

**ARIZONA PUBLIC SERVICE COMPANY-CHOLLA GENERATING STATION
AIR QUALITY PERMIT NO. 65054**

I. INTRODUCTION

This Class I renewal permit issued to Arizona Public Service Company (APS) for continued operation of Cholla Generating Station located near Joseph City in Navajo County, Arizona. This permit renews and supersedes Operating Permit No. 53399.

A. Company Information

Facility Name: Cholla Generating Station

Mailing Address: P.O. Box 188, Mail Station 4451
Joseph City, Navajo County, AZ 86032

Facility Address: 4801 Cholla Lake Road
Joseph City, Navajo County, AZ 86032

B. Attainment Classification

The facility is located in an area that is classified as an attainment area for all criteria pollutants.

II. PROCESS DESCRIPTION

The Cholla generating station consists of three coal-fired steam generating units, associated air pollution control devices and auxiliary equipment necessary to produce approximately 855 megawatts of electricity. Unit 1 was completed in 1962, Unit 3 was completed in 1980, and Unit 4 was placed in commercial operation in 1981. Unit 2 was shut down on October 1, 2015. The maximum process rates and operating hours of the steam units at the Cholla generating station are summarized in Table 1.

Table 1: Maximum process rates¹ and operating hours

Emission Unit	Hours/yr	Gross MW	Gross MW-hr/yr
Steam Boiler Unit 1	8,760	125	1,095,000
Steam Boiler Unit 3	8,760	305	2,671,800
Steam Boiler Unit 4	8,760	425	3,723,000

1. The maximum process rates listed in the table are estimates and should not be used as operating limits of any kind.



A. Process Description

Cholla generating station is a Steam Electric Station, Standard Industrial Code (SIC) 4911 Electric Generation, consisting of three units (Units 1, 3, and 4) which are coal-fired steam boilers with Source Classification Code (SCC) #1-01-002-26. Pulverized coal is tangentially fired into the dry bottom furnace of each unit. Separated over-fire air is applied to Unit 1. Separated and closed coupled over-fired air (OFA) is applied to Units 3 and 4.

Coal for the facility is supplied by the Lee Ranch and El Segundo mines near Grants, New Mexico. The coal is transported to the Cholla generating station via trains and unloaded at a “coal handling” facility which includes a Coal Preparation Plant that directs coal to the three units and a main coal pile. Two track feeders systems, “old” and “new”, are used to unload coal directly to any of the three units, the main coal pile or any combination thereof. The main coal pile contains approximately a 45 day supply of coal. Coal unloaded at the coal handling facility is released through the bottom of the train rail cars to one of two large grates known as grizzlies. The coal collected below the grizzly at the old track feeders is loaded to a coal conveying belt which travels to coal crusher tower #1 where, the coal can be crushed and directed to the Unit 1 silos or to coal crusher tower #2 where it can be conveyed to the silos for Units 3 or 4. The coal collected below the grizzly at the new track feeders is loaded to a coal conveying belt which travels to coal crusher tower #2. The crusher tower reduces the size of the coal before transporting the coal to Unit 1 (via crusher tower #1) or to the transfer tower #2 which sends it to the main pile or sends the coal to Units 3, and 4 via the transition tower. Reclaim off of the bottom of the main pile goes to transfer tower #2 (via crusher tower #2) and is transported to Units 1, 3, and 4. The crusher/transfer towers coal conveyor belts feed the top of coal silos of each steam boiler unit silos.

All unit silos feed coal gravitationally to feeders which supply each pulverizer where the coal is ground to the consistency of talcum-powder before firing in the furnace. There are three Emergency diesel generators for purposes of safely shutting a Unit down in a loss of off-site power situation.

All three units at the Cholla generating station combust bituminous/sub-bituminous coal to heat high purity water to create super-heated steam which is used as the thermodynamic medium that drives the turbines/generators to produce electricity.

Unit 1 uses natural gas as the warm-up/ stabilization fuel and Units 3 and 4 use diesel fuel #2. All warm-up/ stabilization fuels are fired less than one percent of total unit operating time. Historical operating data indicate this to be approximately 0.7 percent of total heat input on Unit 1 and approximately 0.3 percent on Units 3 and 4.

Condenser cooling for Unit 1 is provided by Cholla Reservoir, while Unit 3 and 4 have mechanical draft cooling towers with Unit 3 receiving make-up water from the reservoir and Unit 4 mainly from the well field and from the reservoir as an alternate source.

Unit 4 has a used oil burning system which injects on-spec used oil and/or used oil fuel into the furnace for energy recovery purposes, and is co-fired with coal. The total heat input from this activity is typically less than 0.1 percent of total heat input to Unit 4 on an annual basis. Diesel fuel is used in the emergency generators located at Units 2 through 4.

B. Coal Supply

The facility typically burns 2.5 to 3.0 million tons of coal annually or about 70% of the total potential burn rate of approximately 4.2 million tons.

**Table-2: Coal Characteristics**

Coal Data	Lee Ranch/ El Segundo
Sulfur	1.01%
Btu/lb	9,154
SO ₂ in coal (lb/MMBtu)	2.21
Ash	17.30%
Moisture	15.50%

C. Air Pollution Control Equipment

Cholla generating station utilizes fabric filters at Units 1, 3 and 4. For sulfur dioxide emissions removal, Unit 1 utilizes a tray tower absorber with lime reagent and Units 3 & 4 use sulfur dioxide spray tower absorbers with lime reagent. All units are retrofitted with low-NO_x burners and over-fire air system to control NO_x emissions.

