

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-07300005-2008**

Application Received: **June 22, 2007**

Plant Identification Number: **073-00005/073-00004**

Permittee: **Allegheny Energy Supply Company, LLC**

Facility Name: **Pleasants - Willow Island Power Stations**

Mailing Address: **800 Cabin Hill Drive Greensburg, PA 15601**

Physical Location: Willow Island, Pleasants County, West Virginia
UTM Coordinates: Pleasants: 474.49 km Easting • 4357.40 km Northing • Zone 17
Willow Island: 474.13 km Easting • 4357.36 km Northing • Zone 17
Directions: From Charleston take Interstate 77 North to Exit 179. Travel north on State Route 2 approximately 7 miles to Willow Island. Facility is located on the left in Willow Island, Pleasants County.

Facility Description

Pleasants Power Station is a fossil fuel fired electric generation facility with two 657 MW (net) units and operates under Standard Industrial Classification (SIC) code 4911. The facility consists of two (2) 6245 mmBtu/hr coal-fired boilers, two (2) 222 mmBtu/hr oil/natural gas-fired auxiliary boilers, two (2) 7.67 mmBtu/hr diesel-fired emergency generators, and various supporting operations such as coal handling, ash handling, lime handling and various tanks with insignificant emissions. The facility has the potential to operate seven (7) days per week, twenty-four (24) hours per day, and fifty-two (52) weeks per year.

Willow Island Power Station is a fossil fuel fired electric generation facility with a 55 MW (net) unit and a 188 MW (net) unit and operates under Standard Industrial Classification (SIC) code 4911. The facility consists of a 619 mmBtu/hr coal-fired boiler, a 1605 mmBtu/hr coal-fired boiler, two 19.89 mmBtu/hr oil/natural gas-fired auxiliary boilers, and one 4.22 mmBtu/hr diesel-fired emergency generator, and various supporting operations such as coal handling, ash handling, and various tanks with insignificant emissions. The facility has the potential to operate seven (7) days per week, twenty-four (24) hours per day and fifty-two (52) weeks per year.

Plantwide Emissions Summary [Tons per Year]

Regulated Pollutants	Potential Emissions	2006 Actual Emissions
Carbon Monoxide (CO)	1,516	995
Nitrogen Oxides (NO _x)	19,503	12,323
Particulate Matter (PM _{2.5})	1,269	370
Particulate Matter (PM ₁₀)	2,983	1,136
Total Particulate Matter (TSP)	5,608	1,383
Sulfur Dioxide (SO ₂)	92,578	52,301
Volatile Organic Compounds (VOC)	189	130
Hazardous Air Pollutants	Potential Emissions	2006 Actual Emissions
Hydrochloric Acid (HCl)	2,599	412.0
Hydrogen Fluoride	64	57.4
Sulfuric Acid	2,924	2,150
Formaldehyde	15.7	0.46

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

Due to this facility's potential to emit over 100 tons per year of each criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, Pleasants/Willow Island Power Station is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State: 45CSR2	Control of particulate matter emissions.
45CSR6	Open burning prohibited.
45CSR10	Control of sulfur dioxide emissions.
45CSR11	Standby plans for emergency episodes.
45CSR13	Permits for Construction, Modification, Relocation and Operation of Stationary sources
45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
45CSR26	NO _x Budget Trading Program
45CSR30	Operating permit requirement.
45CSR33	Acid Rain Provisions and Permits
45CSR37	Mercury Budget Trading Program
45CSR39	NO _x Annual Trading Program
45CSR40	NO _x Ozone Season Trading Program
45CSR41	SO ₂ Trading Program

