

ARIZONA PUBLIC SERVICE- RED ROCK

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1. Introduction

This permit renewal constitutes both a "Title V" permit issued pursuant to Clean Air Act ("CAA") §165 and implementing EPA regulations and local rules, and a "minor NSR" permit issued pursuant to CAA §110 and implementing EPA regulations and local rules.

This facility is required to have a permit under Title IV of the CAA, commonly known as the Acid Rain program. The Acid Rain permit is incorporated as an element of this permit.

The permit pertains to an existing electrical power plant, operated by Arizona Public Service Company, an Arizona corporation. The facility, commonly known as Saguaro Power Plant, is located at 25044 E. Camino Adelante in Sections 14 & 15, Township 10S, Range 10E, Pinal County, Arizona upon a parcel also identified by Pinal County Assessor's Parcel #s 410-08-800, 410-08-002 & 410-08-003. The source is situated in an area classified as "attainment" for all pollutants.

The source consists of 5 electrical generating units, including 4 "grandfathered" generating units: 2 steam-electric units (Unit 1 & 2) nominally rated at 115 megawatt ("mW") and 105 mW, and two 55 mW Westinghouse W-501AA simple cycle gas turbine generators (CT1 & CT2). The steam-driven generators constitute the preferred steady-state producers, while the 55 mW gas turbine generators provide quick-start capacity. Those "grandfathered" generating units were installed between 1953 and 1973. As such, while those units fall subject to "existing source" performance standards, they antedates all applicable "new source" performance standards. Each steam unit includes a boiler, steam turbine-generator, and associated equipment. Two cooling towers are used to supply cooled circulating water to the unit condensers. The permit currently allows the installation and operation of fogging systems on CT1 and CT2 but APS has not done so to date.

~~Permit revision A20501.R02 authorized the installation of~~ The 5th unit is CT3, a GE 7EA simple cycle combustion turbine rated at 80 mW. ~~The revision allowed the installation of five TM2500 turbine units which were to be replaced by CT3. The permit required that the TM2500 units be physically removed from the site before the Frame 7EA turbine unit began operation for any purpose.~~

For purposes of complying with the Acid Rain program, both existing steam units must be equipped with continuous emission monitors ("CEMs") for NO_x; and the Frame 7EA turbine must be equipped with CEMs for NO_x.

For purposes of demonstrating continuous "synthetic minor" status, the permit requires that the Frame 7EA auxiliary turbine be equipped with continuous emission monitors ("CEMs") for both NO_x and CO. NO_x will be monitored in accord with the EPA's Acid Rain requirements, and the permittee will be required to implement a CO CEMs system in accord with established NSPS standards. Since emissions will be directly monitored on the 7EA unit, the caps on NO_x and CO emissions are both set at 97.5% of provided that if subsequent testing shows that the NO_x and CO CEM's for the Frame 7EA unit cannot maintain the requisite precision, the "allowable" percentage will drop accordingly.

A complete list of equipment from which emissions are allowed by this permit is given in the next to last section of this permit.

All of the power generating units may use pipeline quality natural gas as the primary fuel. Natural gas is delivered to the site by pipeline from El Paso Natural Gas Company. The Westinghouse W-501AA turbine generators may combust diesel oil, which is stored on site as a secondary fuel for the combustion turbines. Diesel fuel is delivered by railroad tank cars or by truck. The steam generating units may also combust residual oil or "bunker oil" as a secondary fuel. Delivery of residual fuel oil is by railroad tank cars. For units allowed to burn secondary fuels, there are no limitations on the extent of use of such secondary fuels.

The Saguaro Power Plant is one of six gas-oil plants within the Arizona Public Service system. The plant is designed to provide electrical generation on an as-needed basis, depending upon the load demand and system needs. If fuel oil operation is required, the units are started on gas and then transferred over to oil.

Notwithstanding the historical operating patterns, this permit implicitly acknowledges the "grandfathered" character of the non-auxiliary units discussed above, and the permit allows for unlimited operation of the "grandfathered" units, on either primary or secondary fuel.

Given the lack of permit-imposed constraints, the source constitutes a "major source" for NO_x within the meaning of CAA §302(j), which does trigger a requirement for an operating permit under CAA §501 *et seq.*

The source also constitutes a "major emitting source" for NO_x within the meaning of 40 CFR §51.166, but since those emission units have not been modified or reconstructed, and the auxiliary generators fall subject to "synthetic minor" limitations, the facility still enjoys "grandfathered" status with regard to the PSD permitting program.

Permitting History [MOVED TO TSD]

- ~~Permit revision A20501.R02, issued on 4/6/01, authorized the installation of CT3, a GE 7EA simple cycle combustion turbine rated at 80 mW. The revision allowed the installation of five TM2500 turbine units which were to be replaced by CT3.~~
- ~~The Title V Permit "V20601.000" was issued on 10/4/01.~~
- ~~Revision "V20601.R01", issued 1/22/2002, corrected an error in the original permit by increasing the allowable percentage of sulfur in the fuel for the steam generators from 0.8 to 0.9 percent.~~
- ~~Revision "V20601.R02" changed the basis for emissions averaging to assess compliance with the 7EA turbine emission caps from daily to monthly. In addition, requirements relating to photochemical reactive solvents are being removed. This requirements were deleted from SIP at 66 FR 49293 on 9/27/2001.~~
- ~~Renewal/Modification "V20627.000": Several changes have been made to the permit during this renewal which incorporates a modification:~~
 - ~~• Administrative Changes: The list of Federally Enforceable Applicable Requirements has been updated to the most current one, and the requirements applying to the TM2500 turbine units have been removed from the permit, since these units were only temporarily on site and have been replaced by CT3.~~
 - ~~• Inlet Misting Systems: This renewal authorizes the installation and operation of an inlet fogging with overspray systems on the (2) Westinghouse W-501AA simple cycle turbines (CT1 and CT2). This system will cool the compressed air that is used in the combustion process, possibly resulting in a reduction of the NO_x emission concentration and an increase in power output. To avoid triggering the NSPS requirements for these 2 combustion turbines, the permit limits the use of the fogging systems to no more than 400 hours total between the two combustion turbines, and only during natural gas combustion. The permit also requires that the fogging systems automatically shut off once the load drops below 50%, since CO emissions could increase at lower loads.~~

2. Listing of Federally Enforceable Applicable Requirements [Mandated by 40 CFR §70.5(c)(4)] (Code §§3-1-060.B.2.d, 3-1-081.A.2, 3-1-081.A.8.a)

- A. Those specific provisions of the Pinal-Gila Counties Air Quality Control District ("PGAQCD") 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~~53034 (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
7-3-1.3	Emission Standards - Particulates - Open Burning
7-3-1.7.A	Particulate Emissions - Fuel Burning Equipment
7-3-1.7.B	Particulate Emissions - Fuel Burning Equipment
7-3-1.7.C	Particulate Emissions - Fuel Burning Equipment
7-3-1.7.D	Particulate Emissions - Fuel Burning Equipment
7-3-1.7.E	Particulate Emissions - Fuel Burning Equipment
7-3-2.2	SO ₂ Emissions - Fuel Burning Installations
7-3-4.1	CO Emissions - Industrial