Table 3: Current Air Pollution Controls

Equipment	PM	SO _x	NO _x
Unit 1	Baghouse	2 tray tower absorbers with lime reagent; 90% SO ₂ removal	Low NO _x burners
Unit 3	Baghouse	SO ₂ Spray Tower Absorber	Low NO _x burners
Unit 4	Baghouse	SO ₂ Spray Tower Absorber	Low NO _x burners
Fly ash Silo	Baghouse	N/A	N/A
Lime Silo	Baghouse	N/A	N/A
Lime Slaker Vent	Wet scrubber	N/A	N/A
Coal Handling Facility	Baghouse or wetting systems with chemical suppressant	N/A	N/A

III. EMISSIONS

As described in Section I, the Cholla operation burns fossil fuel to produce electricity. The fossil fuel combustion results in emissions of a number of criteria air pollutants which mainly include particulate matter (PM)/particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM₁₀), sulfur dioxide (SO₂), nitrogen oxides (NO_x), carbon monoxide (CO), and volatile organic compound (VOC). Table 4 summarizes potential to emit (PTE) of criteria air pollutants and hazardous air pollutants. For detailed emissions calculations refer to the permit application.

Table 4: Potential Emissions

Pollutant	Emissions (tons per year)
PM	1249.64
PM ₁₀	1249.64
PM _{2.5}	53
NO _x	14,834.71
CO	1,047.71
SO ₂	5,562.82
VOC	2.76
H ₂ SO ₄	6.44
HAPs	23.74

IV. APPLICABLE REGULATIONS

APS-Cholla has identified all applicable regulations that apply to its facility in Attachment A of the permit application. The permit is a renewal of the Title V Permit No. 55399 and incorporates all regulations that were determined applicable in that permit.

Table 5: Verification of Applicable Regulations

Unit	Year of Manufacture/ Installation	Control Device	Rule	Discussion
Steam Boiler Unit 1	1961	Baghouse, Two tray absorber with lime reagent, and Low NO _x Burners	A.A. C. R 18-2-703 NESHAP Subpart UUUUU	Unit 1 was installed in 1961 and is subject to A.A.C. R18-2-703. NSPS Subpart D is not applicable since this was installed before the applicability year of 1971.
Steam Boiler Unit 3 and Unit 4	1975 and 1978	Baghouse, SO ₂ spray tower absorber, and Low NO _x Burners	40 CFR Subpart D, 40 CFR 63- NESHAP Subpart UUUUU, and Regional Haze Visibility Protection, 40 CFR 52.145	New Source Performance Standards, Subpart D, NESHAP Subpart UUUUU, and Regional Haze- 40 CFR 52.145 are applicable to Unit 3 and Unit 4 Steam Boiler.
Sorbent Injection System, Cooling Towers 3 & 4,		None	A.A. C. R 18-2-702.B.3 & C A.A. C. R 18-2-730	A.A.C. R 18-2-730 is applicable to unclassified sources.



Unit	Year of Manufacture/ Installation	Control Device	Rule	Discussion
Fly Ash Handling, and Lime Handling & Slaking		Wet Scrubber and Baghouse	A.A. C. R 18-2-702.B.3 & C A.A. C. R 18-2-730	A.A.C. R 18-2-730 is applicable to unclassified sources.
Internal Combustion Engines	1974, 1975, and 1978	None	A.A. C. R 18-2-719 NESHAP Subpart ZZZZ	All emergency ICEs are subject to A.A.C. R18-2-719 (Standards of Performance for the Existing Stationary Rotating Machinery). These are also subject to NESHAP Subpart ZZZZ.
Coal Preparation Plant		Baghouse or wetting systems with chemical suppressant	A.A. C. R 18-2-702.B.3 & C A.A. C. R 18-2-716 NSPS Subpart Y	State regulation apply to the coal preparation plant that was operational prior to applicability date of October 27, 1974. For newer system, NSPS Subpart Y is applicable.
Fugitive dust sources		Water Trucks Dust Suppressants	A.A.C. R18-2 Article 6 A.A.C. R18-2-702	These standards are applicable to all fugitive dust sources at the facility.
Abrasive Blasting		Wet blasting; Dust collecting equipment; Other approved methods	A.A.C. R-18-2-702 A.A.C. R-18-2-726	These standards are applicable to any abrasive blasting operation.
Spray Painting		Enclosures	A.A.C. R18-2-702 A.A.C. R-18-2-727	This standard is applicable to any spray painting operation.
Demolition/renovation operations		N/A	A.A.C. R18-2-1101.A.8	This standard is applicable to any asbestos related demolition or renovation operations.
Mobile sources		None	A.A.C. R18-2-801	These are applicable to off-road mobile sources, which either move while emitting air pollutants or are frequently moved during the course of their utilization.

V. COMPLIANCE HISTORY

Inspections are being conducted on this source to ensure compliance with the permit. No cases or violations have been developed as a result of inspections.



VI. PREVIOUS PERMIT CONDITIONS

A. Previous Permit

Table 6: Previous Permits

Permit No.	Issue Date	Application Basis
53399	May 31, 2012	Class I Operating Permit
57587	November 12, 2013	Class I Significant Permit Revision
59165	January 14, 2014	Class I Minor Permit Revision
59371	July 7, 2014	Class I Significant Permit Revision
60129	August 22, 2014	Class I Minor Permit Revision
61210	April 16, 2015	Class I Significant Permit Revision
61713	October 16, 2015	Class I Significant Permit Revision
64498	November 8, 2016	Class I Minor Permit Revision

- B.** This Renewal Permit No. 65054 is for the continued operation of this facility. Table 7 below illustrates if a section in Permit No. 53399 as revised by Minor Revision #64498 was revised or deleted.

