

**Technical Review and Evaluation
of
Application for Air Quality Permit #49216**

I. INTRODUCTION

The Fairview Generating Station, located one mile north of Highway 80 on Sulphur Springs Road in Douglas, Arizona, is owned and operated by Arizona Public Service Company (APS). The station provides power to the electric grid on an as-needed basis, primarily during emergency situations such as interruption of the main power lines. The Fairview Generating Station meets the energy demands of the City of Douglas in case the main electrical supply is interrupted.

A. Company Information

Facility Name:	Fairview Generating Station
Mailing Address:	P.O. Box 53933, Mail station 4552 Phoenix, AZ 85072-3933
Facility Address:	Sulphur Springs & Lawrence Douglas, Cochise County, AZ 85607

B. Attainment Classification

The source is in a non-attainment area for PM₁₀. This area is in attainment for all other criteria pollutants.

II. FACILITY DESCRIPTION

A. Description

The Fairview Generating Station has a simple cycle combustion turbine unit which provides power to the electric grid on an as-needed basis, primarily during emergency situations such as interruption of the main power lines and a starting engine which supplies power to the turbine for start up. The station went into commercial operation on May 31, 1972, and has the capacity to generate 20.95 MW firing #2 diesel fuel. The startup engine burns only #2 diesel fuel and is rated at a maximum capacity of 500 horsepower (hp). The #2 diesel fuel is delivered to the station by trucks and kept in a storage tank with a total capacity of 20,000 barrels.

B. Control Equipment

The Fairview generating station has no air pollution control equipment.

III. COMPLIANCE HISTORY

There have been 10 facility inspections of this facility since 2001. No cases or violations have been developed as a result of the inspections.

IV. EMISSIONS

Table 1 below gives the potential emission from the facility.

Table 1: Potential Emissions from the Facility

Pollutant	PM	PM ₁₀	SO ₂	NO _x	CO	VOC
Units	Tons per year					
Potential to Emit	155	15.55	69.50	794.52	5.18	0.53

The emissions for PM, PM₁₀ and VOC were determined using EPA's Compilation of Emission factors, known as AP-42.

The emissions of NO_x and CO were determined using source test data from year 2001.

The emissions of SO₂ were determined with stoichiometric calculations based on sulfur content of 0.05 percent in the diesel.

V. APPLICABLE REQUIREMENTS

Table 2: Applicable Requirements

UNIT ID	CONTROL EQUIPMENT	APPLICABLE REQUIREMENTS	VERIFICATION
Combustion Turbine and Starting Engine	None	A.A.C. R18-2-719.B R18-2-719.C.1 R18-2-719.E R18-2-719.F R18-2-719.H R18-2-719.I R18-2-719.J R18-2-719.K	The turbine was installed on March 31, 1972, and has maximum power of 75 MMBtu per hour. The requirements of NSPS Subpart GG are applicable to turbines installed or reconstructed after October 3, 1977. This turbine has not been modified or reconstructed since 1972. Therefore NSPS Subpart GG is not applicable.
Diesel Storage Tank	None	A.A.C. R18-2-730.D R18-2-730.F R18-2-730.G	This rule for unclassified sources applies to the diesel storage tank.

UNIT ID	CONTROL EQUIPMENT	APPLICABLE REQUIREMENTS	VERIFICATION
Fugitive Dust	Reasonable precautions or any other method approved by the Director	A.A.C. R18-2-604.A R 18-2-604.B R18-605.A R-18-2-605.B R 18-2-606 R 18-2 -607.A R 18-2 -702.B R 18-2-804.B	Requirements for fugitive dust sources from the Arizona Administrative Code.
Mobile Sources		A.A.C.R18-2-804.A	Requirements for mobile sources are from Arizona Administrative Code.
Periodic Activities: Abrasive Blasting	Dust emission must be minimized through use of good modern practices.	A.A.C.R18-2-726	Requirements for abrasive blasting, spray painting, demolition and renovation and non-vehicle air conditioning maintenance from the Arizona Administrative Code and Federal requirements.
Spray Painting	Spray painting will be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray.	A.A.C.R18-2-727	
Demolition and Renovation Non-vehicle Air Conditioner Maintenance Services	None	A.A.C.R18-2-1101.A.8	
	None	40 CFR 82, Subpart F	

VI. PREVIOUS PERMITS

A. List of the permits

All of the permits issued to APS-Fairview are listed in the table below.