- B. Those specific provisions of the Pinal-Gila Counties Air Quality Control District 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~~ 15581 (4/12/82), specifically, the following rules:

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

- C. The New Source Performance Standard General Provisions, 40 CFR Part 60, Subpart A [40 CFR §§60.1 - 60.19 (1998)]; NSPS Standards of Performance for Stationary Gas Turbines, 40 CFR Part 60, Subpart GG [40 CFR §60.330 *et seq.* (7/1/00)].
- D. The Acid Rain Program, 40 CFR Part 72 (1998) and related regulations, Sulfur Dioxide Allowance System, 40 CFR Part 73 (1998) and Continuous Emission Monitoring, 40 CFR Part 75 (1998).
- E. 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.
- F. CAA §112(r) (11/15/90); 40 CFR Part 68 (1998); Chemical Accident Prevention Provisions.
- G. National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subpart YYYY, Stationary Combustion Turbines [40 CFR §63.6080 - 6175].
- H. Asbestos NESHAP Compliance [40 CFR Part 61 §§145, 148, 150. Subpart M]
- I. National Emissions Standards for Hazardous Air Pollutants, 40 CFR Part 63, Subpart ZZZZ, Internal Combustion Engines[40 CFR §63.6080 - 6175].
- J. Those specific provisions of the PCAQCD Regulations, as last amended by the Pinal County Board of Supervisors on April 27, 2004, and approved by the Administrator as elements of the Arizona SIP at 75 FR 17307 (4/6/10), specifically, the following rule:

§4-2-040 Standards (Fugitive Dust Reasonable Precautions)

3. Compliance Certification

- A. Compliance Plan [*Mandated by 40 CFR §70.5(c)(8)*] (Code §§3-1-081.C, 3-1-083.A.7)
 Insofar as the Permittee is has certified that it is currently in compliance, the compliance plan consists of continued adherence to the requirements of this permit.
- B. Compliance Schedule [*Mandated by 40 CFR §§ 70.5(c)(8), 70.6(c)(3)*] (Code §§3-1-060.B.1, 3-1-083.A.7.c)
 Insofar as the Permittee is currently in compliance, no compliance schedule to attain compliance is required.

4. Authority to Construct

- A. Equipment Authorized - Grandfathered Equipment
 The following equipment constitute “grandfathered” units that antedate both the “major” and “minor” new source review programs: Steam Unit #1, Steam Unit #2, Combustion Turbine 1 (CT1), Combustion Turbine 2 (CT2), (3) heated oil tanks and (2) #2 diesel tanks. Accordingly, this permit does not need to define or otherwise identify the "authority to construct" for those elements of the facility.
- B. Equipment Authorized Under Authority to Construct Provided by Prior Permit Transactions (Code §3-1-081)¹
 - 1. This permit acknowledges that authority to construct auxiliary turbine generators, consisting of five (5) General Electric TM2500 turbine generator units, was provided under permit

¹The 5 GE TM2500 were replaced by the GE 7EA turbine (CT3) and are no longer on site. This permit renewal deletes all applicable requirements concerning the removed units, since the permit already contains specific applicable requirements for CT3.

revision A20501.R02 issued on April 6, 2001. The subsequent provisions of this permit include the relevant NSR and operating limitations of that Revision A20501.R02 as continuing applicable requirements.

2. Permit A20501.R02 authorizes installation of one (1) General Electric 7EA combustion turbine, with that installation authority subject to the corresponding installation and operating limitations set forth below in this permit.
- C. Equipment Authorized Under Authority to Construct Provided by This Permit (Code §3-1-081)
- This permit authorizes the installation of inlet fogging systems for units CT1 and CT2. Each fogging system shall be equipped with a system that continuously records, or allows accurate determination of the inlet fogging systems running times.
- D. Operational Limitation - CT1 and CT2 inlet fogging systems [*Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)*] (Code §3-1-081.A)
- a. Permittee shall not operate the inlet fogging systems of units CT1 and CT2 more than 400 hours per calendar year total.
 - b. Units CT1 and CT2 shall be equipped with a system to continuously record, or allow accurate determination of the inlet fogging systems running times.
 - c. The inlet fogging systems shall only operate during natural gas combustion in the affected emission unit. For this purpose, CT1 and CT2 shall be equipped with an interlock system that will prevent the use of the inlet fogging systems during oil combustion.
 - d. To avoid an increase of CO emissions, the inlet fogging systems shall automatically shut off when the combustion turbine load drops below 50%.
- E. Emission Cap - Frame 7EA Combustion Turbine
- Emissions from the Frame 7EA combustion turbine generator shall not exceed the following NO_x and CO caps:
1. NO_x Cap [*Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)*] (Code §3-1-081.A)
The NO_x cap shall be 39 tpy.
 2. CO Cap [*Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)*] (Code §3-1-081.A)
The CO cap shall initially be set at 97.5 tpy, but may be adjusted downward to reflect the lowest of the allowable emission rates defined below:
 - a. Provided accuracy testing under 40 CFR Part 60, Appendix F shows that the CO CEMs maintain no more than 2.5% error, the allowable rolling 12-month average of CO emissions that includes the date of the accuracy test shall not exceed 97.5 tpy.
 - b. If accuracy testing under 40 CFR Part 60 shows that the CO CEMs maintain a maximum 5% error, the allowable rolling 12-month average of CO emissions that includes the date of that RATA test shall not exceed 95 tpy;
 - c. If accuracy testing under 40 CFR Part 60 shows that the CO CEMs exceeds 5% error, the allowable rolling 12-month average of CO emissions that includes the date of that RATA test shall not exceed 90 tpy.
 3. Averaging period [*Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)*] (Code §3-1-081.A)

Compliance with all caps for the 7EA unit shall be assessed on the basis of an annual average, rolled monthly, on a calendar-month basis.

F. Other Frame 7EA Cap-Related Installation and Operating Limitations

1. Control Requirement [*Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)*] (Code §3-1-081.A)

- a. The Frame 7EA combustion turbine shall be equipped with dry low-NO_x combustors, and may be equipped with an inlet fogging system configured to enhance power generation and increase power generation efficiency.
- b. The Frame 7EA combustion turbine shall be equipped with a system to continuously record, or allow accurate determination of the mass quantity of natural gas burned, the inlet temperature, the electrical power produced. Each of those parameters shall be recorded whenever the affected unit is operating.

2. Allowable fuels [*Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)*] (Code §3-1-081.A)

The turbine units shall be operated only on pipeline-quality natural gas.

3. Acid Rain Requirements

Permittee shall comply with applicable SO₂, NO_x and CO₂ monitoring requirements under 40 CFR §75, implementing the Acid Rain provisions of the Clean Air Act.

