

**SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT  
CASA GRANDE**

**1. INTRODUCTION ..... 4**

**2. LISTING OF (FEDERALLY ENFORCEABLE) APPLICABLE REQUIREMENTS..... 5**

**3. PROSPECTIVE COMPLIANCE REQUIREMENTS ..... 7**

    A. COMPLIANCE PLAN .....7

    B. COMPLIANCE SCHEDULE .....7

**4. AUTHORITY TO CONSTRUCT ..... 7**

    A. CTG/HRSG SYSTEM REQUIREMENTS.....7

    B. FUEL USE LIMITATIONS.....8

**5. EMISSION LIMITATIONS AND CONTROLS ..... 8**

    A. APPLICABLE LIMITATIONS.....8

    B. ALLOWABLE EMISSIONS.....8

    C. EMISSION LIMITS – SCCT4 AND SCCT5 .....8

    D. EMISSION LIMITS - CTG01 AND CTG02 .....9

        1. *BACT Limitations* .....9

        2. *NSPS Subpart Da Limitations – CTG02*.....12

        3. *NSPS Subpart GG Limitations – CTG02* .....12

        4. *NOX Emission Limitations - NSPS Subpart KKKK (SCCT4 and SCCT5)*.....12

        5. *NOX Emission Limitations - NSPS Subpart KKKK (CTG01 and CTG02)* .....13

        6. *SO<sub>2</sub> Emission Limitation - NSPS Subpart KKKK* .....13

    E. FUEL-BURNING EQUIPMENT - PARTICULATE EMISSIONS.....14

        1. *SIP Limitation*.....14

        2. *Current Code Limitation*.....14

    F. *PARTICULATE MATTER REASONABLE PRECAUTIONS*.....14

    G. SURFACE STABILIZATION.....15

    H. GENERALLY APPLICABLE OPACITY LIMITS .....16

        1. *SIP Limitation*.....16

        2. *Visibility Limiting Standard*.....16

        3. *Code Limitation Rotating Equipment Only*.....16

    I. GENERAL MAINTENANCE OBLIGATION .....16

    J. GENERALLY APPLICABLE LIMITS .....16

        1. *Asbestos NESHAP Compliance* .....17

        2. *Stratospheric Ozone and Climate Protection* .....17

    K. ACID RAIN REQUIREMENTS .....17

    L. ADDITIONAL PLANT-WIDE REQUIREMENTS .....17

        1. *Sandblasting - Plant Wide* .....17

        2. *Architectural Coatings*.....18

        3. *Other Spray Painting*.....18

        4. *Disposal*.....18

        5. *Cutback and Emulsified Asphalt*.....18

    M. NESHAP (SUBPART ZZZZ) STANDARDS - STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE) NESHAP .....18

    N. NSPS (SUBPART JJJJ) STANDARDS - STATIONARY SPARK IGNITION (SI) INTERNAL COMBUSTION ENGINES (ICE) .....19

    O. HOURS OF OPERATION FOR EMERGENCY ENGINES.....20

**6. COMPLIANCE DEMONSTRATION ..... 20**

- A. NON-NSPS AND NSPS SUBPART KKKK NOX TESTING (SCCT4 AND SCCT5) .....20
  - 1. Initial Performance Testing.....20
  - 2. Test Protocol.....21
  - 3. Performance Test Notice.....21
  - 4. Test Report.....21
- B. Performance Test – CTG02 .....21
  - 1. Initial Performance Testing.....21
  - 2. Test Protocol.....21
  - 3. Performance Test Notice.....22
  - 4. Test Report.....22
- C. Non-NSPS and NSPS Subpart KKKK NOX Performance Tests (All Units) .....22
  - 1. Subsequent Performance Testing.....22
  - 2. Test Protocols.....22
  - 3. Performance Test Notices.....22
  - 4. Test Reports.....23
  - 5. Recurring Testing Cycle.....23
  - 6. Elective Testing to Assess Startup/shutdown Ambient Impacts.....23
  - 7. Full-Speed-No-Load Maintenance/Testing Operation Notices.....23
  - 8. NSPS (Subpart TTTT) Greenhouse Gas Emissions for Electric Generating Units Testing.....23
- D. COMPLIANCE REQUIREMENTS SUBPART KKKK .....23
- E. MONITORING REQUIREMENTS SUBPART KKKK .....24
- F. MONITORING REQUIREMENTS SUBPART TTTT (SCCT4 AND SCCT5) .....24
- G. GENERAL MONITORING REQUIREMENTS .....24
  - 1. Instrumental Emissions Monitoring - Oxides of Nitrogen (All Units).....24
  - 2. Instrumental Emissions Monitoring - Carbon Monoxide.....24
  - 3. General Parametric Emission Monitoring Requirements.....25
  - 4. Parametric Emissions Monitoring - Volatile Organic Compounds.....26
  - 5. Parametric Emissions Monitoring - Particulate Matter.....27
  - 6. NSPS Subpart GG Fuel Sulfur Monitoring (CTG02).....28
  - 7. Parametric Emissions Monitoring - Sulfur Dioxide.....29
  - 8. Parametric Emission Monitoring - General Maintenance.....29
- H. EXCESS EMISSIONS - NOX (CTG01, SCCT4 and SCCT5).....30
- I. EXCESS EMISSIONS - SO2 (CTG01, SCCT4 and SCCT5).....30
- J. EXCESS EMISSIONS - NOX [40 CFR PART 60, SUBPART GG]- CTG02.....30
- K. RECORDKEEPING .....31
- L. EMERGENCY GENERATOR AND FIRE PUMP RECORDS.....31
- M. COMPLIANCE REPORTING REQUIREMENTS SUBPART KKKK.....32
- N. GENERAL COMPLIANCE REPORTING.....32
- O. REGULAR COMPLIANCE/COMPLIANCE PROGRESS CERTIFICATION.....32
- 7. OTHER REPORTING OBLIGATIONS ..... 32**
  - A. DEVIATION REPORTING REQUIREMENT .....33
  - B. ANNUAL EMISSIONS INVENTORY .....33
- 8. FEE PAYMENT ..... 33**
- 9. GENERAL CONDITIONS..... 33**
  - A. TERM.....33
  - B. BASIC OBLIGATION .....33
  - C. DUTY TO SUPPLEMENT APPLICATION .....33
  - D. RIGHT TO ENTER .....34
  - E. TRANSFER OF OWNERSHIP.....34
  - F. POSTING OF PERMIT .....34
  - G. PERMIT REVOCATION FOR CAUSE .....34
  - H. CERTIFICATION OF TRUTH, ACCURACY, AND COMPLETENESS .....34

- I. RENEWAL OF PERMIT .....34
- J. SEVERABILITY .....35
- K. PERMIT SHIELD .....35
- L. PERMIT REVISIONS .....35
- M. PERMIT RE-OPENING .....36
- N. RECORD RETENTION.....36
- O. SCOPE OF LICENSE CONFERRED .....36
- P. EXCESS EMISSION REPORTS; EMERGENCY PROVISION .....36
- 10. ADDITIONAL PROVISIONS APPLICABLE TO TITLE V SOURCES..... 38**
  - A. ENFORCEMENT by the ADMINISTRATOR and CITIZENS.....38
  - B. FEDERAL ENFORCEABILITY EXCLUSIONS .....38
- 11. EQUIPMENT..... 38**
- 12. INSIGNIFICANT ACTIVITIES ..... 38**

## 1. Introduction

This permit pertains to an electrical power plant, owned and operated by Salt River Project Agricultural Improvement and Power District, a political subdivision of the State of Arizona. The SIC Code is 4911. The facility, commonly known as Desert Basin Generating Station (DBGS), is located at 1872 North Burriss Road, Casa Grande, Arizona, upon a parcel also identified by Pinal County Assessor's Parcel #503-34-015B. The source is situated in an area classified as non-attainment for PM<sub>10</sub>.

The facility has a generating capacity of 622 MW-gross, provided by two combustion turbine driven generators CTG01 and CTG02 rated at approximately 187 MW and 173 MW, respectively, and a single approximately 262 MW steam turbine generator. Following the implementation of the combustion turbine project on CTG02 (tentatively scheduled for early 2022), the facility will have a generating capacity of 635 MW-gross, provided by two combustion driven generators rated at approximately 187 MW, and a single approximately 262 MW steam turbine generator.

This Permit V20678.R02 is re-opened to address the EPA's order granting in part a petition for objection (Petition No. IX-2022-3) to the issuance of this permit based on Sierra Club's intent to sue letter. Based on the petition, Sections §§5.C.5, 6.A.1, 6.A.1.c, 6.C.1, 6.C.1.c, 6.G.3.b.ii, 6.G.3.b.iv, 6.G.4, and 6.G.5 are revised accordingly.

Permit Revision V20678.R02, authorizes the facility to install and operate two aeroderivative natural gas fired simple cycle General Electric (GE) LM6000PC combustion turbines (SCCT4 and SCCT5) with a combined capacity of 99 MW. The combustion gases exit the combustion turbines at temperatures ranging from 760 °F to 1,100 °F. To enable the use of selective catalytic reduction (SCR) systems for the proposed turbines, an air injection system is included. This system supplies tempering air to the exhaust of the turbine section to reduce the exhaust gas temperature to around 800 °F at the catalyst inlet. The exhaust gases will then pass through two post combustion air quality control systems: oxidation catalysts for the control of CO and volatile organic compounds (VOC), and high-temperature Selective Catalytic Reduction (SCR) systems for the control of NOx emissions.

The proposed upgrade involves physical changes at an existing major stationary source that affects only the new emission units. Therefore, increase in emissions of regulated NSR pollutants from the proposed project are quantified for purposes of determining major modification applicability under NNSR and PSD.

Since the project affects only the new emission units, the Actual-to-Potential (ATP) analysis was conducted to determine major modification applicability. This analysis involves calculating the Project Emissions Increase (PEI) of each regulated NSR pollutant as the sum of differences between Potential to Emit (PTE) and the Baseline Actual Emissions (BAE) for each of the new units. Since the PTE based on the enforceable emissions limitations for the two new combustion units is below the applicable significant emissions rates of the regulated NSR pollutants, and since by definition BAE for the new emission units is zero, the PEI is equal to PTE for the two new combustion units. Therefore, the proposed project is not subject to a NNSR or PSD review. Technical Support Document has the detailed analysis.

Permit Revision V20678.R01, authorized the facility to undertake changes under the Power Systems Mfg., LLC (PSM) Combustion Turbine Upgrade Project which involved installing and upgrading components in the combustion turbines' inlet, compressor, hot gas path, and control system in the two Siemens Westinghouse 501F natural gas fired combustion turbines CTG01 and CTG02. These upgrades are as follows:

- Flamesheet Combustion System
- Gas Turbine Optimization Packages (GTOP) 7 Upgrade
- Auto Tune System
- Inlet Bleed Heat System
- Part Load Performance Package

The proposed upgrade involves physical changes at an existing major stationary source that affects only the existing emission units. Therefore, increase in emissions of regulated NSR pollutants from the proposed project are quantified for purposes of determining major modification applicability under NNSR and PSD.

Since the project affects only the existing emission units, the Actual-to-Projected-Actual (ATPA) analysis was conducted to determine major modification. This analysis involves calculating the Project Emissions Increase (PEI) of each regulated NSR pollutant as the sum of differences between their Projected Actual Emissions (PAE) and the Baseline Actual Emissions (BAE) for each of the affected units.

The ATPA analysis shows that PEI does not result in significant emissions increases of any regulated NSR pollutant, and therefore, the proposed project does not have to go through a PSD review. Technical Support Document has the detailed analysis.

This Revision V20678.R01 adds the requirements associated with NSPS Subpart KKKK, as following the implementation of the modification each combustion turbine will be subject to Subpart KKKK. Until the modification is completed NSPS Subpart Da and NSPS Subpart GG will apply.

Permit Renewal, V20658.000, did not propose physical changes or changes in the method of operation other than the addition of a propane emergency generator. This permit action also moved an existing emergency fire pump from the list of insignificant activities to permitted activities since it is now subject to applicable requirements and incorporates emission rates for greenhouse gases (GHGs) and PM<sub>2.5</sub>.