Table 7: Permit No. 64498

Section No.	Determination		Comments
	Revised	Delete	
Att. A.	X		General Provisions - Revised to represent most recent template language.
Attachment "B"			
I.F	X		Revised to include Alternative Method -082 (Digital Camera Operating Technique)
III		X	Section related to Unit 2 deleted since Unit 2 shutdown in October, 2015
IV	X		This Section for Unit 3 renumbered as Section III
V	X		This Section for Unit 4 renumbered as Section IV
VI	X		This Section for Best Available Retrofit Technology for NO _x requirements renumbered as Section V
VII	X		This Section for Cooling Towers 3 and 4 renumbered as Section IX.
VIII	X		This Section for Coal Preparation Plant renumbered as Section X.
IX	X		This Section for Fly Ash Handling renumbered as Section XI
X	X		This Section for Lime Handling and Slaking renumbered as Section XII



Section No.	Determination		Comments
	Revised	Delete	
XI	X		This Section for Fugitive Dust Requirements renumbered as Section XIII.
XII	X		This Section for Mobile Source Requirements renumbered as Section XIV.
XIII	X		This Section for Other Periodic Activities renumbered as Section XV.
XIV	X		This Section for Internal Combustion Engines renumbered as Section VIII
XV	X		This Section for applicability of Mercury Requirements deleted since this is past applicability date.
XVI	X		This Section for Hazardous Air Pollutants renumbered as Section VI.
XVI.B		X	This condition for compliance date deleted. Other conditions renumbered accordingly.
XVI.C	X		This Condition for General Requirements renumbered as Condition VI.B
XVI.D	X		This Condition for Emission Limits/ Standards renumbered as Condition VI.C
XVI.D.4.c	X		This condition revised since Unit 2 has been decommissioned and renumbered as Condition VI.C.4.c
XVI.E	X		This Condition for Compliance Demonstration renumbered as Condition VI.D.
XVI.E.1		X	This condition for initial compliance deleted since initial compliance has been demonstrated.
XVI.E.2	X		This condition for Continuous Compliance renumbered as Condition VI.D.1
XVI.E.3	X		This condition for Continuous Emission Monitoring System Requirements renumbered as Condition VI.D.2
XVI.E.4			This condition for Deviation Determination renumbered as Condition VI.D.3
XVI.F	X		This condition for Notification renumbered as Condition VI.E
XVI.G	X		This condition for Reports renumbered as Condition VI.F
XVI.H	X		This condition for Record Keeping Requirements renumbered as Condition VI.G.
XVII	X		This condition for Sorbent Injection System renumbered as Condition VII.

VII. PERIODIC MONITORING REQUIREMENTS

A. Steam Unit 1

1. Opacity:

Unit 1 is subject to 20% opacity limit in accordance with A.A.C. R18-2-702.B.3. Cholla is required under A.A.C. R18-2-313.C.1.a to maintain and operate a continuous monitoring system for opacity. The monitoring system is required to meet the requirements of A.A.C. R18-2-313.D.1, which references to 40 CFR 60.13 and 40 CFR 60, Appendix B, Performance Specification 1.



2. SO₂

The unit is subject to the sulfur dioxide standard of 1.0 lb/MMBtu heat input under A.A.C. R18-2-703.G.1 while burning coal. Cholla is required under A.A.C. R18-2-313.C.1.b to maintain and operate a continuous monitoring system (CEMS) for sulfur dioxide. The monitoring system is required to meet the requirements of 40 CFR 60.13 and 40 CFR 75, Appendix A through C. The source is also required to meet 80% SO₂ removal efficiency through the use of the control device. SO₂ concentrations at inlet and outlet of the control device are monitored by CEMS to determine compliance with the SO₂ removal efficiency.

3. NO_x

There is no standard for NO_x emissions from Unit 1 as it was built before May 30, 1972. NO_x monitoring is not required, except for 40 CFR 76 NO_x standards which requires compliance CEMS. The unit is fitted with low-NO_x burners and over-fire air systems to reduce emissions of NO_x.

4. Particulate Matter

The unit is subject to the particulate matter emissions standard set forth in A.A.C. R18-2-703.C.1. The unit also has potential pre-control device PM emissions that are greater than 100 tons per year, the major source threshold, and pursuant to 40 CFR 64.2(a), the compliance assurance monitoring (CAM) is required. In conjunction with the low-NO_x burners and the baghouse, Cholla shall follow the monitoring approach presented in Table 7.

B. Steam Unit 3

1. Opacity:

Unit 3 is subject to an opacity standard of < 20% except for one six-minute period per hour of not more than 27% opacity. Cholla is required under 40 CFR 60.45(a) to maintain and operate a continuous monitoring system for opacity. The monitoring system is required to meet the requirements of 40 CFR 60.13 and 40 CFR 60, Appendix B, Performance Specification 1.

2. SO₂:

Unit 3 is subject to an SO₂ emissions limit of 0.8 lbs/MMBtu. Cholla is required to maintain and operate a SO₂ continuous monitoring system consistent with Subpart Da requirements at inlet and outlet of the sulfur dioxide control device that will be utilized to determine compliance with the sulfur dioxide emission and removal efficiency limit. The SO₂ CEMS is required to meet the requirements of 40 CFR 60.13, 40 CFR 60, Appendix F, and 40 CFR 75, Appendix A through C.

3. NO_x:

The unit is subject to the NO_x standard of 0.70 lb/MMBtu heat input in 40 CFR 60.44(a)(3) while burning coal. Although Cholla is exempted from installation of a continuous NO_x monitoring system under 40 CFR 60.45(b)(3), periodic monitoring for NO_x emissions is required under A.A.C. R18-2-306.A.3.c. The Acid Rain Program NO_x CEMS will be used to meet the periodic monitoring



requirement. For QA/QC purpose, the monitoring system is required to meet the requirements of 40 CFR 60.13 and 40 CFR 75, Appendix A through C. The unit is fitted with low-NO_x burners and over-fire air systems to reduce emissions of NO_x.

4. PM:

The unit is subject to a standard of 0.10 lb/MMBtu set forth in 40 CFR 60.42(a)(1). The unit also has potential pre-control device PM emissions that are greater than 100 tons per year, the major source threshold, and pursuant to 40 CFR 64.2(a), CAM is required. Using COMS data, Cholla is to calculate block 1-hour average opacities excluding periods of boiler startup, shutdown, and malfunction. If at any point, excluding periods of boiler startup, shutdown, and malfunction, the opacity average exceeds 8%, then Cholla will initiate mandatory investigation within 30 minutes, including inspection of the clean side of each in-service baghouse compartment for signs of dusting. Records of investigation and corrective action taken are required to be maintained.