4. Monitoring requirement - Demonstrating Emission Cap Compliance

a. NO_x

For purposes of demonstrating compliance with the cap limitation under this permit, as well as complying with the requirements of 40 CFR Part 75, Permittee shall install a continuous monitoring system, for measuring:

- i. nitrogen oxides emissions from the Frame 7EA combustion turbine;
- ii. either the oxygen or carbon dioxide content of flue gas from the turbine, with the measurement taken where the NO_x emissions are monitored.

~~Monitoring equipment required under this permit subsection shall be installed in accord with the requirements of 40 CFR Part 75, including at a minimum the requirements of 40 CFR §§75.10, 75.11 and 75.12. Monitoring equipment under this permit subsection shall be installed, operated, and quality assured in accordance with the requirements of 40 CFR Part 75.~~

b. CO

For purposes of demonstrating compliance with the cap limitation under this permit, Permittee shall install a continuous CO monitoring system, for measuring carbon monoxide emissions to the atmosphere. ~~Permittee shall use the quality assurance provisions of 40 CFR Part 75 for the CO monitoring systems with the exception that a quarterly Cylinder Gas Audit (CGA) in accordance with 40 CFR Part 60 shall be conducted every calendar quarter regardless of the instrument span. A CGA will not be required on quarters in which a RATA is performed or where there are no run hours on the unit. The plan shall generally conform to the requirements of 40 CFR Part 60, Appendix B, Performance Specification 4, and 40 CFR §§60.1230, including initial and annual evaluations conforming to the requirements of 40 CFR §§60.1240, 60.1250, 60.1260, 60.1265 and 60.1275, provided that monitored values shall be corrected to 15% O₂.~~ Accuracy testing for the CO CEMs shall be conducted on the same cycle as required for the RATA testing of the NO_x CEMs.

c. Data Acquisition System Installation

Permittee shall install a data acquisition system ("DAS"), configured to record data from the CEMs required under this permit subsection, and further configured to calculate emission rates of all CEMs-affected pollutants.

d. CEMs and DAS Installation Timing

CEMs and DAS required under this permit subsection shall be installed within 90 days after commencement of commercial operation, meaning the first generation of electricity for sale, including the sale of test generation.

e. Fuel monitoring

Prior to initial startup of the 7EA unit, Permittee shall install a system for monitoring and logging fuel consumption.

5. Emission Limitations [Mandated by 40 CFR §70.6(a)(1)] (Code §3-1-081.A.2)

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

1. General Limitation [*Code § 3-1-081.A.2. (as amended 10/12/95) approved as a SIP Element at 61 FR 15717 (4/9/96)*]

Permittee is authorized to discharge or cause to discharge into the atmosphere those emissions of air contaminants as set forth below. Unless exempted under Code §3-1-040.C., or authorized by a separate permit, by this permit or by a revision or operational change allowed 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.

2. Insignificant Activities (*Code §§1-3-140.74a, 3-1-040.B.2.a.i, 3-1-050*)

Apart from the authority of this permit, Permittee is authorized to discharge or cause to discharge into the atmosphere emissions from insignificant activities, as defined in Code §1-3-140.74a. Appendix B of this permit includes a non-limiting schedule of specific activities that the District concurs qualify for "insignificant" status.

C. Emission Limits

1. Stationary Rotating Machinery Emission Limitation Standard for Particulate Matter - Combustion Turbines [*PGAQCD Reg. 7-3-1.7 (amended 6/16/80) approved as a SIP Element at 47 FR 15579 (4/12/82)*] (Code §5-23-1010)

The maximum allowable emissions shall be determined by the following equation:

$$E = 1.02Q^{0.769}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour and
 Q = the total heat input of all operating fuel-burning units of stationary rotating machinery on the premises in million Btu/hr.

2. Emission Limitation Standard for Sulfur Dioxide - Steam Power Generators [*PGAQCD Reg. 7-3-2.2 (3/31/75), approved by the Administrator as an element of the Arizona SIP at 43*]

FR 50531 (11/15/78)]

a. Emission Limitation

Permittee shall burn fuel in steam generating machinery which limits the emission of sulfur dioxide to 1.0 pound per million Btu heat input, based upon a two-hour average.

b. Sampling Requirement

As a necessarily implied element of the preceding limitation, and as an alternative to installing a real-time monitoring system, Permittee shall quantify the sulfur content of secondary fuel purchases for the steam generators, shall arithmetically calculate the resulting average sulfur content of the fuel inventory on hand, and after each such fuel purchase shall record in a log the resulting average sulfur content expressed as a function of the higher heating value of the fuel.

3. Stationary Rotating Machinery Emission Limitation Standard for Sulfur Dioxide - Combustion Turbines (Code §5-23-1010)

a. Emission Limitation

Permittee shall not burn fuel in any stationary rotating machinery which will allow the emission of sulfur dioxide to exceed 1.0 pound per million Btu heat input.

b. Sampling Requirement

As a necessarily implied element of the preceding limitation, and as an alternative to installing a real-time monitoring system, Permittee shall quantify the sulfur content of secondary fuel purchases for the combustion turbines, shall arithmetically calculate the resulting average sulfur content of the fuel inventory on hand, and after each such fuel purchase shall record in a log the resulting average sulfur content expressed as a function of the higher heating value of the fuel.

4. Limitation Standard on Emissions of Oxides of Nitrogen - All Generating Units *[PGAQCD Reg. 7-2-1.6 (3/31/75), approved by the Administrator as an element of the Arizona SIP at 43 FR 50531 (11/15/78)]*

This limitation-disclaimer applies to emissions from the steam generating units and the turbine generating units.

Provided the steam generating and turbine units are properly maintained and operated, the permitting authority finds that even under worst-case conditions, the maximum combined potential to emit will not cause an ambient concentration of oxides of nitrogen outside of the boundaries of the facility that exceeds the applicable air quality standard of an annual average of 100 micrograms per cubic meter. Accordingly, no additional operating limits apply with respect to emissions of oxides of nitrogen.

5. NSPS Limitation Standard on Emissions of Nitrogen Oxides from the 7EA combustion turbine *[40 CFR 60.332(a)]* (6-1-030)

No gases shall be discharged to the atmosphere from the combustion turbine which contain nitrogen oxides in excess of:

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

Where:

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

Y = manufacturer's rated heat rate at manufacturer's rated load.

F = NOx emission allowance for fuel-bound nitrogen [defined in 40 CFR 60.332(a)(3)]

6. **NSPS Limitation Standard on Emissions of Sulfur Dioxide from the 7EA combustion turbine [40 CFR 60.333(a)]**
 - a. No gases shall be discharged to the atmosphere from the combustion turbine which contain sulfur dioxide in excess of 0.015 percent by volume at 15 percent oxygen and on a dry basis.
 - b. No fuel shall be burned in the combustion turbine which contains sulfur in excess of 0.8 percent by weight.

