in the cancer risk. Therefore, another Toxic Risk Screen is not necessary.

STATEMENT OF COMPLIANCE
S-11 continues to meet Reg.9-1-301 (Limitations on Ground Level Concentrations), 9-1-302 (General Emission Limitation) , and 9-1-304 (Fuel Burning-Liquid and Solid Fuels).

S-11 complies with Reg.6-301 (Ringelmann 1 Limitation), 6-302 (Opacity Limitation) and 6-305 (Visible Particles).

This project is to be considered exempt from CEQA review as it qualifies for the ministerial statutory exemption.

BACT
BACT is not triggered. However, the boiler is equipped with low NOx burner and abated by SCR and flue gas recirculation. This boiler will continue to meet BACT1 Standards for NOx, CO, POC, and PM10 as was determined in application #3990.

Offsets
Since there were no change in emissions, offsets were not triggered. However, CPPP had furnished the required offsets in their original application # 3990 by surrendering ERC certificate #742.

NSPS
This facility will continue to comply with the NSPS standards (Title 40 CFR Part 60 subpart Db) for NOx emissions as were determined in their previous application #3990.

NESHAPS and PSD do not apply.

The facility will continue to meet all other District requirements as stated in application #3990

PERMIT CONDITIONS
CONDITION #19356 Revised 08/25/05

1. The owner/operator shall insure that the S-11 Boiler be fired exclusively with natural gas at a firing rate not to exceed 306.5 MMBtu/hr. [Basis:BACT or Cumulative Increase]

2. The owner/operator shall insure that the S-11 Boiler be abated by the properly operated and maintained A-8 Selective Catalytic Reduction System (SCR) during normal operations. The boiler may be operated without SCR provided the NOx mass limit in Condition #3 is met. [Basis: BACT]

3. The owner/operator shall insure that the emissions of nitrogen oxides (NOx) not exceed 9 ppmv (reference 3 percent O2, dry), averaged over any rolling 3 hour period, when firing natural gas with SCR. When the heat input to the boiler drops below 76 MMBtu/hr (25% of rated heat input), the NOx concentration may exceed 9 ppmv (reference 3 percent O2, dry) provided that NOx emissions do not exceed 0.82 lbs/hr, averaged over any rolling 3-hour period. [Basis: BACT]

4. The owner/operator shall insure that the emissions of carbon monoxide (CO) not exceed 50 ppmv (reference 3 percent O2, dry) averaged over any rolling 3 hour period. [Basis: BACT]

5. The owner/operator shall insure that the emissions of ammonia not exceed 10 ppmv (reference 3 percent O2, dry) averaged over any rolling 3 hour period. [Basis: BACT]

6. The owner/operator shall insure that the emissions of PM-10 not exceed 1.53 lbs/hr. [Basis: BACT]

7. Delete

8. The owner/operator shall insure that the visible particulate emissions from S-11 Boiler not exceed Ringelmann 1.0. [Regulation 6-301]

9. The limits specified in conditions 3 and 4 shall not apply during startup periods not exceeding 3 hours and shutdown periods not exceeding 2 hours for source S-11. [Basis: Regulation 2-1-403]

10. "Startup" shall mean that period of time commencing with the introduction of fuel to the boiler, and ending when the boiler has achieved compliance with two consecutive data CEMS points for the emission limits contained in Conditions 3 and 4, not to exceed 3 hours. [Basis: Regulation 2-1-403]

11. "Shutdown" shall mean that period of time during which the boiler in question is being taken out of service. This period commences when either of the emission limits in Conditions 3 and 4 are exceeded and ends at fuel cutoff, not to exceed 2 hours. [Basis: Regulation 2-1-403]

12. In order to demonstrate compliance with Conditions # 3, 4, 5 and 6 above, the owner/operator shall perform a District approved source test ~~within 60 days of start-up and annually~~ ~~thereafter~~, **every 8,000 hours of boiler operation or every 3 years , whichever comes first**, in accordance with the District's Manual of Procedures. The owner/operator 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 60 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: Regulation 2-1-403). This A/C startup condition will be deleted upon issuance of the Permit to Operate.

13. Cumulative emissions from the S-11 boiler shall not exceed the following limits during any consecutive twelve-month period:

    a. 6.0 tons of NOx (as NO2) per year [Basis: Offsets]
    b. 20.3 tons of CO per year[Basis: Cumulative Increase]
    c. 0.7 tons of POC (as CH4) per year [Basis: Offsets]
    d. 2.7 tons of PM10 per year[Basis: Offsets]
    e. 0.4 tons of SO2 per year[Basis: Cumulative Increase]

14. The owner/operator shall comply with the following requirements:

    a. The boiler exhaust stack shall be equipped with permanent platforms and sampling ports.

    b. The ammonia injection system shall be equipped with an operational ammonia flowmeter and injection pressure indicator accurate to plus or minus five percent at full scale and calibrated once every twelve months.

    c. The boiler exhaust shall be equipped with continuously recording emissions monitors (CEM) for NOx, CO and O2 or CO2. Continuous emissions monitors shall comply with the requirements of 40 CFR Part 60, Appendices B and F and shall be capable of monitoring concentrations and mass emissions during normal operating conditions and during startups and shutdowns.

d. The fuel heat input rate shall be continuously recorded using District-approved fuel flow meters along with quarterly fuel compositional analyses for the fuel's higher heating value (wet basis).

e. The total sulfur content of the fuel gas shall be analyzed on a quarterly basis.

f. Monitoring of PM-10, ~~POC~~ **CO** and NH3 shall use a District approved calculation based on source testing.[Basis: Monitoring & record keeping, Regulation 1-520.1]

15. To determine compliance with the above conditions, the Owner/Operator shall maintain records and provide all of the data necessary to evaluate compliance with the above conditions, including the following information:

a. Monthly records of the quantity of natural gas (therms) fired in S-11.
b. Monthly records of the number and duration (hours) of shutdowns and startups.
c. Monthly records of the number of hours of boiler operation with and without SCR.
d. Monthly records of the emissions of NOx, CO, POC and SO2.
e. Monthly records shall be totaled for each consecutive 12-month period
f. Monitoring of a pollutant not measured by the CEM shall use a District approved calculation based on source testing.

All records shall be retained on site for five years, from the date of entry, and made available for inspection by District staff upon request. These recordkeeping requirements shall not replace the recordkeeping requirements contained in any applicable District Regulations. [Basis: Monitoring & record keeping, Regulation 1-520.1]

16. ~~The owner/operator of the CPPP shall minimize emissions of carbon monoxide and nitrogen oxides from S-11 to the maximum extent possible during the communing period. Conditions 1 through 12 and Condition 14 shall not apply during the commissioning period as defined below. Condition 13 shall apply during commissioning as well as normal operation~~. **Deleted 8/25/05**

17. ~~The commissioning period shall commence when the auxiliary boiler is first fired. The period shall terminate when the plant has completed performance testing and is available for commercial operation~~. **Deleted 8/25/05**

18. ~~The owner/operator shall insure that operation of S-11 without a SCR system shall not exceed 50 hours during the commissioning period. Such operation of S-11 shall be limited to discrete commissioning activities that can only be properly executed without the SCR system in place.~~ **Deleted 8/25/05**

RECOMMENDATION
Issue a change in Permit Condition ID#19356 for the following source:

S-11 Auxiliary Boiler, Foster Wheeler AG-5275, 250,000 pph, with low NOx burner abated by SCR (A-8) and FGR, 306.5 MM Btu/hr Capacity

By: _____ _____

AQ Engineer II Date