	40 C.F.R Part 60, Subpart D	Standards of performance for Fossil Fuel Fired Steam Generators
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. Part 64	Compliance Assurance Monitoring
	40 C.F.R. Part 72	Permits Regulation
	40 C.F.R. Part 73	Sulfur Dioxide Allowance System Permits Regulation
	40 C.F.R. Part 74	Sulfur Dioxide Opt-ins
	40 C.F.R. Part 75	Continuous Emissions Monitoring
	40 C.F.R. Part 76	Nitrogen Oxides Reduction Program
	40 C.F.R. Part 77	Excess Emissions
	40 C.F.R. Part 78	Appeals Procedure for Acid Rain Program
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to request any pertinent information such as annual emission inventory reporting is provided in WV Code § 22-5-4(a)(14). The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR15, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-0071	May 17, 1974	
R13-0335	September 26, 1977	
R13-1099	May 9, 1989	
R13-1559	February 18, 1993	
R13-2319A	November 8, 2007	
CO-R13-99-39	November 8, 1999	
R33-3946-2012-3	December 18, 2007	Effective January 1, 2008
R33-6004-2012-3	December 18, 2007	Effective January 1, 2008
Pleasants NO _x Budget Permit	February 7, 2002	
Willow Island NO _x Budget Permit	February 7, 2002	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

In accordance with 45CSR§30-2.26., Pleasants Power Station and Willow Island Power Station are treated as one facility for Title V Purposes.

This is a renewal of the Title V permit. Since the original Title V Permit was issued, the following changes have been made:

Permit R13-2319A was issued. The amendment allows the facility to increase the maximum gypsum production rates from 104 tons per hour (TPH) and 911,040 tons per year (TPY) to 150 TPH and 1,314,000 TPY. This permit renewal incorporates the Title V permit minor modification.

Crusher by-pass conveyor No. 1a was added to the equipment table for the Willow Island station. A Permit Determination was submitted and it was determined that no permit was needed.

The Rule 2 monitoring plan for Pleasants was amended by the facility. Units P1 and P2 now exhaust through separate liners in a common stack, therefore the previous requirement to conduct Method 9 readings would not be accurate. The new monitoring plan requires parametric monitoring of coal characteristics and precipitator performance. The emission limits for PM, NO_x, and SO₂ for Pleasants are still based on individual units because of the separate stack liners.

PM testing in accordance with Permit Section 4.3.1. is scheduled for 2009 for Pleasants Units P1 and P2. PM testing was conducted in January and February 2008 for Willow Island Units W1 and W2, respectively.

State Rules 45CSR37, 45CSR39, 45CSR40, and 45CSR41 became effective and were incorporated into the permit as Sections 3.1.11., 12., 13., and 14. 45CSR37 is tied to the provisions of the federal CAMR program, which has been vacated. The DEP has initiated the process to repeal 45CSR37, however the repeal will not take effect until June 2009. Until such time as 45CSR37 is repealed, it remains an applicable requirement, therefore the requirement must remain in the permit. The DEP has issued an order, #CO-R37-C-2008-4, holding the requirements of 45CSR37 in abeyance pending resolution of the federal litigation.

40 CFR 64 - Compliance Assurance Monitoring (CAM) - Pleasants Units P1 and P2 have pre-controlled potential emissions that exceed major source thresholds for all criteria pollutants except volatile organic compounds. Willow Island Units W1 and W2 have pre-controlled potential emissions that exceed major source thresholds for all criteria pollutants except carbon monoxide and volatile organic compounds. P1, P2, W1 and W2 do not utilize emission control devices for carbon monoxide, therefore these units are not PSEUs for carbon monoxide. P1, P2, W1 and W2 are subject to the Acid Rain Program and are not PSEUs for nitrogen oxides or sulfur dioxide in accordance with 40 C.F.R. §64.2(b)(1)(iii).

P1, P2, W1 and W2 have pre-controlled potential emissions that exceed major source thresholds for particulate matter (PM). Each unit is equipped with an electrostatic precipitator (ESP) that is used to comply with federally-enforceable emission limits associated with their operation, therefore each unit represents a pollutant specific emissions unit (PSEU). The submitted plans meet the requirements of the CAM rule.

As a general rule, ESP performance improves as total power input increases. This relationship is true when particulate matter and gas stream properties remain stable and all equipment components (such as rappers, plates, wires, hoppers, and transformer-rectifiers) operate satisfactorily. The secondary voltage drops when a malfunction occurs in the ESP. When secondary voltage drops, less particulate is collected. Also, the secondary voltage can remain high but fail to perform its function if the collection plates are not cleaned, or rapped, appropriately. If the collection plates are not cleaned, the current drops. Thus, since the power is the product of the voltage and the current, monitoring power input will provide a reasonable assurance that the ESP is functioning properly. In other words, problems that would be detected by monitoring other parameters individually also will be manifested in the power input.