7. **NESHAP Limitations on Emergency Compression Ignition Engines <500 hp constructed before June 12, 2006 and located at major sources of HAP[40 CFR §§63.6595, 63.6602, 63.6605]**

Permittee shall comply with the following emissions limitations (from Table 2c of 40 CFR Part 63, Subpart ZZZZ) no later than May 3, 2013:

Except during periods of startup, Permittee shall:

- a. Change oil and filter every 500 hours of operation and annually, whichever comes first;
- b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first;
- c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

D. Fuel Use Limitations - All Generating Units

1. Primary Fuel

Permittee is allowed to burn pipeline quality natural gas as the primary fuel in any of the generating units, including the W501-AA combustion turbines and the steam generating units.

2. Secondary Fuels (§§5-23-1020.B, 5-24-1030.A.2)

Where this permit does not otherwise limit fuel use, Permittee may burn secondary fuels that a specific unit is designed and built to combust. Specifically, the W-501AA combustion turbines may combust #2 oil meeting the specifications of ASTM D396, and the steam generating units may combust oil as heavy as #6 oil, meeting the specifications of ASTM D975. The sulfur content of any secondary fuel used in the combustion turbines shall be less than 0.8 percent sulfur by weight and any secondary fuel used in the steam generators shall be less than 0.9 percent sulfur by weight.

3. Other Fuels (Code §§3-1-081.G, 5-23-1010.F)

Permittee shall not use used oil, used oil fuel, hazardous waste, and hazardous waste fuel (as defined in federal, state, or county codes and rules) in the steam generating units or the combustion turbines without first obtaining a separate permit or an appropriate permit revision.

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

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

1. Vacuum collection system.
2. Confined blasting.
3. Wet abrasive blasting.
4. Hydroblasting.
5. Non-dusting abrasive system such as copper reverb slag. Prior to using such a system, the Permittee shall demonstrate that the opacity will be maintained below 40 percent.

F. Opacity Limits - Plant Wide

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.

2. Locally Enforceable Limitation (Code §2-8-300)

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.

G. Mass Emissions Limitations - All Generating Equipment

1. SIP Limitation #1 *[PGCAQCD 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, 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 (§§5-21-930, 5-23-1010)

For equipment with a heat input capacity of 4,200 million Btu per hour or less, 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.

H. Control of Fugitive Dust - Plant Wide *[PGAQCD Reg. 7-3-1.2 (3/31/75) approved as a SIP element at 43 FR 50531 (11/15/78)]*

1. Permittee shall not cause, suffer, allow or permit a building or its appurtenances or open area to be used, constructed, repaired, altered or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Dust and other types of particulates shall be kept to a minimum by such measures as wetting down, covering, landscaping, paving, treating or by other reasonable means.
2. Permittee shall not cause, suffer, allow or permit the repair, construction or reconstruction of a roadway or alley without taking reasonable precautions to prevent particulate matter from becoming airborne dust and other particulates shall be kept to a minimum by employing temporary paving, dust palliatives, wetting down, detouring or by other reasonable means. Earth or other material shall be removed from paved streets onto which earth or other material has been transported by trucking or earth moving equipment, erosion by water or by other means.

- I. Reasonable Precautions (§4-2-040) [*Currently federally enforceable pursuant to PCAQCD Reg. 4-2-040 (4/27/04) approved as a SIP element at 75 FR 17307*]
1. 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 dirt to be deposited, without taking reasonable precautions to effectively prevent fugitive dust from becoming airborne.
 2. 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.
 3. 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.
 4. 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.
 5. 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.
 6. 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.
 7. Permittee shall not cause, suffer, allow or permit the use, repair, construction or reconstruction of any road or alley without taking every reasonable precaution to effectively prevent fugitive dust from becoming airborne.
- J. General Maintenance Obligation - Plant Wide (Code §§3-1-081.E., 8-1-030.A.3)
- 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 equipment in a manner consistent with good air pollution control practice for minimizing emissions.
- K. Additional Applicable Limitations - Plant Wide
1. Asbestos NESHAP Compliance [*40 CFR Part 61, Subpart M*] (Code §§7-1-030.A.8, 7-1-060)
Permittee shall comply with Code §§7-1-030.A.8 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 [*40 CFR Part 82 Subpart F*] (Code §§1-3-140.15, 1-3-140.58.k)
The permittee shall comply with the applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, Recycling and Emissions Reduction.
 3. Use of Paints
 - a. 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.

b. 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.

c. 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.

4. 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 500°F 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 500°F 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.

L. Acid Rain Program Requirements - Combustion Turbine and Steam Generating Units [*40 CFR Parts 72, 73, 75 and 76*] (Code §3-6-565)

1. Affected Units

For purposes of the SO₂ limitation, continuous emission monitoring and allowance accounting requirements under the Acid Rain program, the steam generating units constitute "affected units," and shall respectively be known as "Unit 1" and "Unit 2."

For purposes of the continuous emission monitoring and reporting requirements under the Acid Rain program, the Frame 7EA combustion turbine constitutes an "affected unit" and shall be known as "CT3."

2. The Acid Rain Phase II Permit application and Certificate of Representation signed by the Designated Representative shall constitute the basis of the Acid Rain Permit element of this permit.

3. The Permittee shall comply with the Acid Rain requirements listed in 40 CFR Parts 72, 73 and 75, and any additional requirements listed within this permit. At a minimum, compliance

with 40 CFR Part 75 shall include installation and operation of monitoring equipment and/or maintenance of recordkeeping as required under 40 CFR §§75.10, 75.11 and 75.12.

4. The Permittee shall hold SO₂ allowances as of the allowance transfer deadline in each compliance subaccount not less than the total annual actual emissions of SO₂ for the previous calendar year as required by the Acid Rain Program. In calculating those allowances, Permittee may utilize SO₂ Allowance Allocations for the respective units, as follows:

Affected Unit	Pollutant	Years 2000 -> 2009	Years 2010 and thereafter
Unit 1	SO ₂	203	188
Unit 2	SO ₂	24	22
CT3	SO ₂	n/a	n/a

- * Affected Unit 1 and 2 refer to the steam generating units
- * Affected unit CT3 refers to the 7EA combustion turbine
- * N/A means no allocations are available for the unit, and allowances must be obtained elsewhere
- * None of the affected units at this facility is subject to a NO_x emission limitation under 40 CFR Part 76.

6. Compliance Demonstration [Mandated by 40 CFR §70.6(c)] (Code §§3-1-060.b.2.d, 3-1-081.A.2, 3-1-083)

A. Monitoring [Mandated by 40 CFR §70.6(a)(3)]

Monitoring requirements here supplement and expand upon any emission-unit-specific monitoring requirements imposed as applicable requirements under the "Authority to Construct" provisions of this permit, or separately defined below with respect to specific emission units.