Permit V20610.000 was issued under Title V of the Clean Air Act on September 9, 1999. Minor revision V20610.R01 was issued on August 23, 2000 to correct discrepancies between initial design and final design of the facility. Significant revision V20610.R02 was issued on December 2, 2003 to eliminate the startup and shutdown limits for CO and substitute with an annual cap; full speed/no load (FSNL) testing alternate operating scenario; additional NO<sub>x</sub> limit formulation and elimination of monitoring methods from Subpart Da; alternate monitoring method to Subpart GG for fuel nitrogen monitoring; alternate monitoring method to Subpart GG for fuel sulfur monitoring; update SIP-approved applicable requirements. During revision V20610.R02 the potential to emit for criteria pollutants was revised to take into consideration the change in CO emissions. Tables 1 and 2 within the TSD show the revised PTEs. Permit V20610.A03 was an administrative amendment that changed the ownership to Salt River Project, Permit V20610.R04 was a minor revision that clarified CO startup emissions. Permit V20620.00 and V20636.000 were Title V Permit renewals. Permit V20636.A01 was an administrative amendment to clarify the references to duct burners on/off to indicate that the steam turbine generator cannot operate without the combustion turbine generators. Permit revision V20636.R02 clarified the definitions of startup and shutdown and defines "aborted shutdowns".

The plant includes two natural gas fired combustion turbine generators ("CTG") each equipped with a supplementary-fired heat recovery steam generator ("HRSG"), a steam turbine, and a mechanical draft cooling tower. Each CTG/HRSG system has a separate stack. The permittee has installed a dry low-NO<sub>x</sub> technology with selective catalytic reduction (SCR) system to comply with the NO<sub>x</sub> BACT requirements under the original permit.

The plant constitutes a "major emitting source" of CO, NO<sub>x</sub>, PM<sub>2.5</sub>, and PM<sub>10</sub> emissions. That status potentially subjects modifications at this facility to the "Prevention of Significant Deterioration" (PSD) preconstruction review requirements defined in the Clean Air Act (1990) ("CAA"). The TSD discusses PSD-related issues. The source is also subject to the operating permit requirements under Title V of the CAA.

## 2. **Listing of (Federally Enforceable) Applicable Requirements** *[Mandated by 40 CFR §70.5(c)(4)]*

- A. Those portions of Pinal County Air Quality Control District ("PCAQCD") Regulations ("Code"), as revised by the Pinal County Board of Supervisors on October 12, 1995, and approved by the

Administrator as elements of the Arizona State Implementation Plan ("SIP") at 61 FR 15717 (4/9/96). The following all specifically pertain to the issuance of this permit:

§3-1-040	Applicability and Classes of Permits
§3-1-050	Permit Application Requirements
§3-1-081	Permit Conditions
§3-1-082	Emission Standards and Limitations
§3-1-083	Compliance Provisions
§3-1-103	Annual Emissions Inventory Questionnaire
§3-1-132	Permit imposed right of entry
§3-1-150	Monitoring
§3-1-160	Test Methods and Procedures
§3-1-170	Performance Tests
§3-1-173	Quality Assurance
§3-1-177	Stack Height Limitation
§§3-3-200 through 3-3-210, and 3-3-250 through 3-3-280 -	Permit Requirements for New Major Sources ... [Located in Attainment Areas]

- B. Those specific provisions of the Pinal-Gila Counties Air Quality Control District ("PGCAQCD") Regulations, as adopted by the Pinal County Board of Supervisors on March 31, 1975, and approved by the Administrator as elements of the Arizona State Implementation Plan ("SIP") at 43 FR 50531, 50532 (11/15/78), and specifically the following rules:

7-3-1.1	Emission Standards - Particulates - Visible Emissions - General
7-3-1.2	Emission Standards - Particulate Emissions - Fugitive Dust
7-3-5.1	NOx Emissions - Fuel Burning Equipment

- C. Those specific provisions of the PGCAQCD Regulations, as last amended by the Pinal County Board of Supervisors on June 16, 1980, and approved by the Administrator as elements of the Arizona SIP at 47 FR 15579 (4/12/82), specifically, the following rules:

7-3-1.1	Visible Emissions; General
7-3-1.7.F	Fuel Burning Equipment

- D. The New Source Performance Standards ("NSPS") 40 CFR Part 60.

Subpart A	General Provisions, §§60.1 - 60.18 (Code §6-1-030.1)
Subpart Da	Electric Utility Steam Generating Units, §§60.40a - 60.49a (Code §6-1-030.3)
Subpart GG	Stationary Gas Turbines, §§60.330 - 60.335 (Code §6-1-030.39)
Subpart JJJJ	Stationary Spark Internal Combustion Engines §§60.4230 - 60.4248 and Appendices (Code §6-1-030.81)
Subpart KKKK	Standards of Performance for Stationary Combustion Turbines, §§60.4305 - 60.4395

- E. The National Emissions Standards for Hazardous Air Pollutants ("NESHAP") 40 CFR Part 63

Subpart ZZZZ Stationary Reciprocating Internal Combustion Engines (RICE) §§63.6580 - 63.6675 and Appendices

- F. 40 CFR 63.1-63.15 provisions as listed in Table 8 of 40 CFR 63, Subpart ZZZZ, except as described in 40 CFR 63.6645(a)(5)

- G. Compliance Assurance Monitoring, 40 CFR Part 64, §§64.1- 64.8

- H. Acid Rain Provisions; CAA Title IV, and: 40 CFR Part 72 Permit Regulation (Code §3-6-565) 40 CFR Part 73, Sulfur Dioxide Allowance System (Code §3-6-565), 40 CFR Part 75, Continuous Emission Monitoring (Acid Rain Program) (Code §3-6-565)
- I. CAA §§608 & 611 (11/15/90); 40 CFR Part 82, Subpart F - Recycling and Emissions Reduction (9/7/95); regulations pertaining to use and handling of ozone-depleting substances.
- J. The National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR Part 51. Subpart M, Asbestos, §§61.140-61.157 and Appendix A) (Code §7-1-030)

### 3. Prospective Compliance Requirements

- A. Compliance Plan  
*[Mandated by 40 CFR §70.5(c)(8)]* (Code §3-1-083A.7)

Insofar as the Permittee is currently in compliance, the compliance plan consists of continued adherence to the requirements of this permit and those requirements set forth in applicable regulations and statutes.

- B. Compliance Schedule  
*[Mandated by 40 CFR §§ 70.5(c)(8), 70.6(c)(3)]* (Code §3-1-083.A.7)

Insofar as the Permittee is currently in compliance, no compliance schedule to attain compliance is required.

### 4. Authority to Construct

*[Federally enforceable - Code §§3-1-010, 3-1-040 (as amended 10/12/95) approved as a SIP Element at 61 FR 15717 (4/9/96)]*

Emissions from this facility, specifically the equipment described in "Equipment Schedule" section below, and the operating configuration as defined below and more fully described in the application for permit, fall subject to the enforceable limitations identified throughout this permit. Therefore, based on the regulations in effect upon the date of issuance of this permit and a finding that allowable emissions from the equipment described in the Equipment Schedule will neither cause nor contribute to a violation of any ambient air quality standard even without any additional limitations, this permit constitutes authority to construct and operate such equipment.

- A. CTG/HRSG System Requirements  
(Code §3-3-250.A.1)

- 1. Each CTG/HRSG unit shall:
  - a. Incorporate "Low-NO<sub>x</sub>" design turbines
  - b. Incorporate a system for the selective catalytic reduction of NO<sub>x</sub>, including ammonia injection and a catalyst system; or
  - c. Exhaust to the atmosphere through a stack not greater than 20' in outlet diameter, nor less than 160' in height above grade;
  - d. Each stack shall be equipped with such platforms and sampling ports as may be required to fulfill the testing and monitoring requirements set forth below;
  - e. Include separate fuel-flow meters for the CTG/HRSG and duct burners.

2. Natural gas heat input to the duct burners for each CTG/HRSG unit shall be limited to 1,824,000 million British thermal units (mmBtu) per year, based on a rolling 12-month average.<sup>1</sup>
3. Subject to the option defined below for invoking a startup/shutdown testing program to establish alternative limits on the allowable number of startup events, Permittee shall limit the aggregate number of startup events, considering startups of both CTG01 and CTG02, to no more than 638 such events in any rolling 12-month period.
4. The Permittee shall install, calibrate, maintain and operate continuous emissions monitoring systems on SCCT4 and SCCT5<sup>2</sup>, and record the output of the system, for measuring nitrogen oxides and carbon monoxide emissions to the atmosphere during startup and shutdown events and the normal operation of the combustion turbines, and to measure the amount of fuel used. Monitoring equipment shall be installed and operated in accordance with the plan submitted to the district by the permittee.

B. Fuel Use Limitations  
(Code §3-1-081.)

1. Fuels  
(Code §3-3-250.A.1)

Permittee is allowed to burn exclusively pipeline natural gas having a sulfur content of 0.0075 grains per dry standard cubic foot or less in all the CTG and SCCT units.

**5. Emission Limitations and Controls**  
*[Mandated by 40 CFR §70.6(a)(1)]*

A. Applicable Limitations  
(Code §3-1-082)

Where different standards or limitations apply under this permit, the most stringent combination shall prevail and be enforceable.

B. Allowable Emissions  
(Code § 3-1-040, §R18-2-302.A, B.1)

Permittee is authorized to discharge or cause to discharge into the atmosphere those emissions of air contaminants as set forth in Section 4 of this permit. Unless exempted as an insignificant activity under Code §1-3-140.79a, as a categorical exemption under Code §3-1-040.C., or authorized by a separate permit or by a revision or operational change allowed under this permit or under Chapter 3, Article 2 of the Code, Permittee shall not commence construction of, operate or make any modification to this source in a manner which will cause emissions of any regulated air pollutant in excess of the de minimis amount.

C. Emission Limits – SCCT4 and SCCT5 (Codes §§3-1-084, R18-2-306.01.A and B)

1. The Permittee shall not cause or allow the combined PM/PM10/PM2.5 emissions from SCCT4 and SCCT5 to exceed 4.99 tons per 12-month rolling total sum (combined for normal operation and startup/shutdown duration).

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<sup>1</sup> Based on a heat input capacity of 456 mmBtu/hr., each Duct Burner could operate up to 4000 hours/year at that maximum heat input rate.



2. The Permittee shall not cause or allow the combined NOX emissions from SCCT4 and SCCT5 to exceed 19.99 tons per 12-month rolling total sum (combined for normal operation and startup/shutdown duration).
3. The Permittee shall not cause or allow the combined VOC emissions from SCCT4 and SCCT5 to exceed 19.99 tons per 12-month rolling total sum (combined for normal operation and startup/shutdown duration).
4. The Permittee shall not cause or allow the combined CO emissions from SCCT4 and SCCT5 to exceed 49.99 tons per 12-month rolling total sum (combined for normal operation and startup/shutdown duration).
5. The Permittee shall limit the natural gas annual combined heat input to SCCT4 and SCCT5 to 1,996,000 MM Btu, based on a rolling 12-month average.

D. Emission Limits - CTG01 and CTG02

1. BACT Limitations  
(Code §3-3-250.)

a. CTG/HRSG Emission Limitations

i. BACT limits for steady-state operation of CTG/HRSG with Duct Burners ON

Other than during periods of start-up and shut-down, Permittee shall not cause to be discharged into the atmosphere from either of the gas turbine/steam generator systems during operation of CTG/HRSG with Duct Burners ON any gases which:

- a. Contain nitrogen oxides emissions in excess of 3.0 ppmvd corrected to 15% oxygen, based on a rolling 3-hour average.
- b. Contain carbon monoxide emissions in excess of 24 ppmvd corrected to 15% oxygen, based on a rolling 3-hour average;
- c. Contain PM<sub>10</sub> emissions in excess of 23.0 #/hr., based on a rolling 3-hour average;
- d. Contain VOC emissions in excess of 19.2 #/hr., based on a rolling 3-hour average;
- e. Exhibit opacity in excess of 10%, as measured by Method 9.

ii. BACT Limits for steady-state operation of CTG/HRSG with Duct Burners OFF

Other than during periods of startup, shut-down, and full-speed-no-load testing as defined under this Permit, Permittee shall not cause to be discharged into the atmosphere from either of the gas turbine/steam generator systems during operation of CTG/HRSG with Duct Burners OFF operation any gases which:

- a. Contain nitrogen oxides emissions in excess of 3.0 ppmvd corrected to 15% oxygen, based on a rolling 3-hour average.