Allegheny Energy will perform emissions testing to establish the minimum power level that will still demonstrate compliance with the particulate matter weight emission limit. Allegheny Energy will utilize a temporary continuous particulate sampler, the TEOM 7000 Source Particulate Monitor, to collect continuous particulate emission rate information. A detailed description of the CAM testing methodology will be supplied in a CAM testing protocol to be provided to the Department after approval of this CAM plan.

The CAM related testing and CAM plan implementation will be conducted according to the following schedule:

1. Allegheny Energy will submit a CAM testing protocol to the Department within 45 days of the issuance of the Title V Permit.
2. Allegheny Energy will complete the CAM testing within 120 days of the issuance of this permit.
3. Testing results, including the excursion limits, and the generated opacity to particulate matter correlation curve will be submitted to the Department within 45 days after completion of testing.
4. Within 60 days of submittal of the testing results and the generated opacity to particulate correlation curve, Allegheny Energy will begin implementation of the CAM plan.

Monitoring per the CAM Plan is identical for Pleasants Units 1 and 2 and will be as follows:

Units P1 and P2		Indicator No. 1
I.	Indicator	ESP Secondary Power Input
	Monitoring Approach	ESP secondary voltage is measured using a voltmeter and the secondary current is measured using an ammeter. The total power (P) input to the ESP is the sum of the products of secondary voltage (V) and current (I) in each field. ($P = V_1I_1 + V_2I_2$) (permit condition 4.2.2.)
II.	Indicator Range or Designated Condition	An excursion will be defined as a three-hour average ESP secondary power less than (value to be determined based on TEOM 7000 testing) kW.
III.	Performance Criteria	The secondary voltage and current for each ESP field are directly measured using instrumentation integrated in the ESP unit.
	A. Data Representativeness	
	B. Verification of Operational Status	N/A
	C. QA/QC Practices and Criteria	Calibrate, maintain, and operate instrumentation in accordance with manufacturer's specifications. (permit condition 4.2.3.)
	D. Monitoring Frequency	The secondary voltage and current are measured continuously and recorded no less than four times per hour, equally spaced over each hour. (permit condition 4.2.2.)
	Data Collection Procedures	The total secondary ESP power input (in kW) is calculated and recorded in an electronic data acquisition system no less than four times per hour, equally spaced over each hour.. (permit condition 4.4.4.)
	Data averaging periods	3-Hour (permit condition 4.4.4.)

Monitoring per the CAM Plan is identical for Willow Island Units 1 and 2 and will be as follows:

Units W1 and W2		Indicator No. 1	Indicator No. 2
I.	Indicator	Opacity	Calculated TSP Emission Rate
	Monitoring Approach	Opacity data is measured and recorded for each stack by a certified opacity monitoring system. The one minute average opacity data will be used as an input to calculate one minute TSP emission rates. (permit condition 7.2.3.)	The Data Acquisition System (DAS) will be programmed to calculate TSP emissions (lb/hr) from opacity data. The equation used to calculate TSP emissions will be developed using the opacity vs. TSP concentration correlation curves as determined by particulate testing with the TEOM 7000.(permit condition 7.2.4.)
II.	Indicator Range or Designated Condition	Opacity will be used as an input to calculate TSP emissions (see Indicator No. 2).	An excursion will be defined as a 3-hour block average where the calculated TSP emission rate exceeds the limit established in 45CSR§2-4.1.a. (W1 - 31.0 lb/hr, W2 - 80.25 lb/hr) (permit condition 7.2.4.)
III.	Performance Criteria	The COM meets the performance criteria for installation and operation as specified in 40 CFR Part 75.	TSP emissions will be determined from the opacity vs. TSP concentration correlation curves as determined by the TEOM 7000 particulate testing. The details of the proposed TEOM 7000 testing will be provided in a test protocol to be submitted to the Department. The opacity vs. TSP concentration curve will be developed using at least 1,000 paired data points that will attempt to capture a normal full daily cycle of operations. (permit condition 7.2.4.)
	A. Data Representativeness		
	B. Verification of Operational Status	N/A	N/A
	C. QA/QC Practices and Criteria	The COM QA/QC procedures are consistent with the applicable requirements of 40 CFR Part 75. (permit condition 7.2.5.)	The TSP emission data collected by the TEOM 7000 will be validated in accordance with manufacturer's recommendations as approved by EPA in the alternative Reference Method approval letter.(permit condition 7.2.6.)
	D. Monitoring Frequency	Opacity is measured on a continuous basis with the exception of QA/QC periods, monitor malfunction periods and periods where the boiler is off-line (no flame).(permit condition 7.2.3.)	Continuous with the exception periods where the boiler is off-line (no flame). (permit condition 7.2.3.)
	Data Collection Procedures	Opacity data is collected on a continuous basis on a certified DAS (permit condition 7.4.4.)	Calculated TSP emission data will be collected on an hourly basis on a certified DAS (permit condition 7.4.4.)
	Data averaging periods	One minute average data is collected and stored. Hourly averages are calculated and stored based on the minute data.(permit condition 7.4.4.)	TSP will be calculated using one minute average data. The one minute data will be used to calculate a 1-hour block average which will be used to calculate a 3-hour rolling average for comparison with the permit limit.(permit condition 7.4.4.)