1. Non-instrumental emissions monitoring - oxides of nitrogen, sulfur dioxide, PM₁₀
 - a. Affected units

Monitoring for the steam generating units and the W-501AA turbine generators shall comply with these monitoring requirements.
 - b. General Requirement

As a surrogate measurement for monitoring emissions of oxides of nitrogen and PM₁₀, Permittee shall maintain records of the type and quantity of fuel usage in the turbines and steam generators, as well as the quantity of power produced when combusting those respective fuels. PM₁₀ emissions shall be calculated on the basis of that fuel consumption data, and calculated emission rates shall reflect both filterable and condensible fractions.

As long as the capacity utilization factor for any specific emission unit stays below 10% when combusting exclusively primary fuel over the preceding 12-month period, or 5% if Permittee has combusted secondary fuel in the preceding 12-month period, then for purposes of monitoring emissions for emission inventory reporting, Permittee may rely upon manufacturer's data or AP-42 emission factors. Quantification of emissions based on AP-42 emission factors shall utilize the latest version and supplement of AP-42.
 - c. Conditional Performance Test Requirement

If a specific emission unit reaches or exceeds a 10% capacity utilization factor when combusting only primary fuel or reaches or exceeds a 5% capacity utilization factor when combusting secondary fuel even in part, then Permittee shall conduct a performance test for NO_x and PM₁₀. The test(s) shall quantify emissions using

whichever fuel(s) triggered the testing requirement. The test(s) shall be conducted within 90 days of triggering the testing requirement, or such longer period as the Control Officer may allow upon a showing of cause. The test(s) shall conform to the requirements set forth elsewhere in this permit, and that test-derived data shall be used for purposes of subsequent emission reporting. Performance testing triggered under this subparagraph need only be conducted once during the life of this permit.

d. Fogging System Hours of Operation

Permittee shall keep records of the hours of operation of the inlet fogging systems for both CT1 and CT2.

2. Non-instrumental emissions monitoring - Particulate matter

As a surrogate measurement for monitoring emissions of particulate matter, Permittee shall maintain records of water flowrate in the cooling towers.

3. Non-instrumental Emissions Monitoring - Sulfur Dioxide

a. Primary Fuel - Plant Wide

i. Elective Acid Rain Monitoring Protocol

When combusting primary fuel, namely pipeline quality natural gas, and Permittee maintains either a contractual commitment or a copy of a relevant FERC tariff showing that the hydrogen sulfide content of the natural gas is 1 grain/100 scf or less, and that total sulfur content is 20 grain/100 scf or less, then Permittee may quantify SO₂ emissions based upon hourly heat input rate in mmBtu/hr. and a default SO₂ emission rate of 0.0006 lb/mmBtu.

ii. Alternative Physical Monitoring Protocol

Alternatively, Permittee may sample fuel on a daily basis to quantify fuel sulfur content, and may utilize that value and a mass balance to calculate daily SO₂ emissions.

b. Secondary Fuels - W-501AA combustion Turbines and Steam Generating Units

As a surrogate measurement for monitoring emissions of sulfur dioxide when combusting secondary fuels, Permittee shall maintain daily records reflecting total fuel consumption, and total sulfur content within that fuel consumption. For purposes of quantifying fuel sulfur content, Permittee may rely upon the average secondary fuel-sulfur-determination required elsewhere under this permit. On a schedule adequate to demonstrate compliance with each applicable emission limitation, Permittee shall calculate sulfur dioxide emissions, based upon the assumption that all sulfur consumed is emitted as sulfur dioxide.

4. Opacity monitoring [Code §3-3-260.]

a. Stack Emissions

i. General Requirement When Combusting Primary Fuel

As long as permittee combusts only primary fuels in a given emission unit, then on at least a semi-annual basis, Permittee shall conduct a visual opacity screen performed on each process and fuel-burning exhaust stack for that emission unit. The individual conducting the opacity screen need not be a certified opacity observer, and the screening need not conform to any EPA reference method. If visible emission are observed, Permittee

shall have a full Method 9 opacity test performed by a certified opacity observer, and shall provide a copy of the resulting report to the District within 10 days. Submission of a report showing an exceedance of the ~~40%~~ opacity limitation set forth in this permit shall constitute cause to reopen this permit to add additional testing and/or control requirements.

ii. Requirement When Combusting Secondary Fuels

Permittee shall perform a Method 9 opacity test upon any emission unit within three hours of the first time such emission unit combusts secondary fuel for more than an aggregate of 48 hours during any semi-annual compliance period. Thereafter until the end of that semi-annual compliance period, if the initial opacity test resulted in observed opacity exceeding 20% then Permittee shall conduct an additional Method 9 opacity test each time the emission unit combusts secondary fuel continuously for more than 72 hours, or combusts secondary fuel for an aggregate of more than 168 hours since the preceding opacity test. Permittee shall have all Method 9 opacity tests performed by a certified opacity reader and shall report the opacity actually observed as an element of the semi-annual compliance report, provided that any opacity test showing opacity in excess of ~~40%~~ shall be reported under an excess emission report.

b. Open-area Fugitive Emissions

On at least a semi-annual basis, Permittee shall conduct a visual opacity screen performed on the open areas of the facility. The individual conducting the opacity screen need not be a certified opacity observer, and the screening need not conform to any EPA reference method. If visible emissions are observed, Permittee shall have a full Method 9 opacity test performed by a certified opacity observer within 48 hours after the screen, and shall provide a copy of the resulting report, along with any possible explanation for the event, to the District within 10 days. Submission of such a report may constitute cause to reopen this permit to add additional testing and/or control requirements.

B. Monitoring Compliance with Emission Caps - Frame 7EA Combustion Turbine [*Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)*] (Code §3-1-081.A)

1. CEMs Monitoring System Requirement

a. General

In order to quantify emissions from the Frame 7EA combustion turbine unit, permittee shall quantify and monitor emissions to show compliance. The NO_x and CO emissions shall be quantified on the basis of the CEMs required elsewhere under this permit.

b. NO_x CEMs Initial and Annual Evaluations

Permittee shall conduct an initial NO_x CEMs evaluation, and subsequent annual evaluations, in accord with the RAA and RATA requirements for NO_x CEMs, under 40 CFR Part 75, Appendix A.

c. CO CEMs Initial and Annual Evaluations

Permittee shall conduct an initial CO CEMs evaluation, and subsequent annual evaluations, in accord with 40 CFR Part 60 Appendix B, Performance Specification 4, and 40 CFR §§60.1230 through 60.1275, provided that reported CO concentrations shall be corrected to 15% O₂.