C. Steam Unit 4

1. Opacity:

Unit 4 is subject to an opacity standard of < 20% except for one six-minute period per hour of not more than 27% opacity. Cholla is required under 40 CFR 60.45(a) to maintain and operate a continuous monitoring system for opacity. The monitoring system is required to meet the requirements of 40 CFR 60.13 and 40 CFR 60, Appendix B, Performance Specification 1.

2. SO₂:

The unit is subject to the sulfur dioxide standard of 0.8 lb/MMBtu heat input in A.A.C. R18-2-903.1 while burning coal. Cholla is required under 40 CFR 60.45(a) to maintain and operate a continuous monitoring system for sulfur dioxide emissions. The monitoring system is required to meet the requirements of 40 CFR 60.13 and 40 CFR 75, Appendix A through C.

3. NO_x:

The unit is subject to the NO_x standard of 0.70 lb/MMBtu heat input in 40 CFR 60.44(a)(3) while burning coal. Although Cholla is exempted from installation of a continuous NO_x monitoring system under 40 CFR 60.45(b)(3), periodic monitoring for NO_x emissions is required under A.A.C. R18-2-306.A.3.c. The Acid Rain Program NO_x CEMS will be used to meet the periodic monitoring requirement. For QA/QC purpose, the monitoring system is required to meet the requirements of 40 CFR 60.13 and 40 CFR 75, Appendix A through C. The unit is fitted with low-NO_x burners and over-fire air systems to reduce emissions of NO_x.

4. PM:

Unit 4 is subject to a standard of 0.10 lb/MMBtu set forth in 40 CFR 60.42(a)(1). The unit also has potential pre-control device PM emissions that are greater than 100 tons per year, the major source threshold, and pursuant to 40 CFR 64.2(a), the



compliance assurance monitoring (CAM) is required. Using COMS data, Cholla is to calculate block 1-hour average opacities excluding periods of boiler startup, shutdown, and malfunction. If at any point, excluding periods of boiler startup, shutdown, and malfunction, the opacity average exceeds 8%, then Cholla will initiate mandatory investigation within 30 minutes, including inspection of the clean side of each in-service baghouse compartment for signs of dusting. Records of investigation and corrective action taken are required to be maintained.

Cholla is required to follow the monitoring approach presented in Table 7.

D. Internal Combustion Engines

APS Cholla operates 3 diesel-fired emergency engines of capacity over 500hp and manufactured in the 1970s. The NSPS requirements are applicable to those engines manufactured after 2006. NESHAP requirements exempt existing emergency engines over 500 hp at a major source of HAPs. Hence only the Arizona Administrative Code (AAC) requirements, R18-2-719 are applicable. The engines are limited to 40% opacity requirement and sulfur content of less than 0.9% by weight. APS-Cholla is required to conduct weekly visible emissions observation when the engine is operating.

E. Other Point, Non-Point and/or Fugitive PM Emission Sources

Pursuant to A.A.C. R18-2-306.A.3.c, Cholla is required to conduct periodic monitoring at those other particulate matter emission sources for which the applicable requirement does not require periodic testing or instrumental or non-instrumental monitoring. These include all point, non-point and/or fugitive PM emission sources at the cooling towers 3 and 4, coal preparation plant, fly ash handling facility, lime handling and slaking facility, fugitive dust sources, and internal combustion engines. The periodic monitoring is carried out through a visual observation plan that identifies a central lookout station or multiple observation points as follows:

1. Point #1: Personnel overpass located at coal handling (North East area of plant)

Sources observed include coal unloading, coal crushers, coal stacking, coal reclaiming, Unit 1 coal handling/silo baghouse exhaust, coal transfer tower #1, all coal drop points from coal unloading to Unit 1 silos, to transition tower, and to coal stacker, Unit 1 flyash handling system, flyash silo baghouse exhaust, lime silo baghouse exhaust, lime slaking wet scrubber exhaust, coal storage pile, main entrance roadway and main south/north plant road.
2. Point #2: North of Unit 3 weld shop and south of Unit 2/3 diesel generators

Sources observed include Unit 3 diesel generators and Unit 3 fly ash handling.
3. Point #3: South east corner of Unit 4 auxiliary bay

Sources observed include Units 3 and 4, coal handling system baghouse exhausts, Unit 4 diesel generator, Unit 4 Eastern fly ash handling, and main East/West plant roadway.
4. Point #4: South West corner of Unit 4 Auxiliary Bay



Sources observed include Unit 3 and 4 cooling tower, laydown areas, and Unit 4 Western flyash handling.

The plan requires Cholla to make a weekly survey of the visible emissions at the above described vintage points. If there are no visible emissions, then Cholla is required to record the date, time, and results of the survey. If Cholla finds that on an instantaneous basis the visible emissions are in excess of the applicable opacity limit, then a six-minute Method 9 observation is required to be made. If this observation indicates opacity in excess of the applicable opacity limit, then Cholla is required to report it as excess emissions. If Cholla finds that the visible emissions are less than the applicable opacity limit, then Cholla is required to record the source of emission, date, time, and result of the observation.

F. Fugitive Dust

1. The Permittee is required to keep record of the dates and types of dust control measures employed.
2. The Permittee is required to show compliance with the opacity standards by having a Method 9 certified observer perform survey of visible emission from fugitive dust sources. The observer is required to conduct a 6-minute Method 9 observation if the results of the initial survey appear on an instantaneous basis to exceed the applicable standard.
3. The Permittee is required to keep records of the name of the observer, the time, date, and location of the observation and the results of all surveys and observations.
4. The Permittee is required to keep records of any corrective action taken to lower the opacity of any emission point and any excess emission reports.

G. Periodic Activities

1. The Permittee is required to record the date, duration and pollution control measures of any abrasive blasting project.
2. The Permittee is required to record the date, duration, and quantity of paint used, any applicable MSDS, and pollution control measures of any spray painting project.
3. The Permittee is required to maintain records of all asbestos related demolition or renovation projects. The required records include the “NESHAP Notification for Renovation and Demolition Activities” form and all supporting documents.