- b. Contain carbon monoxide emissions in excess of 15.3 ppmvd corrected to 15% oxygen, based on a rolling 3-hour average;
- c. Contain PM<sub>10</sub> emissions in excess of 15.3 #/hr., based on a rolling 3-hour average;
- d. Contain VOC emissions in excess of 8.2 #/hr., based on a rolling 3-hour average;
- e. Exhibit opacity in excess of 10%, as measured by Method 9.

iii. BACT Limits on NO<sub>x</sub>, VOC and PM<sub>10</sub> During General Startup

For purposes of regulating all pollutants other than CO, "general start-up" consists of two phases; a first phase, consisting of bringing a CTG up to operating load and temperature and spanning not more than one hour, and a second phase, spanning up to an additional three hours, during which a HRSG units will be brought up to operating temperature or the turbine will be returned to operating load following an aborted shutdown. An aborted shutdown is defined as an event in which the turbine is required to return to operating load without previously having shutdown completely.

- a. During the first, one-hour, phase of start-up of the CTG/HRSG units, the CTG/HRSG units shall be exempt from any limitations on emission of NO<sub>x</sub>, but Permittee shall exercise "good combustion practice," consisting of adherence to the turbine manufacturers standard operating procedure.
- b. During the second, three-hour, phase of start-up of the CTG/HRSG units, the CTG/HRSG units shall not emit:
  - i. Nitrogen oxides in excess of 18.0 ppmvd corrected to 15 percent oxygen on a rolling three-hour average.
  - ii. VOC emissions in excess of those emitted as a result of good combustion practice.
  - iii. PM<sub>10</sub> emissions in excess of those emitted as a result of good combustion practice.

iv. BACT Limit on CO During CO Startup

For purposes of regulating CO emissions, "CO start-up" shall consist of a period of time not exceeding 6-hours following the initial firing of each turbine, or a period of time not exceeding 3 hours following an aborted shutdown. An aborted shutdown is defined as an event in which a turbine is required to return to operating load without previously having shutdown completely. During CO startup, emissions shall be exempted from the stack concentration limits defined elsewhere under this permit, but those CO emissions shall be counted for purposes of demonstrating compliance with the CO cap defined elsewhere under this permit. Permittee shall limit each turbine to a maximum of 700 hours per

year in such a "CO startup" mode, based on a 12-month average rolled on a calendar-month basis.

v. BACT Limit on NO<sub>x</sub>, VOC, and PM<sub>10</sub> during General Shutdown

For purposes of regulating all pollutants other than CO, "general shut-down" consists of a period of no more than three hours required to shut down a combustion turbine or a steam turbine in an orderly fashion, minimizing load cycling on the steam turbine. During "shutdown," CTG/HRSG units shall not emit:

- a. Nitrogen oxides in excess of 18.0 ppmvd corrected to 15 percent oxygen on a rolling three-hour average.
- b. VOC emissions in excess of those emitted as a result of good combustion practice.
- c. PM<sub>10</sub> emissions in excess of those emitted as a result of good combustion practice.

vi. BACT Limit on CO During CO Shutdown

For purposes of regulating CO emissions, "CO shut-down" shall consist of a 3-hour period required to shut-down a combustion turbine or a steam turbine, and during that 3-hour period CO emissions shall be exempted from the stack concentration limits defined elsewhere under this permit, but those CO emissions shall be counted for purposes of demonstrating compliance with the CO cap defined elsewhere under this permit.

vii. BACT Limit on CO During Maintenance/Testing Operation

For purposes of regulating CO emissions, full-speed-no-load operation, or "maintenance/testing operation," shall consist of an 8-hour period required to perform hardware and circuitry maintenance testing at loads outside of normal operation, and during that 8-hour period CO emissions shall be exempted from the stack concentration limits defined elsewhere under this permit, but those CO emissions shall be counted for purposes of demonstrating compliance with the CO cap defined elsewhere under this permit. Permittee shall not conduct more than four such "maintenance/testing operations" per year, per unit, based on a 12-month average rolled on a calendar month basis.

viii. BACT Limit on Ammonia

Permittee shall control ammonia emissions from the CTG/HRSG units to a maximum allowable concentration of 10 ppmvd corrected to 15 percent oxygen.

ix. Proper Operation Required at All Times

At all times, Permittee shall operate the CTG/HRSG units in accordance with the manufacturer's specifications in order to minimize emissions of particulate matter, carbon monoxide, and volatile organic compounds.

b. CO Emission Cap

Aggregate CO emissions from the CTG/HRSG units shall be subject to a facility-wide emission cap of 929 tons-per-year, and compliance with that cap shall be based on 365-day aggregation of CO emissions, recalculated on a calendar-day basis.

c. Cooling Tower Limitations

Permittee shall operate drift eliminators in the cooling tower to minimize particulate matter emissions.

2. NSPS Subpart Da Limitations – CTG02

**[60.44Da.(a).(1)]** Code §6-1-030.

Until the completion of the Combustion Turbine Upgrade Project, the Permittee shall comply with the following:

- a. Permittee shall not cause to be discharged into the atmosphere from the steam generators any gases which contain nitrogen oxides in excess of 0.20 lb/million btu heat input (approximately 57 ppmvd at 15 percent oxygen).
- b. Permittee shall not cause to be discharged into the atmosphere from the steam generators any gases which contain nitrogen oxides in excess of 1.6 lb./mW-hr.

3. NSPS Subpart GG Limitations – CTG02

**[40 CFR 60.332 & 60.333]** Code §6-1-030.

Until the completion of the Combustion Turbine Upgrade Project, the Permittee shall comply with the following:

- a. Permittee shall not cause to be discharged into the atmosphere from the gas turbines any gases which contain nitrogen oxides in excess of:

$$\text{STD} = 0.0075(14.4)/Y$$

where STD = NOx emissions (% by volume at 15% oxygen and on a dry basis)

$$Y = \text{rated heat load (kilojoules per watt) (not greater than 14.4)}$$

Note that 0.0075 percent by volume equals 75 ppmvd.

- b. Permittee shall not cause to be discharged into the atmosphere from the gas turbines any gases which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis.
- c. Permittee shall not burn in the gas turbines any fuel which contains sulfur in excess of 0.8 percent by weight.

4. NOX Emission Limitations - NSPS Subpart KKKK (SCCT4 and SCCT5)

**[40 CFR §60.4320(a), Table 1, §60.4350(g)]**

Permittee shall comply with the following:

- a. NOX emission limit of 25 ppm at 15% O<sub>2</sub> or 1.2 lb/MWh (for a combustion turbine firing natural gas with heat input greater than 50 MMBtu per hour and less than or equal to 850 MMBtu per hour) on a four (4) hour rolling average basis while the combustion turbines are operating at greater than or equal to 75% of peak load.
  - b. NOX emission limit of 96 ppm at 15% O<sub>2</sub> or 4.7 lb/MWh (for a combustion turbine firing natural gas with output greater than 30 MW) on a four (4) hour rolling average basis while the combustion turbines are operating at less than 75% of peak load.
5. NOX Emission Limitations - NSPS Subpart KKKK (CTG01 and CTG02)  
**[40 CFR §60.4320(a), Table 1, §60.4350(h)]**

Upon completion of the Combustion Turbine Upgrade Project, the Permittee shall comply with the following:

- a. NOX emission limit of 15 ppm at 15% O<sub>2</sub> or 0.43 lb/MWh (for a combustion turbine firing natural gas with heat input greater than 850 MMBtu per hour) on a thirty (30) unit operating day rolling average basis while the combustion turbine is operated at greater than or equal to 75% of peak load.
  - b. NOX emission limit of 96 ppm at 15% O<sub>2</sub> or 4.7 lb/MWh (for a combustion turbine firing natural gas with heat input greater than 850 MMBtu per hour) on a thirty (30) unit operating day rolling average basis while the combustion turbine is operated at less than 75% of peak load.
6. SO<sub>2</sub> Emission Limitation - NSPS Subpart KKKK  
**[40 CFR §60.4330.(a).(1) & (a).(2), Table 2]**

Upon completion of the Combustion Turbine Upgrade Project, and upon installation and operation of SCCT4 and SCCT5 units, the Permittee shall comply with the following:

- a. Permittee shall not cause to be discharged into the atmosphere from the stationary combustion turbine any gases which contain SO<sub>2</sub> in excess of 110 nanograms per Joule (ng/J) (0.90 pounds per megawatt-hour (lb/MWh)) gross output.
  - b. Permittee shall not burn in stationary combustion turbine any fuel which contains total potential sulfur emissions in excess of 26 ng SO<sub>2</sub>/J or 0.06 lb SO<sub>2</sub>/MMBtu heat input.
7. CO<sub>2</sub> Emission Limitation – NSPS TTTT (SCCT4 and SCCT5)  
**[40 CFR §60.5520.(a), Table 2]**
- a. Newly constructed or reconstructed stationary combustion turbine that supplies its design efficiency or 50 percent, whichever is less, times its potential electric output or less as net-electric sales on either a 12-operating month or a 3-year rolling average basis and combusts more than 90% natural gas on a heat input basis on a 12-operating-month rolling average basis, shall not discharge from the affected EGU any gases that contain CO<sub>2</sub> in excess of 50 kg CO<sub>2</sub> per gigajoule (GJ) of heat input (120 lb/CO<sub>2</sub>/MMBtu).
  - b. The Permittee shall only use natural gas with a consistent chemical composition that results in a consistent emission rate of 160 lb CO<sub>2</sub>/MMBtu or less in the combustion turbines.

- c. The Permittee shall limit the net electric output for each unit to no more than the design efficiency or 50%, whichever is less, times the potential electric output, on a 3 calendar year rolling average. The design efficiency and potential electric output will be determined during the initial performance test using the methods referenced in 40 CFR 60 Subpart TTTT.
8. Start-up and Shutdown Limitations (SCCT4 and SCCT5)
1. Definitions
- a. "Start-up" is defined as the 30-minute period following an initiation of fuel flow.
- b. "Shutdown" is defined as the 9-minute period prior to shut-off the fuel supply.
- c. "Malfunction" is defined as any sudden and unavoidable failure of air pollution control equipment, process equipment or a process to operate in a normal and usual manner, but does not include failures that are caused by poor maintenance, careless operation or any other upset condition or equipment breakdown which could have been prevented by the exercise of reasonable care.
- E. Fuel-Burning Equipment - Particulate Emissions
1. SIP Limitation  
*[Currently federally enforceable pursuant to PGAQCD Reg. 7-3-1.7 (3/31/75) approved as a SIP element at 43 FR 50531 (11/15/78)]*
- For equipment with a heat input capacity of less than 4,000 million Btu per hour<sup>2</sup>, particulate emissions shall not exceed:
- $E = 1.02X^{-.231}$ , where E = maximum emissions in lbs./hr. for each million BTU per hour heat input, and X = maximum heat input capacity in million BTU per hour.
2. Current Code Limitation  
(§5-23-1010)
- For equipment with a heat input capacity of less than 4,200 million Btu per hour, particulate emissions shall not exceed:
- $E = 1.02Q^{0.769}$ , where E = maximum emissions in lbs./hr. for each million BTU per hour heat input, and Q = maximum heat input capacity in million BTU per hour.
- F. Particulate Matter Reasonable Precautions  
*[Currently federally enforceable pursuant to Code §4-2-040 (6/29/93) approved as a SIP element at 72 FR 41896 (8/1/07)]*
- a. Permittee shall not cause, suffer, allow, or permit a building or its appurtenances, subdivision site, driveway, parking area, vacant lot or sales lot, or an urban or suburban open area to be constructed, used, altered, repaired, demolished, cleared, or leveled, or the earth to be moved or excavated, or fill

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<sup>2</sup> The CTG/HRSGs are rated at 2,029 mmBtu/hr each following project upgrade, and the duct burners are rated at 456 mmBtu/hr. each.

dirt to be deposited, without taking reasonable precautions to effectively prevent fugitive dust from becoming airborne.

- b. Permittee shall not cause, suffer, allow, or permit a vacant lot, or an urban or suburban open area, to be driven over or used by motor vehicles, such as but not limited to all-terrain vehicles, trucks, cars, cycles, bikes, or buggies, without taking reasonable precautions to effectively prevent fugitive dust from becoming airborne.
- c. Permittee shall not disturb or remove soil or natural cover from any area without taking reasonable precautions to effectively prevent fugitive dust from becoming airborne.
- d. Permittee shall not crush, screen, handle or convey materials or cause, suffer, allow or permit material to be stacked, piled or otherwise stored without taking reasonable precautions to effectively prevent fugitive dust from becoming airborne.
- e. Stacking and reclaiming machinery utilized at storage piles shall be operated at all times with a minimum fall of material and in such a manner, or with the use of spray bars and wetting agents, as to prevent excessive amounts of particulate matter from becoming airborne. Other reasonable precautions shall be taken, as necessary, to effectively prevent fugitive dust from becoming airborne.
- f. Permittee shall not cause, suffer, allow or permit transportation of materials likely to give rise to fugitive dust without taking reasonable precautions to prevent fugitive dust from becoming airborne. Earth and other material that is tracked out or transported by trucking and earth moving equipment on paved streets shall be removed by the party or person responsible for such deposits.