2. Requirement to quantify emissions and demonstrate compliance with cap-limitations

[Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)] (Code §3-1-083)

a. General Requirement

Permittee shall monitor and record daily emissions of NO_x and CO from the Frame 7EA combustion turbine, shall total and record those daily emissions on a calendar-month basis, and shall maintain and record a rolling annual average of emissions, rolled on a calendar-month basis. In the event that CO CEMs data is unavailable due to monitoring equipment malfunction, permittee may use Part 75 data substitution methodology to define the missing data.

b. Quantifying Emissions Prior to CEMs Certification

For the time period between initial startup of the 7EA combustion turbine and the initial evaluation/certification of the CEM systems, permittee shall use fuel usage records and emission factors determined from the initial performance tests to quantify NO_x and CO emissions.

c. After-the-fact adjustment of reported emissions to reflect CEMs accuracy deviations shown by RATA testing (new)

If RATA testing establishes that actual emission rates, as shown by reference method testing, exceed the emission rates reported by the CEMs for the reference period, then in addition to applying a "bias adjustment factor" to the data acquisition system such that future reported emissions reflect the newly re-calibrated CEMs, the reported NO_x emissions for the reference period shall be increased by that same adjustment factor. For purposes of this subparagraph, the "reference period" shall include the calendar month during which the subject RATA test was performed, and each of calendar months since the prior "reference period."

C. Monitoring Compliance - CT1 and CT2 ***[Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)]*** (Code §3-1-081.A.3)

1. Without foggers

At least 60 days before the installation of the foggers in CT1 and CT2, Permittee shall conduct performance tests on either CT1 or CT2 to determine NO_x and CO emissions following the General Testing Requirements of this permit. Testing shall be conducted at full load and during natural gas combustion.

2. With foggers

Within 60 days after the installation of the foggers in CT1 and CT2, Permittee shall conduct performance tests on the same unit as in the previous section, while the foggers are in operations, to determine the NO_x and CO emissions, also following the General Testing Requirements of this permit. Tests shall be conducted under the same conditions as the tests without the foggers, and the testing report shall include the NO_x and CO emissions both "with" the foggers in service and "without" the foggers in service.

D. Acid Rain Compliance ***[Mandated by 40 CFR Parts 72 and 76]***

1. SO₂ Allowance-limited Affected Units [40 CFR Part 75] (Code §3-6-565)

For affected units defined above as Unit 1, Unit 2 and CT3, permittee shall monitor SO₂, NO_x and CO₂ emissions in accord with the requirements of 40 CFR Part 75. At a minimum, monitoring and corresponding records required under this subsection shall conform to the requirements of 40 CFR §§75.10, 75.11 and 75.12.

E. NSPS Compliance - 7EA Combustion Turbine ***[Mandated by 40 CFR §70.6(a)(3)]***

1. NSPS Performance Tests [40 CFR §§60.8 and 60.335, Code §§3-1-160 & 3-1-170)
 - a. Within 60 days after an affected unit achieves the maximum production rate at which the plant will be operated, but not later than 180 days after the notification of initial actual start-up required under this permit, Permittee shall conduct such tests as may be required under either 40 CFR Part 60, Subpart A or Subpart GG.
 - b. A test plan protocol for each test shall be submitted to the District at least sixty (60) days before the testing, provided that the Control Officer may allow a shorter time upon a showing of cause.
 - d. In consideration of the installation and operation of NO_x CEMs, additional NSPS performance tests will not be required for an affected unit equipped with such CEMs, unless the Control Officer elects to impose such an additional testing requirement.
2. SO₂ Limitation Compliance - Parametric emissions monitoring - sulfur dioxide [Code §3-3-260.G.]

As a surrogate measurement for monitoring emissions of sulfur dioxide from an affected unit, Permittee shall maintain daily records reflecting total fuel consumption in each combustion turbine unit. On a cycle adequate to comply with the emission limitations and semi-annual reporting requirements under this permit, Permittee shall utilize the SO₂ emission calculation methodology set forth in 40 CFR part 75, Appendix D, to calculate and report SO₂ emissions. Permittee shall determine fuel sulfur content either by:

- a. Sampling the gaseous fuel daily; or
- b. Maintaining a contractual commitment from the pipeline gas supplier demonstrating that the gas has a hydrogen sulfide content of 1 grain 100 scf or less, and a total sulfur content of 20 grain/100 scf or less, in which case Permittee shall be entitled to use a presumptive maximum SO₂ emission rate of 0.0006 lb/mmBtu for purposes of demonstrating compliance with this permit.

F. NESHAP Monitoring and Compliance for Emergency Compression Ignition Engines [40 CFR §§63.6625(e), (f), (h), (i), 63.6640(f)]

Beginning no later than May 3, 2013:

1. Permittee shall maintain the engine according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provided 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.
2. Permittee shall install a non-resettable hour meter if one is not already installed.
3. Permittee shall 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, after which time the non-startup limitations of §5.C.7 of this permit apply.
4. Permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirements of this permit. The oil analysis shall be performed at the same frequency specified for changing the oil in §5.C.7 of this permit. The analysis program shall at a minimum analyze the following 3 parameters: total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30% of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20% from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all these limits are not exceeded, Permittee is not required to change the oil. If any of the limits are exceeded, Permittee shall change the oil within 2 days of receiving the results of the analysis, or if not in operation, within 2 days or

before commencing operation, whichever is later. Records of the parameters analyzed, results of the analysis and oil changes shall be kept. The analysis program shall be part of the maintenance plan for the engine.

5. Permittee shall not operate the emergency generator other than for emergency operations, maintenance and testing, and operations in non emergency situations for 50 hours per year. These 50 hours can not be used for peak shaving or to generate income for a facility to supply power to a grid or otherwise supply power as part of a financial arrangement with another entity, except for 15 hours per years which may be used as part of a demand response program if the regional transmission organization has determined there are emergency conditions that could lead to a potential electrical blackout. The engine may not be operated for 30 minutes or more prior to the emergency condition, and the engine operation must be terminated immediately after the emergency is no longer imminent.
6. Operations during emergency situations is not limited.
7. Permittee may operate the emergency generator for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing is limited to 100 hours per year. The 50 hours of non-emergency situations allowed in subsection 4 above count towards the 100 hours fo maintenance checks and readiness testing.

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

1. Test Methods [40 CFR 60.8, Code §§3-1-160 & 3-1-170)

To the extent this permit requires tests, for purposes of preparing emission inventory data or otherwise, and specific test methods are not defined elsewhere, Permittee shall conduct performance tests, using standard test methods specified below, or equivalent methods as approved by the District pursuant to approval of the test plan required below. The tests shall be conducted using standard test methods approved by the EPA (40 CFR Part 60). These tests shall be performed at the maximum practical production rate. A test plan protocol for each test shall be submitted to the District at least forty five (45) days before the testing, which period the Control Office may shorten upon a showing of cause. Any continuous monitoring systems required for purposes of demonstrating compliance with an emission cap shall be in place and operating prior to conducting the performance tests. CEMs required for other purposes may be installed in accord with the schedule allowed by the underlying applicable requirement. Relevant test methods include, but are not limited to:

- a. nitrogen oxides emissions -Ref. Part 60, App. A, Ref. Method 7
- b. carbon monoxide emissions -Ref. Part 60, App. A, Ref. Method 10
- c. particulate matter emissions - filterable PM₁₀ - Ref. Part 60, App. A, Ref. Method 5, or Method 201A
- d. particulate matter emissions - condensible PM₁₀ - Ref. Part 60, App. A, Ref. Method 202
- e. volatile organic compound emissions - Ref. Part 60, App. A, Ref. Method 25a
- f. opacity - Ref. Part 60, App. A, Ref. Method 9, 40 CFR §60.11

2. Subsequent Performance Testing (Code §3-1-050)

In addition to such on-going testing as may be required below as monitoring, the Control Officer may order additional testing pursuant to Code §3-1-050.