H. Mobile Sources

The Permittee is required to keep records of all emission related maintenance performed on the mobile sources.

VIII. MERCURY REQUIREMENTS

Units 1, 3 and 4 are equipped with fabric filter bag houses and wet absorbers, and Unit 2 is equipped with mechanical dust collector, venture-scrubbers, and absorbers. Operation of fabric filter baghouses and absorbers provide significant mercury removal. Native mercury removal is a



function of fly ash build up on the surface of fabric filter bag and gas flow rate. Also, mercury in oxidized state is highly water soluble, and is captured in wet flue gas desulfurization (FGD) systems. The sample testing for mercury indicated 89% mercury removal in Units 1, 3 and 4, and 30% removal in Unit 2. The facility-wide mercury removal, with assumed 0% removal from Unit 2, is expected to be significantly above the 50% target reduction level identified in the Consent Order.

IX. TESTING REQUIREMENTS

Cholla is required to conduct annual performance tests for stack emissions of opacity, particulate matter, sulfur dioxide, and nitrogen oxides from all steam boiler units to demonstrate, on an annual basis, compliance with the respective emissions standards, except for nitrogen oxides emissions from unit 1 stack where there is no applicable standard for NO_x emissions. Compliance with opacity standards is determined using EPA Reference Method 9. Performance tests for all pollutants are conducted using the procedures and methods contained in the Arizona Testing Manual or 40 CFR 60, Appendices A through F.

X. USED OIL OR USED OIL FUEL BURNING

Steam Boiler Unit 4 also co-fires with coal a small quantity of on-site generated used oil and/or used oil fuel for energy recovery purposes. Total heat input from this activity is typically less than 0.1 percent of total heat input to Unit 4 on an annual basis. The oil burned is required to be on specification as follows. To assure the standard to be met, Cholla is required to run sample testing semiannually for the used oil prior to burning. The flash point of the oil may not fall below 100 °F and the oil may not have following constituents in excess of the following allowable levels:

Arsenic	5 ppm
Cadmium	2 ppm
Chromium	10 ppm
Lead	100 ppm
PCBs	2 ppm
Total Halogens	1000 ppm

XI. COMPLIANCE ASSURANCE MONITORING (CAM) REQUIREMENTS

The CAM requirements for Unit 1, 3, and 4 are listed in Table 7.

Table 7: CAM Plan for Fabric Filter Baghouse

General Criteria	Performance indicator	Stack opacity at each of Steam Boiler Units 1, 2, 3 and 4 stacks	Induction draft (ID) fan suction pressure at each of Steam Boiler Units 1, 3, and 4, and at Unit 2 upon installation of fabric filter.	Individual baghouse compartment magnahelic differential pressure gage readings
	Measurement Approach	Opacity values from the Continuous Opacity Monitor (COM) at each boiler unit are monitored.	This is a direct indication of the condition of the baghouse filters for each boiler unit.	Each baghouse compartment is equipped with a magnahelic differential pressure gauge that continuously measures the differential air pressure across the compartment.
	Indicator range(s) and excursion definition	An excursion is defined as block 1-hour opacity average that exceeds 8%, excluding periods of boiler startup, shutdown, and malfunction. An excursion requires investigation of the compartment pressure differential values for decreases in differential pressure. Repairs or adjustments are made as necessary. A log of the corrective action(s) will be maintained.	An excursion is defined as an ID fan suction pressure reading that exceeds a unit specific pressure level in inches water column or a sudden drop of more than 1.0 inch in the ID fan suction pressure, excluding periods of boiler startup, shutdown, and malfunction.	An excursion is defined as a differential pressure value of more than ½ inch of water column above the resting or cleaning mode pressures, excluding periods of boiler startup, shutdown, and malfunction. Investigation is initiated to locate the cause.
Performance Criteria	Data representativeness	An increase in visible emissions (opacity) under steady-state operating conditions is an indirect indication of an increase in particulate matter emissions.	A high pressure indicates bags may be clogged and particulate matter may be being forced through the bag fabric. A sudden decrease in fan suction pressure indicates a possible bag break or seal loss. Particulate removal rates should remain consistent until a problem is detected.	From the standpoint of particulate removal efficiency, only a reading indicating a loss of compartment integrity shows a reduction in the overall efficiency of the baghouse. Readings indicating a compartment is clogged may not indicate degradation of overall baghouse particulate removal efficiency, but do signal the need for investigation.
	Verification of monitoring status	Effective upon commissioning of service of a fabric filter control device at each affected boiler unit.	Effective upon commissioning of service of a fabric filter control device at each affected boiler unit.	Effective upon commissioning of service of a fabric filter control device at each affected boiler unit.
	QA/QC practices	The COM equipment and data quality assurance is in conformance with 40 CFR Part 60 Appendix B & F.	Annual calibration of ID fan suction pressure gauges.	Annual calibration of the baghouse magnahelic gages. Operators check magnahelics on routine rounds each shift. The most frequent problem identified is plugged sensing lines which are cleared upon detection.
	Monitoring frequency	Continuous recording of opacity.	Continuous, with hourly recording of pressure values.	Cell magnahelic values recorded once per shift.
	Data collection procedures	The opacity monitor continuously records the average for each one (1) minute interval.	Operator records readings on the log sheet hourly.	Magnahelic readings are recorded once per shift. Once per week the operator records the in-service, reverse air cleaning, and at rest magnahelic readings on each cell, and notes any discrepancies. Plant management reviews this data to identify issues that need to be addressed immediately and those that can be added to the next scheduled maintenance work list.
	Averaging period	Block one hour.	N/A	N/A

XII. Insignificant Activities

Following is a list of insignificant activities identified by APS Cholla:

S. No.	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
1	Diesel Fuel Storage Tank (Small)	Fuel oil (VOC's)	397 Barrels, Diesel Fuel #2. Reid Vapor Pressure = 0.02 psia	A.A.C. R18-2-101.68.a.i
2	Fuel Oil Storage Tank (Large)	Fuel oil (VOC's)	9,870 Barrels, Diesel Fuel #2. Reid Vapor Pressure = 0.02 psia	A.A.C. R18-2-101.68.a.i
3	Generator Seal Oil Vapor Extractors	Oil Vapors (VOC's)		A.A.C. R18-2-101.68.a.i
4	Main Transformers (plus the following two items)	VOC's	246 pieces if equipment	A.A.C. R18-2-101.68.a.i
5	Miscellaneous Lube Oil Vents	VOC's		A.A.C. R18-2-101.68.a.i
6	Stand-by/Auxiliary transformers	VOC's	Included in above	A.A.C. R18-2-101.68.a.i
7	Switchyard Transformers/ Gear	VOC's	Included in above	A.A.C. R18-2-101.68.a.i
8	Turbine Lube Oil Tanks	Oil Vapors (VOC's)	U1=68 Barrels, U3=121Barrels, and U4=98 Barrels	A.A.C. R18-2-101.68.a.i
9	Turbine Lube Oil Vapor Extractors	Oil Vapors (VOC's)		A.A.C. R18-2-101.68.a.i
10	Unit 2, 3, & 4 Batch Oil Tank	VOC's	Approximately: 6, 000 Gal.	A.A.C. R18-2-101.68.a.i
11	Coal Crusher Tower Lube System	VOC's	Oil	A.A.C. R18-2-101.68.a.i or Not Applicable when less than 350 gallons
12	Equipment Lube Oil Storage Tanks	Oil Vapors (VOC's)	Small Tanks	A.A.C. R18-2-101.68.a.i or Not Applicable when less than 350 gallons
13	Fly Ash Blowers Oil Reservoirs	Lube oil vapors(VOC's)		A.A.C. R18-2-101.68.a.i or Not Applicable when less than 350 gallons
14	Oil/ Water Separators (2)	VOC's	Oil Water Separators	A.A.C. R18-2-101.68.a.i or Not Applicable when less than 350 gallons



S. No.	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
15	Oil Drip Racks	VOC's		A.A.C. R18-2-101.68.a.i or Not Applicable when less than 350 gallons
16	Turbine Cooling Vent (2)	VOC's		A.A.C. R18-2-101.68.a.i or Not Applicable when less than 350 gallons
17	Gasoline, Diesel Storage Tanks (AST)	Gas, Diesel (VOC's)	By Unit 4 Stack, 5,000 Gallons each, Annual Through put <40,000 Gallons	A.A.C. R18-2-101.68.a.ii
18	Locomotive Building Vent	VOC's	Storage of 55 Gallon oil Drums (2-4)	A.A.C. R18-2-101.68.a.v
19	Satellite Oil/ Hazardous Waste Areas	VOC's	Used oil collection tanks	A.A.C. R18-2-101.68.a.v
20	Used oil/ Hazardous Waste	VOC's, Metals, PCB'S	550 Gallon	A.A.C. R18-2-101.68.a.v
21	Abs Tank	PM ₁₀ (Lime)	Absorber Tanks (240,000 Gallons Each)	A.A.C. R18-2-101.68.a.vi
22	Acid Tank	H ₂ SO ₄	Chlorine building, 13,500 Gallons	A.A.C. R18-2-101.68.a.vi
23	Acid Tank	H ₂ SO ₄	Acid 13,400 gal.	A.A.C. R18-2-101.68.a.vi
24	Chemical Dry Tanks (3 Tanks/ Unit)	NH ₃ , NaOH	250 (3) Unit 1, 550 (3) U2/3, 500 (3) UNIT 4	A.A.C. R18-2-101.68.a.vi
25	EHC Reservoir	EHC Fluid Vapors (VOC's)	Synthetic oil	A.A.C. R18-2-101.68.a.vi
26	Elemental Sulfur Tank	PM ₁₀	Contains elemental Sulfur for enhancing Lime	A.A.C. R18-2-101.68.a.vi
27	Lime Tanks(1)	PM ₁₀	Lime 53,000 gal	A.A.C. R18-2-101.68.a.vi
28	Scale Inhibitor Storage Tank	Inhibitor	6500 gal. TANK (not in use)	A.A.C. R18-2-101.68.a.vi
29	Scale Inhibitor Storage Tank	Inhibitor	Cooling Towers, 5,600 Gallon Tank	A.A.C. R18-2-101.68.a.vi
30	Administrative Building Natural Gas Emergency Generator	VOC's		A.A.C. R18-2-101.68.b



S. No.	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
31	Fire Water Diesel Pumps (2)	Diesel fumes (VOC's)	<325 BHP. 150 BHP Each, 100 Gal Tanks, Each	A.A.C. R18-2-101.68.b
32	Unit Emergency Diesel Generators	Diesel fumes (VOC's)	>325 BHP. 155 Barrels. Emergency Stand-by use only	A.A.C. R18-2-101.68.b
33	Aerosol Paints/Brushes	VOC's	Spot Painting	A.A.C. R18-2-101.68.d
34	Spray Painting Architectural Application	PM ₁₀ , VOC's		A.A.C. R18-2-101.68.d.iv
35	Stack Gas Analyzers + Gas Cylinders	SO ₂ , NO _x , CO, CO ₂ , FLUE GAS	CEMS Vents	A.A.C. R18-2-101.68.e
36	Spray Painting-Architectural Application	PM ₁₀ , VOC's		A.A.C. R18-2-101.68.d.iv
37	Stack Gas Analyzers + Gas Cylinders	SO ₂ , NO _x , CO, CO ₂ , FLUE GAS	CEMS Vents	A.A.C. R18-2-101.68.e
38	Absorber Feed Tank	PM ₁₀	Flue Gas Desulfurization Tank U-1	A.A.C. R18-2-101.68.a.vi
39	Lime Area Mill Sumps	PM ₁₀ , VOC'S		A.A.C. R18-2-101.68.a.vi
40	Reagent Feed Tanks (2)	PM ₁₀ (Lime)	33,790 Gallons Each	A.A.C. R18-2-101.68.a.vi
41	Reagent Storage Tank	PM ₁₀ (Lime)	Tank open on top, 41,600 Gallons	A.A.C. R18-2-101.68.a.vi
42	Slurry Mix Tanks (2)	PM ₁₀	Contains fly ash with water, 103,000 Gallons each	A.A.C. R18-2-101.68.a.vi