G. Surface Stabilization

***[Federally enforceable pursuant to Code §4-1-030 (10/28/15) approved as a SIP element at 82 FR 20267 (5/1/17)]***

1. Permittee shall not cause or allow visible fugitive dust emissions from open areas / vacant lots (areas not being utilized for an activity) to exceed 20% opacity based on EPA Method 9 or the continuous plume or intermittent plume methods listed in PCAQCD Code §4-9-340.
2. Permittee shall erect barriers or no trespassing signs upon evidence of trespass on open areas / vacant lots.
3. Permittee shall stabilize any open area / vacant lot greater than 1.0 acre that has 0.5 acre or more of disturbed surface and sign up for the Pinal County Dust Control forecast within 30 days of discovery. The open area / vacant lot shall be stabilized the day leading up to and the day that is forecast to be high risk for dust emissions.
4. Permittee shall not remove vegetation from open areas / vacant lots without applying dust suppressants before and during the weed abatement. Track out onto paved surfaces must be prevented or eliminated and dust suppressants must be applied following weed abatement to stabilize the entire surface.
5. Stabilization of open areas / vacant lots is determined by the drop ball, threshold friction velocity, flat vegetation or standing vegetation methods listed in PCAQCD Code 4-9-320.
6. Permittee shall not cause or allow visible fugitive dust emissions from unpaved lots (areas being utilized for an activity) greater than 5000 square feet to exceed 20% opacity based on

EPA Method 9 or the continuous plume or intermittent plume methods listed in PCAQCD Code §4-9-340.

7. Permittee shall not allow silt loading equal to or greater than 0.33 oz/ft<sup>2</sup> or allow the silt content to exceed 8% on unpaved lots greater than 5000 square feet.
8. Permittee shall stabilize unpaved lots greater than 5000 square feet by paving, applying a dust suppressant or graveling.
9. Permittee shall clean up track out on a paved public roadway that exceeds 50 feet within 24 hours of discovery and limit opacity to 20% or less while using a rotary brush or broom.
10. Permittee shall make a record of the control measures applied.

#### H. Generally Applicable Opacity Limits

##### 1. SIP Limitation

***[Federally enforceable pursuant to PGAQCD Reg. 7-3-1.1 (6/16/80) approved as a SIP Element at 47 FR 15579 (4/12/82)]***

The opacity of any plume or effluent shall not be greater than 40 percent as determined by Reference Method 9 in the Arizona Testing Manual (ADEQ, 1992). Nothing in this limitation shall be interpreted to prevent the discharge or emission of uncontaminated aqueous steam, or uncombined water vapor, to the open air. Since the emissions from the steam generators are limited to the more stringent 20 percent opacity in §5.C.2.b. of this permit, this section is effectively limited to emissions from the cooling tower.

##### 2. Visibility Limiting Standard

***[Federally enforceable provision, pursuant to Code §2-8-300 (as amended 5/18/05) approved as a SIP element at 47 FR 15043 (3/27/06)]***

The opacity of any plume or effluent from any point source not subject to a New Source Performance Standard adopted under Chapter 6 of the Code, and not subject to an opacity standard in Chapter 5 of the Code, shall not be greater than 20% as determined in Method 9 in 40 CFR 60, Appendix A. None of the existing point sources at the facility are currently subject to this standard.

##### 3. Code Limitation Rotating Equipment Only (Code §5-23-1010)

Permittee shall limit the opacity of emissions from any stationary rotating machinery such that opacity does not exceed 40% for longer than 10 consecutive seconds. Visible emissions when starting cold equipment shall be exempt from the requirement of this subparagraph for the first 10 minutes of operation.

#### I. General Maintenance Obligation

***[Federally Enforceable Provision pursuant to code §3-1-081.E (9/5/01) approved as a SIP element at 66 FR 63166 (12/5/01)]***

At all times, including periods of start-up, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate the permitted facility including associated air pollution control and monitoring equipment in a manner consistent with good air pollution control practice for minimizing emissions.

#### J. Generally Applicable Limits



1. Asbestos NESHAP Compliance  
*[Currently federally enforceable; 40 CFR Part 61, Subpart M]* (Code §§7-1-030, 7-1-060)

Permittee shall comply with Code §§7-1-030.A. and 7-1-060 and 40 CFR Part 61, Subpart M, when conducting any renovation or demolition activities at the facility.

2. Stratospheric Ozone and Climate Protection  
*[Currently federally enforceable; 40 CFR Part 82 Subpart F]*

The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction.

K. Acid Rain Requirements  
 (Code §§3-6-565, 3-1-081.A.6)

1. When provisions or requirements of the regulations incorporated pursuant to Code §3-6-565 (*i.e.* the Acid Rain Program) conflict with any of the other applicable requirements set forth in this permit, the regulations incorporated under §3-6-565 shall apply and take precedence.
2. No permit revision shall be required for increases in emissions that are authorized by allowances acquired pursuant to the Acid Rain Program, provided that such increases do not require a permit revision under any other applicable requirement. Code §3-1-081.A.6.a.
3. No limit shall be placed on the number of allowances held by the source. The source may not, however, use allowances as a defense to noncompliance with any other applicable requirement. Code §3-1-081.A.6.b.
4. Any such allowance shall be accounted for according to the procedures established in regulations promulgated under Part IV of the CAA, commonly known as CAA Title IV. Code §3-1-081.A.6.c.
5. All of the following are prohibited:  
 (Code §3-1-081.A.6.d.)
  - a. Annual emissions of sulfur dioxide in excess of the number of allowances to emit sulfur dioxide held by the owners or operators of the unit or the designated representative of the owners or operators.
  - b. Exceedances of applicable emission rates specified in this permit.
  - c. The use of any allowance prior to the year for which it was allocated.
  - d. Contravention of any other provision of this permit.

L. Additional Plant-Wide Requirements

1. Sandblasting - Plant Wide  
 (Code §5-4-160.)

Permittee shall use at least one of the following control measures during sandblasting operations:

- a. Vacuum collection system.
- b. Confined blasting.
- c. Wet abrasive blasting.
- d. Hydroblasting.

- e. A control measure that is determined by the Control Officer to be equally effective to control particulate matter emissions.

2. Architectural Coatings  
(Code §5-12-370)

Permittee shall not employ, apply, evaporate or dry any architectural coating, as defined in §5-12-370.C, for industrial or commercial purposes, material containing photochemically reactive solvent as defined in §5-9-280 or shall thin or dilute any architectural coating with a photochemically reactive solvent.

3. Other Spray Painting  
(Code §5-13-390)

Permittee shall conduct spray painting operations except architectural coatings in an enclosed area designed to contain not less than 96% by weight of the overspray. An enclosed area means a 3-sided structure with walls a minimum of 8 feet high.

4. Disposal  
(Codes §5-12-370 and 5-13-390)

Permittee shall not, during any one day, dispose of a total of more than one and one-half gallons of any photochemically reactive solvent or of any material containing more than one and one-half gallons of any such photochemically reactive solvent by any means which will permit the evaporation of such solvent into the atmosphere.

5. Cutback and Emulsified Asphalt  
(Code §5-16-670)

Except as exempted in §5-16-680, Permittee:

- a. Shall not use or apply the following materials for paving, construction or maintenance:
  - i. Rapid cure cutback asphalt;
  - ii. Any cutback asphalt material, road oils or tar which contains more than 1.5% by volume VOCs which evaporate at 500F or less using ASTM Test Method D-402-76 or more than 27% by volume total solvent in the asphalt binder.
  - iii. Any emulsified asphalt or emulsified tar containing more than 3% by volume VOCs which evaporate at 500F or less using ASTM Test Method D-244-89.
- b. Shall not store within Pinal County any emulsified or cutback asphalt product which contains more than 1.5% by volume solvent-VOC unless such material lot included a designation of solvent-VOC content on data sheet(s) expressed in percent solvent-VOC by volume.
- c. Permittee shall keep monthly records of any use of asphaltic/bituminous material containing more than 1.5 percent by volume solvent-VOC.

M. NESHAP (Subpart ZZZZ) Standards - Stationary Reciprocating Internal Combustion Engines (RICE) NESHAP [*Federally enforceable; 40 CFR 63.6603.a, 63.6605, 63.6625.e, 63.6625.f, 63.6625.h, 63.6625.i, 40 CFR Part 63 Subpart ZZZZ Table 2d, Table 6*]

Owners and operators of emergency stationary RICE that commenced construction before June 12, 2006 shall comply with the following:  
(Emergency Fire Pump)

1. Permittee shall use a diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted:
  2.
    - a. 15 ppm maximum sulfur content for diesel fuel;
    - b. Cetane index or aromatic content, as follows:
      - i. A minimum cetane index of 40, or;
      - ii. A maximum aromatic content of 35 volume percent.
  3. Change the oil and filter every 500 hours of operation or annually, whichever comes first. or,  
Conduct an oil analysis every 500 hours of operation or annually, whichever comes first. If the analysis demonstrates that any of the following parameters have been exceeded the oil must be changed within 2 business days of receiving the results or 2 business days before commencing operation of the engine, whichever is later. The oil must be changed if:  
The Total Base Number is less than 30% of the Total Base Number of oil when new or;  
The viscosity of the oil has changed by more than 20% from the viscosity of the oil when new or;  
The percent water content (by volume) is greater than 0.5%
  4. Inspect the air cleaner every 1000 hours of operation or annually, whichever comes first, and replace as necessary;
  5. Inspect the hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary; and
  6. Maintain the stationary RICE according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
  7. Install a non-resettable hour meter
  8. Minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes
  9. Operate the engine in a manner consistent with safety and good air pollution control practices for minimizing emissions
- N. NSPS (Subpart JJJJ) Standards - Stationary Spark Ignition (SI) Internal Combustion Engines (ICE) [*Federally enforceable; 40 CFR 60.4231.c and 60.4233.c, 60.4234, 60.4237, 60.4243.a*]

Owners and operators of emergency stationary RICE that commenced construction after June 12, 2006 shall comply with NESHAP 40 CFR 63 Subpart ZZZZ standards by meeting the applicable requirements of NSPS 40 CFR 60 Subpart JJJJ.  
(Emergency Propane Generator)

1. Owners and operators of 2007 model year and later emergency stationary SI ICE greater than 25 hp and less than 130 hp that are rich burn engines that use LPG must purchase an engine

that complies with the Phase I emission standards in 40 CFR 90.103, applicable to Class II engines, and other requirements for new non-road SI engines in 40 CFR 90 and maintain such compliance for the entire life of the engine

2. Owners and operators must install a non-resettable hour meter

O. Hours of Operation for Emergency Engines

**[Federally enforceable; 40 CFR 60.4243.d, 40 CFR 6640.f]**

1. Owners and operators of stationary Internal Combustion Engines (ICE) must limit annual calendar year hours of operation as follows to be considered an emergency stationary ICE.
  - a. There is no limit on the use of emergency generator in emergency situations
  - b. Permittee may operate the emergency engine for the purpose of maintenance checks and readiness testing, provided the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, the regional transmission organization or the insurance company associated with the engine. Permittee shall not operate the ICE for the purposes of maintenance checks and readiness testing for more than 100 hours per year unless the Permittee maintains records identifying the Federal, State or local standards that require maintenance and testing of emergency internal combustion engines beyond 100 hours per year. Copies of such records shall be provided to the District upon request.
  - c. Non-emergency operation is limited to 50 hours per calendar year. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance, readiness checks, and demand response operation.
  - d. The 50 hours per calendar year for non-emergency operation cannot be used to supply power to another entity without a separate permit issued by the District.