3. Performance Test Notices

Notice of any performance test required by this permit shall be submitted to the District at least 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 days after the test. The test report shall include any relevant information required under this permit.

- H. Recordkeeping *[Mandated by 40 CFR §70.6(a)(3)]* (Code §3-1-083) **[40 CFR §§63.6655(a), (e)]**
1. Permittee shall maintain at the source, a file of all measurements, including monitoring-system-, monitoring-device-, and performance- testing measurements; all monitoring system performance evaluations; all monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; 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 hours of operation of #1 and #2 Steam Generating Units, of #1 and #2 Combustion Turbines, and of each auxiliary generator in a permanent logbook for inclusion in the semi-annual report. **For the generator, no later than May 3, 2013, the records shall specify how many hours were spent for emergency operations and non-emergency purposes, and if the generator was used for demand response, the records shall include a notification of the emergency situation, and the time the engine was operated as part of the demand response.**
 3. Permittee shall maintain records of the occurrence and duration of any start-up, shutdown or malfunction in the operation of the permitted facility or any air pollution control equipment.
 4. All information required pursuant to any federally enforceable provision of this permit, recorded in a permanent form suitable for inspection.
 5. **No later than May 3, 2013, Permittee shall keep records of the maintenance conducted on the emergency generators to demonstrate that they were operated and maintained according to the maintenance plan.**
- I. Semi-Annual Compliance Reporting *[Mandated by 40 CFR §§70.6(a)(3) and 70.6(c)(4)]* (Code §3-1-083.A)**[40 CFR §§63.6640(b), 63.6650(a), (c), (d)]**
1. 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. The report shall be submitted to the District within 30 days after the end of each calendar half.
 2. **With respect to emergency generators, if there are no deviations from any emissions limitations or operating limitations that apply to you, compliance reports after May 3, 2013 shall contain a statement that there were no deviations from such limitations during the reporting period. If there was a malfunction, the compliance report shall include the number, duration and brief description for each malfunction which caused or may have caused any applicable limitation to be exceeded, as well as a description of the actions taken to minimize emissions during the malfunction and to correct the malfunction.**
- J. 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 a certification of compliance with the provisions of this permit to the Control Officer, and also to the Administrator of the US EPA. The certification shall:
1. Be signed by a responsible official, namely the president, secretary, treasurer or vice-president of the corporation, the director of fossil generation, the plant manager, 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 start of each calendar year.

7. Other Reporting Obligations

A. Supplemental Upset Reports [*Mandated by 40 CFR §§70.6(a)(3)(iii)(B), 70.6(g)*]

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 this permit.

B. Reconstruction Reporting [*40 CFR Part 60, Subpart A, Code §6-1-030.1 and a delegation from the EPA Administrator dated 2/24/93*].

If the Permittee proposes to replace components of either steam generating unit or either turbine unit, such that the capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new unit, the Permittee shall notify the District of the proposed replacements. The notice shall be postmarked 60 days (or as soon as practicable) before construction is commenced, and must include the information required under 40 CFR §60.15(d) (1993).

C. NSPS Notification [*40 CFR Part 60, Subpart A*]

Permittee shall provide notifications required by 40 CFR Part 60, Subpart A, pertaining to installation of, modification of, or a change in the method of operation of NSPS-affected units in a manner that will cause an increase in emissions of a regulated pollutant.

8. Fee Payment [*Mandated by 40 CFR §§70.6(a)(7), 70.9*] (Code §3-1-081.A.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.
3. It shall not be a defense for a permittee in an enforcement action that it would have been

necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

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

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 §§ 3-1-083.A.6, 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;
3. to sample emissions from the source.
4. to have access to and copy, at reasonable times, any records that are required to be kept under the terms of this permit; and
5. to record any inspection by use of written, electronic, magnetic and photographic media.

- E. Transfer of Ownership *[Mandated by 40 CFR §70.7(d)(4)]* (Code §3-1-090)

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. Application Certification *[Mandated by 40 CFR §70.5(d)]* (Code §§ 3-1-050. & 3-1-070.)

All representations with regard to construction plans, operating parameters, and operational procedures in the application for the permit are conditions upon which this permit is issued. Except as provided in Code §3-2-180, any variance from such representation if the change will cause a change in the method of control of emissions, the emission of any new regulated air pollutant in excess of the 5.5 pound-per-day *de minimis* amount defined in Code §1-3-140.37, or will result in an increase in the discharge of regulated air pollutants will be considered a violation of this permit unless the Permittee first applies for a permit, permit revision, or permit amendment, or provides advance notification of the change to the extent required by Code Chapter 3, Article 2.

I. Renewal of Permit [*Mandated by 40 CFR §§70.5(a)(1)(iii), 70.7(c)*] (Code §3-1-050.C.2)

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)*] (Code §3-1-081.A.7)

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.)

1. Generally

Subject to the following schedule of exclusions², compliance with the terms of this permit shall be deemed compliance with any applicable requirement identified in §2 of this permit. The permit-shield exclusions include:

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

2. Additional Inclusions Under the Permit Shield

The permit shield also extends to the following provisions of the code, due to a finding by the Control Officer of non-applicability:

- a. Code §§5-22-950, 5-22-960 & 5-22-970, all dealing with Fossil Fuel-Fired Steam Generators.

L. Permit Revisions [*Mandated by 40 CFR §70.7(d), 70.7(e)*] (Code Chapter 3, Article 2, specifically Code §3-1-081.A.8.c)

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.

² See the Technical Support Document for an explanation of the exclusions.

4. Should this source become subject to a standard promulgated by the Administrator pursuant to CAA §112(d), then Permittee shall, within twelve months of the date on which the standard is promulgated, submit an application for a permit revision demonstrating how the source will comply with the standard. (Code §3-1-050.C.5)
5. Revision to Permit Provisions Designated as Federally Enforceable Pursuant to Code §3-1-084 *[Federally enforceable provision, pursuant to Code §3-1-084 (8/11/94)]*

As an express condition of preserving the federal enforceability of any provision of this permit designated "federally enforceable" pursuant to Code §3-1-084, Permittee shall not make any facility allowed change that would contravene such provision, until thirty (30) days after the Permittee has previously furnished notice of the proposed change to the District and to the Administrator, to thereby allow the Administrator opportunity to comment upon the continued "federal enforceability" of the subject provision after the proposed change.

- M. Permit Re-opening *[Mandated by 40 CFR §§70.6(a)(6)(iii), 70.7(f), 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.A.8.d)
- 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.