XIII. TRIVIAL ACTIVITIES

Following is a list of trivial activities identified by APS Cholla:

	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
1	Locomotives (4)	Diesel fuel vapors (VOC's)- Mobil Sources		A.A.C. R18-2-144.a.i
2	Road Grader from Childs/ Irving	PM ₁₀ , VOC's	Mobil Source	A.A.C. R18-2-144.a.i
3	Street Cleaner	PM ₁₀ , VOC's	Mobil Source	A.A.C. R18-2-144.a.i



	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
4	Tracks Straightener Machine	VOC's	For rail road tracks, Mobil Source	A.A.C. R18-2-144.a.i
5	Portable Generators/ Pumps	VOC's	< 325 BHP.	A.A.C. R18-2-144.a.iii
6	Portable Welders	PM ₁₀		A.A.C. R18-2-144.b.iii
7	Welding Rod Fumes	PM ₁₀		A.A.C. R18-2-144.b.iii
8	Air Ejectors	PM ₁₀	Second Level	A.A.C. R18-2-144.b.v
9	Instrument Air Compressor Vents	VOC's	Compressed Air	A.A.C. R18-2-144.b.v
10	Soot Blowing Air Compressors	PM ₁₀ , VOC's	Associated with Unit	A.A.C. R18-2-144.b.v
11	Station Air Compressors	VOC'S	Compressed Air	A.A.C. R18-2-144.b.v
12	Battery Charging Areas	H ₂ SO ₄		A.A.C. R18-2-144.b.vi
13	E&I Battery Charging	H ₂ SO ₄		A.A.C. R18-2-144.b.vi
14	Misc. Steam Vents (6 -8)	Boiler Chemicals	Traces of NH ₃ , PO ₄ , N ₂ H ₄	A.A.C. R18-2-144.b.xix
15	Boiler Blowdowns	Boiler Chemicals	Traces of NH ₃ , PO ₄ , N ₂ H ₄	A.A.C. R18-2-144.b.xix
16	Boiler Drains and Vents	PM ₁₀	Associated with Unit	A.A.C. R18-2-144.b.xix
17	Gland Steam Condenser Exhausters	Steam	Steam	A.A.C. R18-2-144.b.xix
18	De-aerator Tanks	Trace Boiler Chemicals	Unit 4: 3,455 Gal, Unit 3: 6,200 Gal., and Unit 1: 6, 000 Gal.	A.A.C. R18-2-144.b.xvii
19	Parts Cleaners	EPA 2000 (non-VOC)	Maintenance Shop	A.A.C. R18-2-144.b.xxiii
20	De- gasifier Transfer Pump Vent (2)	VOC's		A.A.C. R18-2-144.b.xxiv
21	Absorber Area Sump Pump Vent (2)	VOC'S		A.A.C. R18-2-144.b.xxiv
22	Absorber Feed Pumps Bearings	Lube Oil Vapors (VOC's)		A.A.C. R18-2-144.b.xxiv



	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
23	Air Pre Heaters Guide Bearing Vents	VOC's		A.A.C. R18-2-144.b.xxiv
24	Air Pre Heaters Vents	VOC's		A.A.C. R18-2-144.b.xxiv
25	Boiler Feed Pumps Oil Cooling Vents (2)	VOC's		A.A.C. R18-2-144.b.xxiv
26	Bottom Ash Disposal Vents	VOC's		A.A.C. R18-2-144.b.xxiv
27	Cooling Towers Fan Motors Vents- 18	VOC's	Oil	A.A.C. R18-2-144.b.xxiv
28	Cooling Water Sump Pump Vents (2)	VOC's		A.A.C. R18-2-144.b.xxiv
29	Electro- Dryer Pump Vent	VOC's		A.A.C. R18-2-144.b.xxiv
30	Elemental Sulfur Tank Pump	VOC's		A.A.C. R18-2-144.b.xxiv
31	Emergency Cooling Water Pumps (2)	VOC's		A.A.C. R18-2-144.b.xxiv
32	Flyash Hopper Diffuser Blowers (4)	VOC's		A.A.C. R18-2-144.b.xxiv
33	ID/FD Fans oil Cooling Vents	VOC's		A.A.C. R18-2-144.b.xxiv
34	Lake Intake Closed Sump	VOC'S	Grease/ Oil	A.A.C. R18-2-144.b.xxiv
35	Lake Intake Trash Rakes	VOC's	Grease/ Oil	A.A.C. R18-2-144.b.xxiv
36	PWS Booster Pump Vent	VOC's		A.A.C. R18-2-144.b.xxiv
37	Reagent Feed Tanks Pumps (4)	VOC's		A.A.C. R18-2-144.b.xxiv
38	Reagent Storage Tank Pumps (2)	VOC's		A.A.C. R18-2-144.b.xxiv
39	Rotary Blower Pump Vent	VOC's		A.A.C. R18-2-144.b.xxiv
40	Scrubber Feed Pumps	Lube Oil Vapors (VOC's)		A.A.C. R18-2-144.b.xxiv
41	Seal Oil Pumps (3)	VOC's		A.A.C. R18-2-144.b.xxiv
42	Sediments Pond Transfer Pumps Vents	VOC's		A.A.C. R18-2-144.b.xxiv