**6. Compliance Demonstration**

A. Non-NSPS and NSPS Subpart KKKK NOX Testing (SCCT4 and SCCT5)  
**[Mandated by 40 CFR §70.6(a)(3) Codes §§3-1-160 & 3-1-170, R18-2-311, R18-2-312]**

1. Initial Performance Testing

Within 60 days after achieving maximum production rate of each CT (SCCT4 and SCCT5) but no later than 180 days after the initial start-up of the CTs, Permittee shall conduct performance tests, using standard test methods approved by the EPA (40 CFR Part 60) as specified below. If any change to the test methods and procedures specified in this permit condition are approved, the Permittee shall submit an application to revise the permit to reflect the approved alternate test methods. These tests shall be performed at a maximum heat input capacity available on the day of testing. The continuous monitoring systems required by this permit shall be operating prior to conducting the performance tests. The performance tests shall address:

- a. Nitrogen oxides emissions: Ref. Part 60, App. A, Ref. Method 7E **or** use NOX CEMS RATA as the initial NOX performance test (NSPS Subpart KKKK, 40 CFR Part §60.4400.(b).(5), §60.4405)
- b. Carbon monoxide emissions: Ref. Part 60, App. A, Ref. Method 10

- c. Particulate matter emissions (PM<sub>10</sub>/PM<sub>2.5</sub>): Ref. Part 60, App. A, Ref. Method 5 or 201A and Method 202 for condensable PM.
- d. Volatile organic compound emissions (VOC): Ref. Part 60, App. A, Ref. Method 25a and Method 18.
- e. Opacity: Ref. Part 60, App. A, Ref. Method 9, 40 CFR §60.11
- f. Ammonia

2. Test Protocol

Test protocols for all the tests shall be submitted to the District at least thirty (30) days prior to the test.

3. Performance Test Notice

Notice of any performance test required by this permit shall be submitted to the District at least thirty days (30) days prior to running the test.

4. Test Report

A copy of each test report shall be submitted to the District for approval within forty-five (45) days after the test. In addition to any other information required under this permit, the test report shall specifically define that the following pollutants meet the emission limitations specified in §Section 5.C of this permit:

- a. NOX emissions rates, defined as function of heat input
- b. PM<sub>10</sub> emission rates, defined as a function of heat input
- c. CO emission rates, defined as a function of heat input
- d. VOC emission rates, defined as a function of heat input

B. Performance Test – CTG02  
[40 CFR 60.8, Code §§3-1-160 & 3-1-170)

1. Initial Performance Testing

Within 60 days upon completion of the Combustion Turbine Upgrade Project for CTG02, but no later than 180 days after the initial start-up, Permittee shall conduct performance tests, using standard test methods approved by the EPA (40 CFR Part 60) specified below, or equivalent methods as approved by the District pursuant to approval of the test plan required below. These tests shall be performed at a maximum heat input capacity available at the day of testing. The continuous monitoring systems required by this permit shall be operating prior to conducting the performance tests. Separate batteries of tests shall quantify emissions during full-power production of the CTG/HRSG with Duct Burners OFF, and during power production from the CTG/HRSG with Duct Burners ON. Each battery of performance tests shall address:

- a. Nitrogen oxides emissions: Ref. Part 60, App. A, Ref. Method 7E
- b. Carbon monoxide emissions: Ref. Part 60, App. A, Ref. Method 10
- c. Particulate matter emissions (PM<sub>10</sub>/PM<sub>2.5</sub>): Ref. Part 60, App. A, Ref. Method 5
- d. Volatile organic compound emissions (VOC): Ref. Part 60, App. A, Ref. Method 25a
- e. Opacity: Ref. Part 60, App. A, Ref. Method 9, 40 CFR §60.11
- f. Ammonia:

2. Test Protocol

Test protocol for all the tests shall be submitted to the District at least thirty (30) days prior to the test.

3. Performance Test Notice

Notice of any performance test required by this permit shall be submitted to the District at least thirty (30) days prior to running the test.

4. Test Report

A copy of each test report shall be submitted to the District for approval within forty-five (45) days after the test. In addition to any other information required under this permit, the Test Report for all mandatory tests shall, for both of the firing-conditions tested, specifically define:

- a. VOC emissions rates, defined as function of heat input.
- b. PM<sub>10</sub> emission rates, defined as a function of heat input.

C. Non-NSPS and NSPS Subpart KKKK NOX Performance Tests (All Units)  
[40 CFR 60.8, Code §§3-1-160 & 3-1-170, R18-2-311, R18-2-312]

1. Subsequent Performance Testing

Permittee shall conduct performance tests, using standard test methods approved by the EPA (40 CFR Part 60) as specified below. If any change to the test methods and procedures specified in this permit condition are approved, the Permittee shall submit an application to revise the permit to reflect the approved alternate test methods. These tests shall be performed at a maximum heat input capacity available at the day of testing. The continuous monitoring systems required by this permit shall be operating prior to conducting the performance tests. Separate batteries of tests shall quantify emissions during full-power production of the CTG/HRSG with Duct Burners OFF, and during power production from the CTG/HRSG with Duct Burners ON (applicable to CTG01 and CTG02 only). Each battery of performance tests shall address:

- a. Nitrogen oxides emissions: Ref. Part 60, App. A, Ref. Method 7E, or Permittee may use NOX CEMS RATA to demonstrate compliance with the NOX emission limits (NSPS Subpart KKKK, 40 CFR §60.4340(b).(1))
- b. Carbon monoxide emissions: Ref. Part 60, App. A, Ref. Method 10
- c. Particulate matter emissions (PM<sub>10</sub>/PM<sub>2.5</sub>): Ref. Part 60, App. A, Ref. Method 5 or Method 201A (CTG01 and CTG02), Method 5 or Method 201A, and Method 202 (SCCT4 and SCCT5).
- d. Volatile organic compound emissions (VOC): Ref. Part 60, App. A, Ref. Method 25a
- e. Opacity: Ref. Part 60, App. A, Ref. Method 9, 40 CFR §60.11
- f. Ammonia:

2. Test Protocols

Test protocols for all the tests shall be submitted to the District at least thirty (30) days prior to the test.

3. Performance Test Notices

Notice of any performance test required by this permit shall be submitted to the District at least thirty (30) days prior to running the test.

4. Test Reports

A copy of each test report shall be submitted to the District for approval within forty-five (45) days after the test. In addition to any other information required under this permit, the Test Report for all mandatory tests shall, for both of the firing-conditions tested, specifically define:

- a. VOC emissions rates, defined as function of heat input.
- b. PM<sub>10</sub> emission rates, defined as a function of heat input.

5. Recurring Testing Cycle

- i. Performance tests shall be repeated within 5 years of the previous performance test in accordance with Section §6.A.1 of this permit.
- ii. Subsequent NO<sub>x</sub> performance tests shall be conducted on an annual basis (no more than 14 calendar months following the previous performance test) in accordance with Section §6.C.1 of this permit. If the Permittee elects to demonstrate compliance using the NOX-diluent CEMS, no subsequent performance tests are required, and RATA shall be performed at the frequency required by 40 CFR Part 75, Appendix B, Sections 2.3.1.1 or 2.3.1.2 as applicable.

6. Elective Testing to Assess Startup/shutdown Ambient Impacts

Permittee may, at its election, design a testing program configured to accurately quantify NO<sub>x</sub> emission rates, and ambient impacts, during startup and shutdown events. The protocol for any such elective testing program shall be approved in advance by the District. An essential element of the ensuing test report shall be an ambient impact analysis for NO<sub>x</sub> emissions, which analysis shall initially quantify the additional mass of NO<sub>x</sub> emissions (relative to steady state operation) that a startup/shutdown cycle produces, and from that test-based value, calculate the maximum allowable number of startup/shutdown cycles will still limit anticipated ambient NO<sub>x</sub> impacts to no more than 80% of the 1.0 µg/m<sup>3</sup> significance level defined in 40 CFR §51.165.b.2. If the calculated number of allowable startup/shutdown cycles exceeds the number under the limitation defined elsewhere under this permit, permittee may submit a minor permit revision application, seeking the substitution of the greater number of allowable startup/shutdown events. If the calculated number of allowable startup/shutdown events falls below the number otherwise allowed under this permit, the Permittee shall submit such a permit revision application to reduce the allowable number of such startup/shutdown events.

7. Full-Speed-No-Load Maintenance/Testing Operation Notices

Notice of any maintenance/testing operations in accordance with this permit shall be submitted to the District upon knowledge of the need for performing the test(s).

8. NSPS (Subpart TTTT) Greenhouse Gas Emissions for Electric Generating Units Testing Requirements SCCT4 and SCCT5 [*Federally enforceable pursuant to 40 CFR 60.5580*]

Design efficiency of the combustion turbines shall be determined using one of the following methods: ASME PTC 22 Gas Turbines (incorporated by reference, see §60.17), ASME PTC 46 Overall Plant Performance (incorporated by reference, see §60.17) or ISO 2314 Gas turbines—acceptance tests (incorporated by reference, see §60.17).

D. Compliance Requirements Subpart KKKK

**[40 CFR Part §60.4333]**

Upon completion of the Combustion Turbine Upgrade Project for CTG01 and CTG02 and upon installation and operation of SCCT4 and SCCT5, permittee shall operate and maintain all the stationary combustion turbines' air pollution control equipment, and monitoring equipment in a manner consistent with good air pollution control practices for minimizing emissions at all times including during startup, shutdown, and malfunction.

E. Monitoring Requirements Subpart KKKK  
**[40 CFR §60.4335(b), §60.4340(a), §60.4345(a)]**

Upon completion of the Combustion Turbine Upgrade Project for CTG01 and CTG02 and upon installation and operation of SCCT4 and SCCT5.

1. Permittee shall use NOX continuous emission monitoring system (CEMS) installed, certified, and operated in accordance with 40 CFR Part 75 Appendix A.
2. NOX CEMS RATA may be used in place of demonstrating compliance with an annual performance test.

F. Monitoring Requirements Subpart TTTT (SCCT4 and SCCT5)  
**[40 CFR §60.5520(d), §60.5525]**

1. Stationary combustion turbines subject to a heat input-based standard of this subpart that are only permitted to burn one or more uniform fuels with a consistent chemical composition (*i.e.*, uniform fuels) that result in a consistent emission rate of 160 lb CO<sub>2</sub>/MMBtu or less shall maintain purchase records for permitted fuels.
2. Permittee shall maintain purchase records for the permitted fuels.

G. General Monitoring Requirements  
**[Mandated by 40 CFR §70.6(a)(3)]**

1. Instrumental Emissions Monitoring - Oxides of Nitrogen (All Units)  
 [40 CFR 60.47a(c) & (d), Code §3-1-150.]

Permittee shall install, calibrate, maintain, and operate a continuous emissions monitoring system, and record the output of the system, for measuring:

- a. Nitrogen oxides emissions discharged to the atmosphere during startup, shutdown, and normal operations of the combustion turbines.
  - b. Either the oxygen or carbon dioxide content of flue gas from each unit, with the measurement taken where the NO<sub>x</sub> emissions are monitored.
  - c. On a calendar-month basis, Permittee shall generate a record of cumulative actual nitrogen oxide emissions from each unit, emitted for the previous month and for the preceding 12-months and shall compare the total annual nitrogen oxides emissions limitations imposed under Section §5.C.2 for the SCCT4 and SCCT5 units. Permittee shall maintain a record of those monthly total calculations, and monthly conclusion regarding compliance with the NOX cap.
2. Instrumental Emissions Monitoring - Carbon Monoxide  
 [Code §3-1-150.]
    - a. On each unit, Permittee shall install, calibrate, maintain, and



operate a continuous monitoring system, and record the output of the system, for measuring carbon monoxide emissions to the atmosphere. Monitoring equipment required under this subsection shall be installed and operated in accord pursuant to a plan submitted to the District by the permittee at least 120 days prior to the initial performance tests required under this permit. The plan shall give due consideration to the requirements of 40 CFR Part 60, Appendix Specifications 4 and/or 4a.

- b. On a calendar-day basis, Permittee shall generate a record of the cumulative actual Carbon monoxide emissions from CTG01 and CTG02, emitted for the preceding 365-calendar-days, and shall compare the total to 365-day CO emission cap imposed under that total to the annual CO emission cap imposed under §Section 5.D.1.b of this permit. Permittee shall maintain a record of these daily total calculations and daily conclusions regarding compliance with the CO cap.
- c. On a calendar-month basis, Permittee shall generate a record of cumulative actual carbon monoxide emissions from SCCT4 and SCCT5, emitted for the preceding 12-months and shall compare the total annual carbon monoxide emissions limitations imposed under §5.C.4 for the SCCT4 and SCCT5 units. Permittee shall maintain a record of those monthly total calculations, and monthly conclusion regarding compliance with the CO cap.