Q. Emission Inventory (Code §3-1-103)

Permittee shall annually prepare and submit an emission inventory of actual emissions. In order of preference, the inventory shall be based on:

1. CEMs data where available;
2. Mass balance analysis based on fuel testing for sulfur;
3. SO₂ quantification conventions allowed under 40 CFR Part 75, Appendix D;
4. Parametric monitoring of fuel or other throughput parameters, coupled with AP-42 emission factors, based on the latest edition and supplement for AP-42;
5. Parametric monitoring of fuel or other throughput parameters, coupled with performance test data for the emission unit in question;
6. Other rational analysis.

10. Additional provisions applicable to Title V Sources (Code §3-1-081.B.2)

Subject to the following specific exclusions, all terms and conditions of this permit are enforceable by the Administrator and citizens under the Clean Air Act. The exclusions include:

- A. Section 1. Introduction
- B. Section 4. Authority to Construct
- C. Section 5.B. Emission Limitation - NO_x Emission Concentration
- D. Section 5.C.3. Current Code Limitation (§5-23-1010)
- E. Section 5.D. Fuel Use Limitations
- F. Section 9.F. Posting of Permit
- G. Section 12. Emission Inventory Table

11. Equipment Schedule [Mandated by 40 CFR §70.5(c)(3)(iii)] (Code §3-1-040.A)

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

ID#	Equipment	Manufacturer	Serial Number	Capacity
Steam Unit 1	Installed in 1953			115 MW
	Boiler (Steam Generator)	Combustion Engineering, Inc.	#19003	800,000 lb/hr
	Turbine (Steam Turbine)	General Electric Co.	H.P.-I.P. 13-A-2041-1 & L.P.13-A-2042-1	110,000 kW
	Generator	General Electric Co.	1-S-60-P-482	
	Condenser	Worthington	1571171	576 MMBtu/hr

	Cooling Tower	Marley Cross Flow	653-3-10	58,800 gpm
	Associated Equipment			
Steam Unit 2	Installed in 1954			105 MW
	Boiler (Steam Generator)	Combustion Engineering, Inc.	#19003	800,000 lb/hr
	Turbine (Steam Turbine)	General Electric Co.	H.P. -I.P. 10-A-6680-1 & L.P. 10-A-6681-1	110,000 kW
	Generator	General Electric Co.	1-S-59-P-741	
	Condenser	Worthington	1571172	576 MMBtu/h r
	Cooling Tower	Marley Cross Flow	653-3-10	58,800 gpm
	Associated Equipment			
CT1	Combustion Turbine w/inlet fogging system - Installed 1/72			54.50 MW
	Combustion Turbine	Westinghouse W-501-AA	17A5042/1S-79P708	
	Associated Equipment			
CT2	Combustion Turbine w/inlet fogging system - Installed 2/73			54.50 MW
	Combustion Turbine	Westinghouse W-501-AA	17A5056/1S-80P514	
	Associated Equipment			
CT3	Combustion Turbine w/ inlet fogging system- Installed 8/02			80 MW
	Combustion Turbine	General Electric #7EA	297976/336X922	
	Associated Equipment			
Storage Tanks	Heated Oil Storage Tank			2,310,000 gallons
	(2) Heated Oil Storage Tanks			4,200,000 gallons
	#2 Diesel Storage Tank			1,260,000 gallons
	#2 Diesel Storage Tank			4,200,000 gallons

	Automobile Diesel Storage Tank			500 gallons
	Admin. Building - Boiler			
	Sand Blasting Equipment			
	Air Atomization Spray Gun and Hand Painting			
	Diesel Emergency Generator	Kohler #60REOZJB		110 hp

Associated Equipment: One or more of the following systems:

- a. lube oil systems;
- b. fuel delivery systems
- c. water treatment systems;
- d. water supply systems;
- e. service/instrument air system.

Other Emission Units and General Issues

- Was secondary fuel for the steam generators purchased during the reporting period? YES/NO
 - If so, was a sulfur content analysis performed pursuant to §5.C.2.b? YES/NO
- Was secondary fuel for the W501-AA combustion turbines purchased during the reporting period? YES/NO
 - If so, was a sulfur content analysis performed pursuant to §5.C.3.b? YES/NO
- Did the sulfur content of all secondary fuels purchased conform to the 0.8/0.9% sulfur limit of §5.D.2? YES/NO
- Did any of the steam turbine generators or the W501-AA combustion turbines trigger a performance test requirement under §6.A.1.c? YES/NO
- Were daily records of maintained for secondary fuel in either the steam turbine generators or the W501-AA combustion turbines, as required under §6.A.3.c? YES/NO
- Were the opacity screenings required under §6.A.4.a.i performed on all generating units? YES/NO
- If any of the steam turbine generators or the W501-AA combustion turbines utilized secondary fuels, were the opacity tests required under §6.A.4.a.ii performed on time? YES/NO
- Were the open area opacity screenings required under §6.A.4.b performed? YES/NO
- Were the NSPS-driven auxiliary turbine fuel sulfur monitoring requirements under §6.E.3. met? YES/NO
- Were records required under §6.G.1 (generic recordkeeping) been maintained? YES/NO
- Was the emergency generator operated and maintained in accordance with the operational limitations of §5.C.7.a? (starting May 3, 2013) YES/NO

Other issues

On a separate sheet, describe and explain any monitoring activity or recordkeeping that occurred with respect to the Asbestos NESHAP or Stratospheric Ozone requirements respectively defined in §§5.K.1 and 5.K.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

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 _____
 Date _____

Mail to - Pinal County Air Quality Control District
 PO Box 987
 Florence, AZ 85132

Appendix B

INSIGNIFICANT ACTIVITIES

- A. General information (Code §§ 1-3-140.74A, 3-1-050, & 3-3-081)
1. An insignificant is one which accounts for less than 1 percent of a source's emissions of conventional air pollutants or generates less than 200 pounds per year of regulated air pollutants. Additionally, an activity specifically listed as such in the Code is insignificant.
 2. Permit application need not provide emissions data regarding insignificant activities and such activities need not be listed in the permit. Insignificant activities need only be listed in the permit application.

- B. Non-exclusive list of insignificant activities.

Activities which may generate emissions in insignificant amounts include but are not limited to the following:

1. Short term maintenance activities including but not limited to:
 - a. Abrasive blasting
 - b. Painting
 - c. Solvent use
 - d. Steam cleaning
 - e. Equipment removal and replacement
 - f. Welding, brazing, and soldering operations
2. Operation of Oil/Water Systems/Scrubber Liquid Systems
3. Operation of cooling water, plant water, wastewater, and other water systems.
4. Emissions from testing and sampling.
5. Emissions from oil systems and tanks.
6. Cathodic Protection System
7. Storage of chemicals and fuels
8. Operation of battery systems
9. Operation of emergency and standby equipment rated at less than 325 brake horsepower and used less than 72 hours per year.
10. 1 MWe solar parabolic trough power facility (approved on 3/2004, to be installed in 2004) comprised of a System Ormat (turbine/generator), backup diesel generator 62 kw and Marley cooling tower.