	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
43	Slurry Disposal Pumps Vents	VOC's		A.A.C. R18-2-144.b.xxiv
44	Turbine Lube Oil Pumps (3)	VOC's		A.A.C. R18-2-144.b.xxiv
45	Unit Condensate Pump Vents (2)	VOC's		A.A.C. R18-2-144.b.xxiv
46	Vacuum Pumps	PM ₁₀	Mill Alley	A.A.C. R18-2-144.b.xxiv
47	General Water Building Vent	PM ₁₀ , VOC's		A.A.C. R18-2-144.b.xxiv & d.ii
48	Slurry Disposal Building Vents	PM ₁₀ , VOC's		A.A.C. R18-2-144.b.xxiv & d.ii
49	Acetylene Cylinders	Acetylene		A.A.C. R18-2-144.c.ii
50	Building and Yard Maintenance Facility	PM ₁₀ , VOC's		A.A.C. R18-2-144.c.ii
51	Bulldozer Mce. Shed	VOC's		A.A.C. R18-2-144.c.ii
52	Insulation Shop Vent	PM ₁₀		A.A.C. R18-2-144.c.ii
53	Mce. Shop Activities	PM ₁₀ , VOC's	Lathes, Welders, Cutting Oils, etc.	A.A.C. R18-2-144.c.ii
54	Sand Blasting	PM ₁₀	Enclosed	A.A.C. R18-2-144.c.ii
55	Welding Hood Exhaust	PM ₁₀		A.A.C. R18-2-144.c.ii
56	Woodworking	PM ₁₀		A.A.C. R18-2-144.c.ii
57	Air Conditioning Equipment	CFC'S /HCFC'S		A.A.C. R18-2-144.d.i
58	500 KV Control Building Vent	N-M Hydrocarbons		A.A.C. R18-2-144.d.ii
59	Electrical and Instrumentation Room Vents	H ₂ SO ₄		A.A.C. R18-2-144.d.ii
60	Machine Shop Vent	PM ₁₀ , VOC's		A.A.C. R18-2-144.d.ii
61	Mce. Building Vents	PM ₁₀ , VOC's		A.A.C. R18-2-144.d.ii
62	Scrubber Control Room Vent	PM ₁₀		A.A.C. R18-2-144.d.ii
63	Warehouses (2) Building Vents	PM ₁₀		A.A.C. R18-2-144.d.ii



	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
64	Charcoal Grills	PM ₁₀ , VOC's		A.A.C. R18-2-144.d.iv
65	Kitchen Hoods	VOC's		A.A.C. R18-2-144.d.iv
66	Coal Handling Building Vents	N-M Hydrocarbons, PM ₁₀		A.A.C. R18-2-144.d.vii & ii
67	Bathroom Vents	Non- Methane Hydrocarbons		A.A.C. R18-2-144.d.vii
68	Breakers			A.A.C. R18-2-144.d.xi
69	Ash Sluice Vents (3)	PM ₁₀	Wet Ash	A.A.C. R18-2-144.e.i
70	Boiler Feed water Pump Seal Water Tank	PM ₁₀		A.A.C. R18-2-144.e.i
71	Bottom Ash Transfer, Makeup Tank	PM ₁₀		A.A.C. R18-2-144.e.i
72	Bottom Ash Transfer Sump	PM ₁₀ , Boiler Cleaning		A.A.C. R18-2-144.e.i
73	Closed Cooling Water Tank Vent	PM ₁₀		A.A.C. R18-2-144.e.i
74	Condensate Storage (Water) Tanks	PM ₁₀		A.A.C. R18-2-144.e.i
75	Demister Water Tank	PM ₁₀	Water. 130,000 Gal.	A.A.C. R18-2-144.e.i
76	Feed water Heater Shell Side Vents	PM ₁₀		A.A.C. R18-2-144.e.i
77	Fire Water Tanks (2)	Water	Contains Well Water. 300,000 Gallons, Each	A.A.C. R18-2-144.e.i
78	Potable Water Head Tanks	Cl ₂		A.A.C. R18-2-144.e.i
79	Process Water Tank	PM ₁₀	For Scrubber (Contains Water)	A.A.C. R18-2-144.e.i
80	Service Water Tanks	Water		A.A.C. R18-2-144.e.i
81	Bleach Tanks	Bleach	U3: 5000 gal., U4: 1500 gal.	A.A.C. R18-2-144.e.iii
82	Potable Water System - Hypochlorinators	Cl ₂		A.A.C. R18-2-144.e.iii
83	Flammable Storage Cabinets	VOC's		A.A.C. R18-2-144.e.v



	EQUIPMENT NAME OR ID	EMISSION (POLLUTANT)	REMARKS	RULE
84	Natural Gas Line Vents	VOC's		A.A.C. R18-2-144.e.vi
85	Lab Chemicals	Hood Vents		A.A.C. R18-2-144.f.ii
86	Cathodic Protection System	Cl ₂	Plant Wide Metal Corrosion Protection	A.A.C. R18-2-144.h.iv
87	Lube Rack(S), Lube Building Vent	VOC's		A.A.C. R18-2-144.h.vi
88	Portable Heaters, Propane Tanks	VOC's	<500K BTU/hr , 250 GALS EA. (15)	A.A.C. R18-2-724; <500K BTU/HR
89	Sewage Treatment Plant	H ₂ S, Cl ₂ , VOC's, N-M Hydrocarbons	< 20,000 Gal. per day Package Plant Open on Top	A.A.C. R18-2-144.e.iii

XIV. LIST OF ABBREVIATIONS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
AQD	Air Quality Division
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
HAP	Hazardous Air Pollutant
hp	Horsepower
hr	Hour
IC	Internal Combustion
lb	Pound
m	Meter
MMBtu	Million British Thermal Units
NO _x	Nitrogen Oxide
Pb	Lead
PM	Particulate Matter
PM ₁₀	Particulate Matter Nominally less than 10 Micrometers
Psia	Pounds per square Inch (absolute)
PTE	Potential-to-Emit
SO ₂	Sulfur Dioxide
TPY	Tons per Year
VOC	Volatile Organic Compound
yr	Year