3. General Parametric Emission Monitoring Requirements  
[Code §3-1-150]

To provide a basis for the other aspects of parametric monitoring set forth below, Permittee shall maintain operating logs, which may be digital in form, detailing:

- a. CTG01 and CTG02 Units
  - i. Hours of operation for the CTG01 and CTG02 units in a manner that may be mapped to corresponding NO<sub>x</sub> and CO monitoring records, defining periods of normal operation of the units, with Duct Burners ON, with Duct Burners OFF, "general start-up" periods, "CO startup" periods, "general shut-down periods," "CO shut-down periods," and "maintenance/testing operation" periods.
  - ii. Fuel flow/heat input to the CTG01 and CTG02 units, separately defining fuel flow/heat input during the various system operating modes, including during startup phase 1, during startup phase 2, during normal operation of the CTG/HRSG with Duct Burners OFF, during normal operation of the CTG/HRSG with Duct Burners ON, and during shutdown.
  - iii. To assess compliance with the hours-of-operation limitations defined above under §5.D.1.a.iv, within 15 days of the close of each calendar month, Permittee shall tabulate hours-of-operation during the preceding 12 months, reflecting operating time in "CO startup," and "maintenance/testing operation"
- b. SCCT4 and SCCT5 Units
  - i. Hours of operation for the SCCT4 and SCCT5 units in a manner that

may be mapped to corresponding NO<sub>x</sub> and CO monitoring records, defining periods of normal operations, startup operations, and shutdown operations of the units

- ii. Fuel flow/heat input to the SCCT4 and SCCT5 units, separately defining fuel flow/heat input during the various system operating modes, including during startup, during normal operation and during shutdown.
  - iii. By the 10th day of each month, Permittee shall calculate and record the total heat input from SCCT4 and SCCT5 separately for each unit, for the previous calendar month. Heat input shall be calculated following the procedures of 40 CFR Part 75, Appendix D.
  - iv. By the 10th day of each month, Permittee shall calculate and record the combined total heat input from SCCT4 and SCCT5 on a rolling 12-month total sum basis. This value shall be calculated as the sum of the heat input from both units during the previous month and during the preceding eleven months. Permittee shall compare this 12-month total to the annual heat input limitation under Section 5.C.5 of this permit. Records of the monthly total calculations and compliance with the heat input limitations shall be maintained.
- c. To verify compliance with the operational limitations on the diesel-driven fire pump, Permittee shall maintain a log reflecting hours of non-emergency operation.
4. Parametric Emissions Monitoring - Volatile Organic Compounds [Code §3-1-150.]
- a. By the 10th day of each month, Permittee shall calculate and record the quantity of VOC emissions from SCCT4 and SCCT5, separately for each unit, for the previous calendar month. Calculations shall be performed using records of fuel use data, startup and shutdown events, and emission factors, as provided in paragraph c below.
  - b. By the 10th day of each month, Permittee shall calculate and record the combined VOC emissions from SCCT4 and SCCT5 on a rolling 12-month total sum basis. This value shall be calculated as the sum of the emissions from both units during the previous month and during the preceding eleven months. Permittee shall compare this 12-month total to the annual VOC emission limitation under Section §5.C.3 of this permit. Records of the monthly total calculations and compliance with the VOC emission limitations shall be maintained.
  - c. Monthly total VOC emissions from each of SCCT4 and SCCT5 shall be calculated, separately for each unit as the sum of the emissions from that unit during startup and shutdown events, calculated as provided in paragraph d below, and the emissions from that unit during non-startup/shutdown periods, calculated as provided in paragraph e below.
  - d. VOC emissions from startup and shutdown events at a combustion turbine shall be calculated as the product of the number of events and an approved emission factor of 2.7 pounds per event. An event is one startup followed by one shutdown.
  - e. VOC emissions during non-startup/shutdown operating periods at a combustion

turbine shall be calculate as the product of the cumulative heat input during such period, expressed in MMBu, and the approved emission factor, expressed in lb/MMBtu:

- i. Permittee shall use an approved VOC emission factor of 0.009 lb/MMBtu to calculate emissions from a combustion turbine during operating periods from the date of initial startup of a combustion turbine through the last day of the calendar month during which PCAQCD first approves a test-derived emission factor for such combustion turbine in accordance with paragraph f below.
  - ii. Following approval of a test-derived VOC emission factor for a combustion turbine by PCAQCD in accordance with paragraph f below, Permittee shall use the approved test-derived VOC emission factor to calculate emissions during operating periods beginning with the first day of the calendar month after such approval. Permittee shall continue to use such approved test-derived VOC emission factor until it is superseded by approval of a new test-derived VOC emission factor for such combustion turbine.
- f. During each VOC performance test conducted at SCCT4 or SCCT5 pursuant to Section §6.A of this permit, Permittee shall calculate a test-derived VOC emission factor for such combustion turbine and shall submit such emission factor to PCAQCD for approval. The test derived emission factor shall be calculated as the arithmetic mean of the emission factor results for all valid runs conducted as part of such performance test. The emission factor result for each run shall be calculated by dividing the measured emission rate during that run, expressed in lb/hr by the heat input rate during that run, expressed in MMBtu/hr.

5. Parametric Emissions Monitoring - Particulate Matter  
[Code §3-1-150.]

- a. By the 10th day of each month, Permittee shall calculate and record the quantity of PM/PM10/PM2.5 emissions from SCCT4 and SCCT5, separately for each unit, for the previous calendar month. Calculations shall be performed using records of fuel use data, startup and shutdown events, and emission factors, as provided in paragraph c below.
- b. By the 10th day of each month, Permittee shall calculate and record the Combined PM/PM10/PM2.5 emissions from SCCT4 and SCCT5 on a rolling 12-month total sum basis. This value shall be calculated as the sum of the emissions from both units during the previous month and during the preceding eleven months. Permittee shall compare this 12-month total to the annual PM/PM10/PM2.5 emission limitation under Section §5.C.1 of this permit. Records of the monthly total calculations and compliance with the PM/PM10/PM2.5 emission limitations shall be maintained.
- c. Monthly total PM/PM10/PM2.5 emissions from each of SCCT4 and SCCT5 shall be calculated, separately for each unit as the sum of the emissions from that unit during startup and shutdown events, calculated as provided in paragraph d below, and the emissions from that unit during non-startup/shutdown periods, calculated as provided in paragraph e below.
- d. PM/PM10/PM2.5 emissions from startup and shutdown events at a combustion turbine shall be calculated as the product of the number of events and an

approved emission factor of 5.1 pounds per event. An event is one startup followed by one shutdown.

- e. PM/PM10/PM2.5 emissions during non-startup/shutdown operating periods at a combustion turbine shall be calculate as the product of the cumulative heat input during such period, expressed in MMBu, and the approved emission factor, expressed in lb/MMBtu:
  - i. Permittee shall use an approved PM/PM10/PM2.5 emission factor of 0.011 lb/MMBtu to calculate emissions from a combustion turbine during operating periods from the date of initial startup of a combustion turbine through the last day of the calendar month during which PCAQCD first approves a test-derived emission factor for such combustion turbine in accordance with paragraph f below.
  - ii. Following approval of a test-derived PM/PM10/PM2.5 emission factor for a combustion turbine by PCAQCD in accordance with paragraph f below, Permittee shall use the approved test-derived PM/PM10/PM2.5 emission factor to calculate emissions during operating periods beginning with the first day of the calendar month after such approval. Permittee shall continue to use such approved test-derived PM/PM10/PM2.5 emission factor until it is superseded by approval of a new test-derived PM/PM10/PM2.5 emission factor for such combustion turbine.
- f. During each PM/PM10/PM2.5 performance test conducted at SCCT4 or SCCT5 pursuant to Section §6.A of this permit, Permittee shall calculate a test-derived PM/PM10/PM2.5 emission factor for such combustion turbine and shall submit such emission factor to PCAQCD for approval. The test derived emission factor shall be calculated as the arithmetic mean of the emission factor results for all valid runs conducted as part of such performance test. The emission factor result for each run shall be calculated by dividing the measured emission rate during that run, expressed in lb/hr by the heat input rate during that run, expressed in MMBtu/hr.

6. NSPS Subpart GG Fuel Sulfur Monitoring (CTG02)  
[40 CFR §60.334. h; Code §6-1-030]

For turbine units affected by the 40 CFR part 60 Subpart GG fuel sulfur limitation defined above as alternative means of quantifying sulfur content in the natural gas fuel for the turbine(s), Permittee shall determine fuel sulfur content by any of:

- a. Sampling the gaseous fuel daily; or
- b. Custom Monitoring pursuant to Rasnic memorandum of August 14, 1987.
  - i. Analysis for fuel sulfur content of the natural gas shall be conducted using one of the approved ASTM reference methods for the measurement of sulfur in gaseous fuels, or an approved alternative method. The reference methods are: ASTM D1072-80; ASTM D3031-81; ASTM D3246-81; and ASTM D4084-82 as referenced in 40 CFR §60.335(b)(2).
  - ii. Commencing upon initial startup sulfur monitoring shall be conducted twice monthly for six months. If this monitoring shows little variability in the fuel sulfur content, and indicates consistent

compliance with 40 CFR §60.333, then sulfur monitoring shall be conducted once per quarter for six quarters.

- iii. If after the monitoring required in b.ii. above, or herein, the sulfur content of the fuel shows little variability and, calculated as sulfur dioxide, represents consistent compliance with the sulfur dioxide emission limits specified under 40 CFR §60.333, sample analysis shall be conducted twice per annum. This monitoring shall be conducted during the first and third quarters of each calendar year.
- iv. Should any sulfur analysis as required in items b.ii or b.iii above indicate noncompliance with 40 CFR §60.333, the owner or operator shall notify PCAQCD of such excess emissions and the custom schedule shall be re-examined by the Environmental Protection Agency. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
- v. If there is a change in fuel supply, the owner or operator must notify PCAQCD of such change for re-examination of this custom schedule. A substantial change in fuel quality shall be considered as a change in fuel supply. Sulfur monitoring shall be conducted weekly during the interim period when this custom schedule is being re-examined.
- vi. Records of sample analysis and fuel supply pertinent to this custom schedule shall be retained for period of three years, and be available for inspection by personnel of federal, state, and local air pollution control agencies; or
- c. Maintaining the gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contract for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less, or
- d. To the extent such a monitoring program may be allowed by a future revision to 40 CFR Part 60, Subpart GG, then, commencing on the effective date of that revision, annually certifying that the natural gas from the permittee's own pipeline conforms to the Federal Energy Regulatory Commission (FERC) approved Tariff agreement that limits transmission to pipeline quality gas of sulfur content less than 0.8 percent by weight.

7. Parametric Emissions Monitoring - Sulfur Dioxide  
[Code §3-1-150.]<sup>3</sup>

As a surrogate measurement for monitoring emissions of sulfur dioxide, Permittee shall maintain daily records reflecting total fuel consumption in each unit. On a cycle adequate to comply with the emission limitations and semi-annual reporting requirements under this permit, Permittee shall utilize the SO<sub>2</sub> emission calculation methodology set forth in 40 CFR part 75, Appendix D, to calculate and report SO<sub>2</sub> emissions. Permittee shall determine fuel sulfur content in accordance with the procedures set forth in 40 CFR Part 75, Appendix D.

8. Parametric Emission Monitoring - General Maintenance

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<sup>3</sup> See 40 CFR Part 75, Appendix D for the antecedent for this monitoring methodology.

[Code §3-1-150.]

To assure compliance with the general maintenance obligation defined under this permit, Permittee shall maintain repair logs with regard to each unit, duct burner, each catalytic reactor unit, each reagent storage system, if any, and the cooling tower drift eliminator.

H. Excess Emissions - NO<sub>x</sub> (CTG01, SCCT4 and SCCT5)  
[40 CFR Part 60, Subpart KKKK, Section §60.4380.(b)]

For turbines using continuous emission monitoring, excess emissions and monitoring downtime are defined as:

1. An excess emissions is any unit operating period in which the 4-hour or 30-day rolling average NO<sub>x</sub> emission rate exceeds the applicable emission limit in §60.4320. For the purposes of this subpart, a “4-hour rolling average NO<sub>x</sub> emission rate” is the arithmetic average of the average NO<sub>x</sub> emission rate in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given hour and the three unit operating hour average NO<sub>x</sub> emission rates immediately preceding that unit operating hour. Calculate the rolling average if a valid NO<sub>x</sub> emission rate is obtained for at least 3 of the 4 hours<sup>5</sup>. For the purposes of this subpart, a “30-day rolling average NO<sub>x</sub> emission rate” is the arithmetic average of all hourly NO<sub>x</sub> emission data in ppm or ng/J (lb/MWh) measured by the continuous emission monitoring equipment for a given day and the twenty-nine unit operating days immediately preceding that unit operating day. A new 30-day average is calculated each unit operating day as the average of all hourly NO<sub>x</sub> emissions rates for the preceding 30 unit operating days if a valid NO<sub>x</sub> emission rate is obtained for at least 75 percent of all operating hours.<sup>6</sup>
2. For operating periods during which multiple emissions standards apply, the applicable standard is the average of the applicable standards during each hour. For hours with multiple emissions standards, the applicable limit for that hour is determined based on the condition that corresponded to the highest emissions standard.