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

45CSR10	Pleasants Power Station does not have an SO ₂ weight emission standard.
45CSR§10-8	The auxiliary boilers for both the Pleasants and Willow Island Stations burn natural gas and /or distillate oil and are exempt in accordance with 45CSR§10-10.3.
40 CFR Part 60, Subpart Da	Pleasants Unit 2 Boiler commenced construction prior to September 18, 1978.
40 CFR Part 60, Subpart Db	Pleasants Auxiliary Boilers were constructed prior to June 19, 1984.
40 CFR Part 63, Subpart Q	Pleasants Cooling Towers were constructed and operating prior to September 8, 1994.
40 CFR Part 60, Subpart D	Willow Island Main Boilers were constructed prior to August 17, 1971.
40 CFR Part 60, Subpart Dc	Willow Island Auxiliary Boilers commenced construction prior to June 9, 1989.
40 CFR Part 60, Subpart K, Ka	Pleasants and Willow Island do not have any tanks storing petroleum liquids that were constructed after March 8, 1974 and exceed 40,000 gallons in capacity.
40 CFR Part 60, Subpart Kb	Pleasants and Willow Island do not have any tanks storing volatile organic liquids that exceed 75 m ³ in capacity.
40 CFR Part 60, Subpart OOO	Limestone equipment was in operation prior to August 31, 1983.
40 CFR Part 63, Subpart ZZZZ	Exempt from Reciprocating Internal Combustion Engines MACT and from initial notification in accordance with 40 CFR § 63.6590(b)(3)

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: March 5, 2008

Ending Date: April 4, 2008

All written comments should be addressed to the following individual and office:

Bobbie Scroggie
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Bobbie Scroggie
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1225 • Fax: 304/926-0478

Response to Comments

Fact Sheet:

Determinations and Justifications:

R13-2319A, Condition 4.1.8. (Gypsum Permit): Deleted the last sentence of Paragraph 3, because there is a storage facility onsite (the gypsum dome).

45CSR37: Revised the Fact Sheet to note how WVDEP is proceeding with the Mercury Budget Permit Application since the federal rule was vacated.

CAM:

Revised the third sentence to indicate that P1 and P2 do utilize control devices for NOx. Revised the fourth sentence to indicate P1, P2, W1 and W2 are not PSEUs for nitrogen oxides as well as sulfur dioxide under the Acid Rain Program.

Revised the CAM schedule to allow 60 days instead of 45 days to implement the CAM plan after submitting the test results to DEP. (Also changed in Conditions 4.2.6. and 7.2.7. of the permit)

Permit:

Condition 4.3.1.: Revised the second paragraph to read “Pleasants Units P1 and P2 were last tested in 2007 and will be retested in accordance with the testing cycles of 45CSR2A”.

Condition 4.4.3. Removed reference to condition 4.1.14., as it referred to the coal ash content limit for the main boilers.

Condition 7.4.4. Replaced “on a certified DAS” at the end of the last sentence with “in an electronic data acquisition system”. This revision is consistent with the statement for the Pleasants data collection procedures.