Table 3: List of Permits

PERMIT NUMBER	DATE PERMIT ISSUED	DESCRIPTION
30345	8/23/2004	Class I Permit renewal

B. Previous Permit Conditions

Permit #30345

Table 4: Previous Permit Conditions

CONDITION #	DELETE	KEEP	REVISE	STREAM LINE	REMARKS
Attachment "A"			√		Attachment "A" has been updated with the most recent Attachment "A".
Attachment "B"					
I. A		√			Requirement of EPA Reference Method 9 certified person renumbered as Condition I.A.1.
II. A		√			Voluntarily accepted limitations.
II. B.1		√			Emission limitations for PM and opacity.
II.B.2			√		Monitoring and recordkeeping requirements for baseline opacity have been deleting since the facility has determined the baseline opacity as specified by the previous operating permit.
II.B.3			√		Performance testing for PM has been revised. Testing requirements have been deleted since the allowable emissions are higher than the potential emissions.
II.C		√			Requirement for testing of NO _x .
II.D			√		Requirements for SO ₂ have been revised. Testing has been deleted since the facility is using #2 diesel containing sulfur below 0.05 percent thereby reducing the SO ₂ emissions below 100 tons per year.

CONDITION #	DELETE	KEEP	REVISE	STREAM LINE	REMARKS
III			√		Non Point Sources changed to Fugitive Dust Requirements. Most recent language has been used in the renewal permit.
IV			√		Requirement for Mobile Sources renumbered as Condition V. Most recent language has been used in the renewal permit.
V			√		Requirements for Other Periodic Activities renumbered as Condition IV. Most recent language has been used in the renewal permit.
Attachment "C"			√		Equipment list has been revised by adding Diesel Storage Tank.

VII. MONITORING REQUIREMENTS

- A. This facility is a peaking plant and is operated on as-needed basis. The opacity of the emissions from the stack of simple cycle gas turbine and the starting engine will be monitored every 80 hours of operation. If the opacity of the emissions observed appears to exceed the standard, then the Permittee must conduct a certified EPA Reference Method 9 observation. The Permittee is required to keep records of the initial observation and any EPA Reference Method 9 observation performed. These records must include the type of observation performed, emission point observed, name of observer, date and time of observation and the result of the observation.
- B. The facility is also required to maintain a copy of the fuel oil purchase specification sheet indicating the heating value and sulfur content of the #2 diesel combusted in the engine. The purchase specification sheet should indicate the method used to determine the sulfur content of the #2 diesel being combusted.

VIII. TESTING REQUIREMENTS

- A. This operating permit does not contain emission limitations for NO_x. The potential emissions of NO_x are above 100 tons per year. Therefore performance testing for NO_x will be conducted if their emission exceeds 100 tons in any rolling 12-month period, in accordance with Arizona Testing Manual. The performance testing will be conducted within 90 days after the 12-month rolling total, determined on a daily basis, exceeds 100 tons per year. The number of hours after which 100 tons per year of NO_x is emitted can be determined as follows:

$$\text{NO}_x: (100 \text{ tpy} * 8,760 \text{ hrs/yr}) / 795 \text{ tpy} = 1,103 \text{ hrs/yr}$$

- B. The requirement for initial testing of PM has not been included in the permit since the potential to emit based on AP-42 emission factors is low compared to the allowable emissions of PM cited in A.A.C. R 18-2-719.C.1. (Potential to emit is 35.52 lbs/hour and allowable emissions are 81.1 lbs/hr.)

IX. COMPLIANCE ASSURANCE MONITORING (CAM) (40 CFR 64):

The General Electric simple cycle combustion turbine does not have any add-on emissions controls. Therefore, CAM does not apply. CAM only applies to emission units with an add-on control device.

X. INSIGNIFICANT ACTIVITIES

Table 6: Insignificant Activities

Source No.	Insignificant Activities	Insignificant	Governing Rule
1	Acetylene, Butane, Propane Torches	Yes	A.A.C.R18-2-101.57.j
2	Activities Associated with Maintenance Repair or Dismantlement of an Emission Unit or other Equipment.	Yes	A.A.C.R18-2-101.57.a
3	Aerosol Can Usage	Yes	A.A.C.R18-2-101.57.j
3	Brazing and Soldering Activities	Yes	A.A.C.R18-2-101.57.j
4	Cathodic Protection	Yes	A.A.C.R18-2-101.57.j
5	Caulking Operations	Yes	A.A.C.R18-2-101.57.j
6	Chemical Storage Barrels	Yes	A.A.C.R18-2-101.57.j
7	Chemical Storage, Hazardous Products and staging Area	Yes	A.A.C.R18-2-101.57.j
8	Corona	Yes	A.A.C.R18-2-101.57.j
9	Electric Motors	Yes	There is no fuel combustion in electric motors.
10	Emissions sampling and Associated Activities	Yes	A.A.C.R18-2-101.57.j