I. Excess Emissions - SO<sub>2</sub> (CTG01, SCCT4 and SCCT5)  
[40 CFR Part 60, Subpart KKKK, Section §60.4385]

If the option to monitor the sulfur content of the fuel is chosen, excess emissions and monitoring downtime are defined as:

1. For samples of gaseous fuel, an excess emission occurs each unit operating hour included in the period beginning on the date and hour of any sample for which the sulfur content of the fuel being fired in the combustion turbine exceeds the applicable limit and ending on the date and hour that a subsequent sample is taken that demonstrates compliance with the sulfur limit.
2. A period of monitor downtime begins when a required sample is not taken by its due date. A period of monitor downtime also begins on the date and hour of a required sample, if invalid results are obtained. The period of monitor downtime ends on the date and hour of the next valid sample.

J. Excess Emissions – NO<sub>x</sub> [40 CFR Part 60, Subpart GG] – CTG02  
Until the completion of the Combustion Turbine Upgrade Project, excess emissions are defined as:

1. An hour of excess emissions shall be any unit operating hour in which the 4-hour rolling average NO<sub>x</sub> concentration exceeds the applicable emission limit in Permit Condition 5.C.3.a. For the purposes of this subpart, a “4-hour rolling average NO<sub>x</sub> concentration” is

<sup>5</sup> 4-hour excess emission averaging period is applicable to the simple cycle units.

<sup>6</sup> 30-day rolling excess emission averaging period is applicable to the combined cycle and combined heat and power units with heat recovery.

the arithmetic average of the average NO<sub>x</sub> concentration measured by the CEMS for a given hour (corrected to 15 percent oxygen and, if required under 40 CFR §60.335(b) (1), to ISO standard conditions) and the three *unit operating hour*<sup>4</sup> average NO<sub>x</sub> concentrations immediately preceding that *unit operating hour*.

2. A period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour, for either NO<sub>x</sub> concentration or diluent (or both).
3. Each report shall include the ambient conditions (temperature, pressure, and humidity) at the time of the excess emission period. The Permittee does not have to report ambient conditions if they opt to use the worst case ISO correction factor as specified in 40 CFR §60.334(b)(3)(ii), or if the Permittee is not using the ISO correction equation under the provisions of 40 CFR §60.335(b)(1).

K. Recordkeeping

**[Mandated by 40 CFR §70.6(a)(3)]** (Code §3-1-083)

1. Permittee shall maintain at the source, a file of all measurements, including continuous monitoring-system-, monitoring-device-, and performance- testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; all records of maintenance/testing operations; and all other information required pursuant to any federally enforceable provision of this permit, recorded in a permanent form suitable for inspection.
2. Permittee shall record the following in a permanent logbook, which may be in written or digital form, for inclusion in the semiannual <sup>7</sup>report:
  - a. Emissions of nitrogen oxides, carbon monoxide, particulate matter (PM<sub>10</sub>), volatile organic compounds, and sulfur dioxide;
  - b. Total natural gas consumed;
  - c. Run times associated with operation of CTG/HRSG with Duct Burners OFF and CTG/HRSG with Duct Burners ON;
  - d. The number of start-up and shut-down cycles for each unit; **and**
  - e. Total net electrical output generated.
3. Permittee shall maintain records of the occurrence and duration of any start-up, shutdown, maintenance/testing operations, or malfunction in the operation of the permitted facility or any air pollution control equipment.

L. Emergency Generator and Fire Pump Records

**[40 CFR 60.6243.a.1, and 60.6245.a, 60.6245.b, 40 CFR 63.6655]**

Permittee shall:

- a. Record the number of hours the engine operated for non-emergency and emergency situations and document what classified the operation as emergency.

<sup>4</sup> As defined in 40 CFR §60.331(s) unit operating hour means a clock during which any fuel is combusted in the affected unit.

<sup>7</sup> 40 CFR Part 60, Subpart Da requires semi-annual reporting.

- b. Keep records of maintenance conducted consistent with the manufacturer's instructions and documentation from the manufacturer that the engine is certified to meet the applicable emission standards
- c. Keep records of malfunctions, actions taken to minimize emissions and corrective actions.

M. Compliance Reporting Requirements Subpart KKKK

*[40 CFR §60.4375]*

- 1. For each affected unit required to continuously monitor parameters or emissions, or to periodically determine the fuel sulfur content under this subpart, reports of excess emissions and monitor downtime shall be submitted in accordance with §60.7(c). Excess emissions must be reported for all periods of unit operation, including start-up, shutdown, and malfunction.
- 2. For each affected unit that performs annual performance tests in accordance with §60.4340(a), a written report of the results of each performance test before the close of business on the 60 day following the completion of the performance test shall be submitted.

N. General Compliance Reporting

*[Mandated by 40 CFR §§70.6(a)(3) and 70.6(c)(4)]* (Code §3-1-083.A)

In order to demonstrate compliance with the provisions of this permit, the Permittee shall submit a semi-annual report containing the information required to be recorded pursuant to this permit. All instances of deviations from permit requirements shall be clearly identified in such reports. For brevity, such deviation reports may incorporate by reference any written supplemental upset reports filed by Permittee during the reporting period. The report shall be submitted to the District within 30 days after the end of each semiannual period. Appendix A of this permit is a form which may be used for the report.

O. Regular Compliance/Compliance Progress Certification

*[Mandated by 40 CFR §§70.5(c)(8), 70.5(c)(9), 70.6(c)(4), 70.6(c)(5)]*

Permittee shall annually submit to the Control Officer and also to the Administrator of the US EPA (Enforcement Office (AIR5), EPA Region 9, 75 Hawthorne St, San Francisco, CA 94105-3901) a certification of compliance with the provisions of this permit. The certification shall:

- 1. Be signed by a responsible official, namely the president, secretary, treasurer or vice-president of the corporation, or such other person as may be approved by the Control Officer as an administrative amendment to this permit;
- 2. Identify each term or condition of the permit that is the basis of the certification;
- 3. Verify the compliance status with respect to each such term or condition;
- 4. Verify whether compliance with respect to each such term or condition has been continuous or intermittent;
- 5. Identify the permit provision, or other, compliance mechanism upon which the certification is based; and
- 6. Be postmarked within thirty (30) days of the beginning of each calendar year.

**7. Other Reporting Obligations**



- A. Deviation Reporting Requirement  
(Code §3-1-083.A.3.b.) *[Mandated by 40 CFR §§70.6(a)(3)(iii)(B), 70.6(g)][40 CFR 63.6640.b]*

Permittee shall report any deviation from the requirements of this permit along with the probable cause for such deviation, and any corrective actions or preventative measures taken to the District within fifteen days of the deviation unless earlier notification is required by the provisions of Section 9.P. of this permit.

- B. Annual Emissions Inventory  
*[Federally Enforceable Provision pursuant to code §3-1-103.A&B (2/22/95) approved as a SIP element at 65 FR 79742 (12/2/00)]*

Permittee shall complete and submit to the District an annual emissions inventory, disclosing actual emissions for the preceding calendar year. The submittal shall be made on a form provided by the District. The inventory is due by the latter of March 31st, or ninety (90) days after the form is furnished by the District.

**8. Fee Payment**  
**[Mandated by 40 CFR §§70.6(a)(7), 70.9]**

As an essential term of this permit, an annual permit fee shall be assessed by the District and paid by Permittee in accord with the provisions of Code Chapter 3, Article 7 generally, and Code §3-1-081.A.9 specifically. The annual permit fee shall be due on or before the anniversary date of the issuance of an individual permit, or formal grant of approval to operate under a general permit. The District will notify the Permittee of the amount to be due, as well as the specific date on which the fee is due.

**9. General Conditions**

- A. Term  
**[Mandated by 40 CFR §70.6(a)(2)]** (Code §3-1-089)

This permit shall have a term of five (5) years, measured from the date of issuance.

- B. Basic Obligation  
**[Mandated by 40 CFR §§70.4(b)(15), 70.6(a)(6(i), 70.6(a)(6)(ii), 70.7.b]** (Code §3-1-081.)

1. The owner or operator ("Permittee") of the facilities shall operate them in compliance with all conditions of this permit, the Pinal County Air Quality Control District ("the District") Code of Regulations ("Code"), and consistent with all State and Federal laws, statutes, and codes relating to air quality that apply to these facilities. Any permit noncompliance is grounds for enforcement action; for a permit termination, revocation and reissuance, or revision; or for denial of a permit renewal application and may additionally constitute a violation of the Clean Air Act (1990).
2. All equipment, facilities, and systems used to achieve compliance with the terms and conditions of this permit shall at all times be maintained and operated in good working order.

- C. Duty to Supplement Application  
**[Mandated by 40 CFR §§70.5(b), 70.6(a)(6)(v)]** (Code §§3-1-050.H, 3-1-081.A.8.e, 3-1-110)

Even after the issuance of this permit, a Permittee, who as an applicant who failed to include all relevant facts, or who submitted incorrect information in an application, shall, upon becoming award of such failure or incorrect submittal, promptly submit a supplement to the application, correcting such failure or incorrect submittal. In addition, Permittee shall furnish to the District

within thirty days any information that the Control Officer may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit and/or the Code.

D. Right to Enter

***[Mandated by 40 CFR §70.6(c)(2)]*** (Code § 3-1-132)

Authorized representatives of the District shall, upon presentation of proper credentials, be allowed:

1. to enter upon the premises where the source is located or in which any records are required to be kept under the terms and conditions of this permit;
2. to inspect any equipment, operation, or method required in this permit; and
3. to sample emissions from the source.

E. Transfer of Ownership

***[Mandated by 40 CFR §70.7(d)(4)]***

This permit may be transferred from one person to another by notifying the District at least 30 days in advance of the transfer. The notice shall contain all the information and items required by Code § 3-1-090. The transfer may take place if not denied by the District within 10 days of the receipt of the transfer notification.

F. Posting of Permit

(Code §3-1-100)

Permittee shall firmly affix the permit, an approved facsimile of the permit, or other approved identification bearing the permit number, upon such building, structure, facility or installation for which the permit was issued. In the event that such building, structure, facility or installation is so constructed or operated that the permit cannot be so placed, the permit shall be mounted so as to be clearly visible in an accessible place within a reasonable distance of the equipment or maintained readily available at all times on the operating premises.

G. Permit Revocation for Cause

***[Mandated by 40 CFR §70.6(a)(6)(iii)]*** (Code §3-1-140)

The Director of the District ("Director") may issue a notice of intent to revoke this permit for cause pursuant to Code §3-1-140, which cause shall include occurrence of any of the following:

1. The Director has reasonable cause to believe that the permit was obtained by fraud or material misrepresentation;
2. Permittee failed to disclose a material fact required by the permit application form or a regulation applicable to the permit;
3. The terms and conditions of the permit have been or are being violated.

H. Certification of Truth, Accuracy, and Completeness

***[Mandated by 40 CFR §§70.5(a)(2), 70.6(a)(3)(iii)(B)] [Federally enforceable - Code §§3-1-083.A.5, 3-1-175 (as amended 10/12/95) approved as SIP Elements at 61 FR 15717 (4/9/96)]***

Any application form, report, or compliance certification submitted pursuant to the Code shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under Chapter 3 of the Code shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

I. Renewal of Permit

***[Mandated by 40 CFR §§70.5(a)(1)(iii), 70.7(c)]***

Expiration of this permit will terminate the facility's right to operate unless either a timely application for renewal has been submitted in accordance with §§3-1-050, 3-1-055 and 3-1-060, or a substitute application for a general permit under §3-5-490. For Class I permit renewals, a timely application is one that is submitted at least 6 months, but not greater than 18 months prior to the date of the permit expiration. For Class II or Class III permit renewals, a timely application is one that is submitted at least 3 months, but not greater than 12 months prior to the date of permit expiration.

J. Severability  
***[Mandated by 40 CFR §70.6(a)(5)]***

Pursuant to Code § 3-1-081.A.7., the provisions of this permit are severable, and if any provision of this permit is held invalid the remainder of this permit shall not be affected thereby.

K. Permit Shield  
***[Mandated by 40 CFR §70.6(f)]*** (Code § 3-1-102.)

Subject to the following schedule of exclusions, compliance with the terms of this permit shall be deemed compliance with any applicable requirement identified in this permit. The permit-shield exclusions include:

1. PGCAQCD Rule §7-3-1.3 OPEN BURNING;
2. PGCAQCD Rule §7-3-4.1 INDUSTRIAL - CARBON MONOXIDE EMISSIONS.
3. Items listed in Section 10 of this permit as not being federally enforceable.

L. Permit Revisions  
***[Mandated by 40 CFR §70.7(d), 70.7(e)]*** (Code Chapter 3, Article 2)

1. This permit may be revised, reopened, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit revision, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.
2. The permittee shall furnish to the Control Officer, within a reasonable time, any information that the Control officer may request in writing to determine whether cause exists for revising, revoking and reissuing, or terminating the permit or to determine compliance with the permit.
3. Permit amendments, permit revisions, and changes made without a permit revision shall conform to the requirements in Article 2, Chapter 3, of the Code.
4. Revision to Obtain Authority to Reconstruct ***[Federally enforceable - 40 CFR 63.42(c)]***  
Code §3-1-040.D.

Prior to commencing a reconstruction, as defined below, Permittee shall apply for and obtain a revision to this permit, which revised permit shall include a final and effective case-by-case determination pursuant to the provisions of 40 CFR 63.43 such that the emissions from the reconstructed facility will be controlled to a level no less stringent than the maximum achievable control technology emission limitation for new sources.

For purposes of this subsection, "reconstruction" is defined as the replacement of components at an existing process or production unit that in and of itself emits or has that potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAP, whenever:

- a. The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and
- b. It is technically and economically feasible for the reconstructed major source to meet the applicable maximum achievable control technology emission limitation for new sources established under 40 CFR Part 63, Subpart B.

M. Permit Re-opening  
*[Mandated by 40 CFR §§70.6(a)(6)(iii), 70.7(g), 70.7(g)]* (Code §3-1-087.)

- 1. This permit shall be reopened if:
  - a. Additional applicable requirements under the Clean Air Act (1990) become applicable to this source, and on that date, this permit has a remaining term of three or more years. Provided, that no such reopening under this subparagraph is required if the effective date of the newly applicable requirement is later than the date on which this permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to Code §3-1-089.C.
  - b. The Control Officer determines that it contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of it;
  - c. The Control Officer determines that it needs to be revised or revoked to assure compliance with the applicable requirements; or
  - d. The EPA Administrator finds that cause exists to terminate, modify, or revoke and reissue this permit.
- 2. If this permit must be reopened or revised, the District will notify the permittee in accord with Code §3-1-087.A.3.

N. Record Retention  
*[Mandated by 40 CFR §70.6(a)(3)(ii)(B)]* (Code §3-1-083.A.2.b)

Permittee shall retain for a period of five (5) years all documents required under this permit, including reports, monitoring data, support information, calibration and maintenance records, and all original recordings or physical records of required continuous monitoring instrumentation.

O. Scope of License Conferred  
*[Mandated by 40 CFR §70.6(a)(6)(iv)]* (Code §3-1-081.)

This permit does not convey any property rights of any sort, or any exclusive privilege.

P. Excess Emission Reports; Emergency Provision  
*[Mandated by 40 CFR §70.6(g)]* (Code §3-1-081.E, Code §8-1-030)

- 1. To the extent Permittee may wish to offer a showing in mitigation of any potential penalty, underlying upset events resulting in excess emissions shall reported as follows:
  - a. The permittee shall report to the Control Officer any emissions in excess of the limits established by this permit. Such report shall be in two parts:
    - i. Notifications by telephone or facsimile within 24 hours or the next business day, whichever is later, of the time when the owner or

- operator first learned of the occurrence of excess emissions, including all available information required under subparagraph b. below.
- ii. Detailed written notification within 3 working days of the initial occurrence containing the information required under subparagraph b. below.
- b. The excess emissions report shall contain the following information:
- i. The identity of each stack or other emission point where the excess emissions occurred.
  - ii. The magnitude of the excess emissions expressed in the units of the applicable limitation.
  - iii. The time and duration or expected duration of the excess emissions.
  - iv. The identity of the equipment from which the excess emissions occurred.
  - v. The nature and cause of such emissions.
  - vi. If the excess emissions were the result of a malfunction, steps taken to remedy the malfunction and the steps taken or planned to prevent the recurrence of such malfunctions.
  - vii. The steps that were or are being taken to limit the excess emissions. To the extent this permit defines procedures governing operations during periods of start-up or malfunction, the report shall contain a list of steps taken to comply with this permit.
  - viii. To the extent excess emissions are continuous or recurring, the initial notification shall include an estimate of the time the excess emissions will continue. Continued excess emissions beyond the estimated date will require an additional notification.
2. An "emergency" means any situation arising from sudden and reasonably unforeseeable events beyond the control of the source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes the source to exceed a technology-based emission limitation under the permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.
  3. An emergency constitutes an affirmative defense to an action brought for noncompliance with such technology-based emission limitations if the conditions of the following subparagraph are met.
  4. The affirmative defense of emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:
    - a. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

- b. The permitted facility was at the time being properly operated;
- c. During the period of emergency the permittee took all reasonable steps to minimize levels of emissions that exceeded the emissions standards or other requirements in the permit; and
- d. The permittee submitted notice of the emergency to the Control Officer by certified mail or hand delivery within 2 working days of the time when emissions limitations were exceeded due to emergency. The notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective action taken.

#### 10. Additional provisions applicable to Title V Sources

- A. Enforcement by the Administrator and Citizens  
*[Mandated by 40 CFR §70.6(b)]*

All terms and conditions in this permit not excluded in Section 10.B. are enforceable by the Administrator and citizens under the Clean Air Act.

- B. Federal Enforceability Exclusions  
*[Mandated by 40 CFR §70.6(b)(2)]*

Terms and conditions listed in Sections 5.D.2, 5.F.2., and 9.F are not federally enforceable.

#### 11. Equipment

*[Mandated by 40 CFR §70.5(c)(3)(ii)]* (Code §3-1-050.B)

Equipment for which emissions are allowed by this permit are as follows:

Emission Unit	Manufacturer	Model	Serial #	Date	Quantity	Capacity
Gas Turbines CTG01-CTG02	Siemens/Westinghouse	501FA	37A8074-1 37A8078-1	2000	2	2,029 mm btu/hr. each <sup>8</sup>
Duct Burners	Coen	N/A	N/A	2000	2	456 mm btu/hr. each
Gas Turbines (Simple Cycle) SCCT4-SCCT5	GE	LM6000PC			2	435.3 mm btu/hr each
Cooling Tower	Psychometric Systems	N/A	N/A	2000	1	138,000 gpm
Diesel Fire Pump	ACS Pumping	N/A	46006400	2000	1	263 HP
Propane Emergency Generator	Olympian	G60LG	N/A	2015	1	0.93 mm btu/hr.

#### 12. Insignificant Activities

*[Mandated by 40 CFR §70.5(c)]* (Code §3-1-050.E)

Unit	Manufacturer	Model	Serial #	Date	Quantity	Capacity
Diesel Tank	ACS Pumping	N/A	N/A	2000	1	300 gal.

<sup>8</sup> The maximum capacity of the turbines is 1,932 MMBtu/hr prior to the completion of the Combustion Turbine Upgrade Project.

Used Oil Tank	N/A	N/A	N/A	2000	1	300 gal.
Soda Ash Silo with Fabric Filter	Stanco	N/A	I-26589	2000	1	1,800 ft <sup>3</sup>
Lime Silo with Fabric Filter	Stanco	N/A	I-26590	2000	1	2,500 ft <sup>3</sup>
Miscellaneous portable generators, steam cleaners, welders	N/A	N/A	N/A	N/A	N/A	<325 HP and operate < 72 hours annually
Miscellaneous chemical and petroleum storage tanks	N/A	N/A	N/A	N/A	N/A	<250 gal
Laboratory Equipment	N/A	N/A	N/A	N/A	N/A	N/A
Hand held equipment	N/A	N/A	N/A	N/A	N/A	N/A
Abrasive Blasting	N/A	N/A	N/A	N/A	N/A	N/A
Part Washers	N/A	N/A	N/A	N/A	N/A	N/A

Appendix A

Semi-annual Report

**Permit V20678.R02**

**Abstract**

This constitutes a semiannual report of all required monitoring, documenting emissions during the subject reporting period.

**Reporting Period** - January-June \_\_\_ Or July-December \_\_\_ Year \_\_\_\_\_

**Facility** - Salt River Project Agricultural Improvement and Power District  
Desert Basin Generating Station  
1872 North Burriss Road, Casa Grande, AZ

**Parametric Emissions Report**

Natural gas burned during reporting period..... \_\_\_\_\_ therms

**Performance Testing**

Were the initial performance tests performed as required under Sections §§6.A, 6.B, and 6.C of this permit?  
YES \_\_\_ NO \_\_\_

If yes, please list the dates of the most recent performance tests \_\_\_\_\_

**Operations Report**

Total net electrical output generated during reporting period..... \_\_\_\_\_ megawatt-hours

Average water flow in cooling tower ..... \_\_\_\_\_ gallons/minute

**CTG/HRS Unit #1**

Normal Run Time for CTG/HRS with Duct Burners OFF ..... \_\_\_\_\_ hours

Normal Run Time for CTG/HRS with Duct Burners ON ..... \_\_\_\_\_ hours

Start-up cycles ..... \_\_\_\_\_ each

Shut-down cycles ..... \_\_\_\_\_ each

**CTG/HRS Unit #2**

Normal Run Time for CTG/HRS with Duct Burners OFF ..... \_\_\_\_\_ hours

Normal Run Time for CTG/HRS with Duct Burners ON ..... \_\_\_\_\_ hours

Start-up cycles ..... \_\_\_\_\_ each

Shut-down cycles ..... \_\_\_\_\_ each

**SCCT4**

Normal Run Time ..... \_\_\_\_\_ hours

Start-up cycles ..... \_\_\_\_\_ each

Shut-down cycles..... \_\_\_\_\_ each

**SCCT5**

Normal Run Time ..... \_\_\_\_\_ hours

Start-up cycles ..... \_\_\_\_\_ each

Shut-down cycles..... \_\_\_\_\_ each



If required, describe and explain any monitoring activity or recordkeeping that occurred with respect to the Asbestos NESHAP or Stratospheric Ozone requirements respectively defined in §§5.J.1 and 5.J.2 of the permit during the reporting period. Is such a supplemental disclosure attached? ..... YES / NO

On a separate sheet, describe and explain any previously un-reported deviations from the terms of this permit. Is such a supplemental disclosure attached?..... YES / NO

Was daily verification of compliance with the CO cap conducted in accord with §5.D. 1.b? ..... YES / NO

Have the monthly hours-of-operation retabulations been performed pursuant to §6.G.3.d?..... YES / NO

Was fuel sulfur testing/monitoring conducted in accordance with 6.G.6? ..... YES / NO

Have repair logs been maintained pursuant to §6.G.8.? ..... YES / NO

**Emissions Report**

Emissions of nitrogen oxides..... \_\_\_\_\_ tons

Emissions of carbon monoxide..... \_\_\_\_\_ tons

Emissions of particulate matter (PM10)..... \_\_\_\_\_ tons

Emissions of volatile organic compounds ..... \_\_\_\_\_ tons

Emissions of sulfur dioxide ..... \_\_\_\_\_ tons

Were record of cumulative actual NOX, CO, VOC, and PM10 emissions generated as required in Sections §6.G.1.c, 6.G.2.b, 6.G.4.c, and 6.G.5.e respectively?..... YES / NO

**Engines Report**

Total operational hours of the diesel fueled 263 HP fire pump - \_\_\_\_\_ hours

Total operational hours of the 96 HP propane fueled emergency generator - \_\_\_\_\_ hours

Was the required maintenance performed on the diesel fire pump pursuant to §5.M?.....YES / NO

Were records of the non-emergency and emergency hours of operation of the diesel-driven fire pump and propane driven generator maintained pursuant to §6.L.?.....YES / NO

**Certification by Responsible Official**

I certify that, based on information and belief formed after reasonable inquiry, that the statements and information in this report are true, accurate and complete.

Signed \_\_\_\_\_

Printed Name \_\_\_\_\_

Title \_\_\_\_\_

Contact Phone Number \_\_\_\_\_

Date\_\_\_\_\_

**Email to:** compliancereports@pinal.gov, or

**Mail to:** Pinal County Air Quality Control District  
P.O. Box 987  
Florence, AZ 85132