Source No.	Insignificant Activities	Insignificant	Governing Rule
11	Evaporative Coolers	Yes	A.A.C.R18-2-101.57.j
12	Flammable Storage Cabinets	Yes	A.A.C.R18-2-101.57.j
13	Flares Used to Indicate Danger to the Public	Yes	A.A.C.R18-2-101.57.j
14	Fuel Oil Piping Systems Including: Flanges, Valves, Pump Seals, Pressure Relief Valves and other Individual Components	Yes	A.A.C.R18-2-101.57.j
15	Fugitive Dust Emissions From the Operation of Passenger Vehicle	No	A.A.C.R18-2-610
16	Gas Turbine False Start Drain	Yes	A.A.C.R18-2-101.57.j
17	Gas Turbine Lube Oil Vents	Yes	A.A.C.R18-2-101.57.j
18	Gas Turbine Starting Diesel Engines	No	A.A.C.R18-2-719
19	Hydraulic System Reservoirs	Yes	A.A.C.R18-2-101.57.j
20	Janitorial Activities	Yes	A.A.C.R18-2-101.57.a
21	Landscaping Equipment	Yes	A.A.C.R18-2-101.57.a
22	Lube Oil Storage Area (New Products)	Yes	A.A.C.R18-2-101.57.j
23	Maintenance Shop Heaters	Yes	A.A.C.R18-2-101.57.j
24	Normal Usage of Misc. Consumer Products	Yes	A.A.C.R18-2-101.57.j
25	Oil Circuit Breakers	Yes	A.A.C.R18-2-101.57.j
26	Oil Filter Draining	Yes	A.A.C.R18-2-101.57.j
27	Paint Storage Area	Yes	A.A.C.R18-2-101.57.j
28	Painting	No	A.A.C.R18-2-727
29	Pesticide/Herbicide Activity	Yes	A.A.C.R18-2-101.57.j
30	Portable Testing Equipment and Testing Activities	Yes	A.A.C.R18-2-101.57.i
31	Portable Welder from outside	Yes	A.A.C.R18-2-101.57.j
32	Production of Hot Water Not Related to Industrial Process	Yes	A.A.C.R18-2-101.57.j

Source No.	Insignificant Activities	Insignificant	Governing Rule
33	Pump/Motor Oil Reservoirs	Yes	A.A.C.R18-2-101.57.j
34	PVC/ABS Pipe Weldings	Yes	A.A.C.R18-2-101.57.j
35	Repair and Maintenance of Roads and Other Paved or Open Areas	No	A.A.C.R18-2-605.A
36	Safety Devices, Fire Extinguishers and Cardox System	Yes	A.A.C.R18-2-101.57.j
37	Sand Blasting	No	A.A.C.R18-2-726
38	Satellite Accumulation Barrels	Yes	A.A.C.R18-2-101.57.j
39	Portable Toilette	Yes	A.A.C.R18-2-101.57.j
40	Cooling Service Water and Piping	Yes	A.A.C.R18-2-101.57.j
41	Small Equipment fueling Area	Yes	A.A.C.R18-2-101.57.j
42	Smoking Area	Yes	A.A.C.R18-2-101.57.j
43	Solvent Cleaning Tank (Maintenance Shop)	Yes	A.A.C.R18-2-101.57.j
44	Station Transformer	Yes	A.A.C.R18-2-101.57.j
45	Steam Cleaners	Yes	A.A.C.R18-2-101.57.j
46	Combustion Turbine Battery Tank	Yes	A.A.C.R18-2-101.57.j
47	Steam Oil Tank Vents	Yes	A.A.C.R18-2-101.57.j
48	Storm Water Drainage Area	Yes	A.A.C.R18-2-101.57.j
49	Used Oil Storage Area	Yes	A.A.C.R18-2-101.57.j
50	Welding	Yes	A.A.C.R18-2-101.57.j

XI. LIST OF ABBREVIATIONS

A.A.C.....	Arizona Administrative Code
ADEQ.....	Arizona Department of Environmental Quality
APS.....	Arizona Public Services
CAM.....	Compliance Assurance Monitoring
CFC.....	Chlorofluorocarbons
CFR.....	Code of Federal Regulations
CO.....	Carbon Monoxide
EPA.....	Environmental Protection Agency
HP.....	Horse Power
MMBtu.....	Million British Thermal Unit
MW.....	Mega Watts
NO _x	Nitrogen Oxide
NSPS.....	New Source Performance Standards
PM.....	Particulate Matter
PM ₁₀	Particulate Matter below 10 micron size
SO ₂	Sulfur Dioxide
VOC.....	Volatile Organic Compounds