

Fact Sheet



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

Permit Number: **R30-03300015-2009**
Application Received: **March 27, 2008**
Plant Identification Number: **03300015**
Permittee: **Allegheny Energy Supply Company LLC**
Facility Name: **Harrison Power Station**
Mailing Address: **800 Cabin Hill Drive, Greensburg, PA 15601**

Physical Location: Haywood, Harrison County, West Virginia
UTM Coordinates: 557.392 km Easting • 4,359.489 km Northing • Zone 17
Directions: From the junction of State Route 20 and US Route 19 near Haywood, take Route 20 approximately one mile west to the facility.

Facility Description

The Harrison Power Station is a fossil fuel fired electric generation facility with three 640 MW units and operates under Standard Industrial Classification (SIC) code 4911. The facility consists of three (3) 6396 mmBtu/hr coal-fired boilers, two (2) 202 mmBtu/hr natural gas auxiliary boilers, two (2) 1000 KW and one (1) 350 KW diesel-fired emergency generators, Boiler related Lime handling and sludge system 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.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2006 Actual Emissions
Carbon Monoxide (CO)	1,885	1,353
Nitrogen Oxides (NO _x)	42,068	19,386
Particulate Matter (PM ₁₀)	4,164	1,785

Total Particulate Matter (TSP)	7,500	3,217
Sulfur Dioxide (SO ₂)	426,609	4,766
Volatile Organic Compounds (VOC)	249	109
<i>PM₁₀ is a component of TSP.</i>		
Hazardous Air Pollutants	Potential Emissions	2006 Actual Emissions
Antimony	0.03	0.01
Arsenic	0.56	0.19
Beryllium	0.03	0.01
Cadmium	0.09	0.03
Chromium	0.82	0.31
Cobalt	0.21	0.07
Manganese	0.92	0.39
Mercury	0.23	0.20
Nickel	0.97	0.33
Selenium	2.37	1.83
Hydrochloric Acid (HCl)	88.3	72.5
Hydrogen Fluoride (HF)	30.3	23.5
Polycyclic Aromatic Compounds	0.22	0.14
Acetaldehyde	1.97	1.54
Acrolein	1.00	0.78
Benzene	4.51	3.60
Benzyl Chloride	2.42	1.89
Cyanide Compounds	8.66	6.74
Formaldehyde	14.12	4.46
Isophorone	2.01	1.56
Methyl Bromide	0.55	0.45
Methyl Chloride	1.84	1.43
Methyl Ethyl Ketone	1.35	1.05
Methyl Hydrazine	0.59	0.46
Methylene Chloride	1.00	0.78
Propionadlehyde	1.32	1.03

Toluene	0.83	0.65

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

Title V Program Applicability Basis

This facility has the potential to emit 426,609 tons per year of SO₂, 42,068 tons per year of NO_x, 4,164 tons per year PM₁₀, 1,885 tons per year CO, over 88 tons per year of Hydrochloric Acid, and over 165 tons per year of total HAP’s. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, 10 tons per year of HAP’s, and over 25 tons per year of total HAP’s, Harrison 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 from indirect heat exchangers
	45CSR6	Open burning prohibited.
	45CSR7	Control of Particulate from Manufacturing Source Operations
	45CSR10	Control of sulfur dioxide emissions from in direct heat exchangers
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permit for construction, modification
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR33	Acid Rain Provisions and Permits
	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. 74	Sulfur dioxide Opt-ins
	40 C.F.R. 75	Continuous Emissions Monitoring
	40 C.F.R. 76	Nitrogen Oxides Reduction Program
	40 C.F.R. 77	Excess Emissions
	40 C.F.R. Subpart Y	Coal Preparation Plants
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR39	NO _x Annual Trading Program
	45CSR40	NO _x Ozone Season Trading Program
	45CSR41	SO ₂ Trading Program

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 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>)
Consent Order	6/29/1978	
R13-1477B	6/3/2003	
Harrison NOx Budget Permit	10/30/01	
R33-3944-2012-3	1/1/2008	
R37-C-2008-4	4/7/2008	

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

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

PM testing in accordance with Permit Condition 4.3.1. for Unit B1 shall be on or before February 1, 2009. Testing for Units B2 and B3 shall be before November 19, 2009.

The Permittee submitted a request to revise the Rule 2 monitoring plan dated October 22, 2003, requesting an exemption for Method 9 monitoring when using natural gas as a fuel for the auxiliary boilers. 45CSR§2-8.4.b does grant an exemption for Rule 2 monitoring for units that only burn natural gas. As these boilers may burn either oil or natural gas, Conditions 4.1.2 and 4.2.1 have been revised to allow an exemption for the auxiliary fuel boilers from Method 9 monitoring if oil is not burned during the calendar month. The company, however, by keeping natural gas records and hours of operation for these boilers, will demonstrate that natural gas was the only fuel used during such times when Method 9 is not being used.

State Rule 45CSR37 became effective and were incorporated into the permit as Condition 3.1.11. 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.

After a review of the equipment table, it was determined that the Conveyor C-11 was built after 9/7/1977, and that it conveyed coal from the crusher, so it was subject to 40 CFR Subpart Y. This conveyor has been added to the conditions in Section 8.

40 CFR 64 - Compliance Assurance Monitoring (CAM) – Harrison Units B1, B2, and B3 have controlled potential emissions that exceed major source thresholds for all criteria pollutants except volatile organic compounds. These units do not utilize emission control devices for carbon monoxide, therefore these units are not PSEUs for carbon monoxide. The units 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). The units 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.

In an ESP, electric fields are established by applying direct-current voltage across a pair of electrodes, a discharge electrode and a collection electrode. Particulate matter suspended in the gas stream is electrically charged by passing through the electric field around each discharge electrode (the negatively charged electrode). The negatively charged particles then migrate toward the positively charged collection electrodes. The particulate matter is separated from the gas stream by retention on the collection electrode. Particulate matter is removed from the collection plates by shaking or rapping the plates.

As a general rule, ESP performance improves as total power input increases. This relationship is true when particulate matter and gas stream properties (such as PM concentration, size distribution, resistivity, and gas flow rate) remain stable and all equipment components (such as rappers, plates, wires, hoppers, and transformer-rectifiers) operate satisfactorily.

The secondary voltage drops when a malfunction, such as grounded electrodes, 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.

A calculated 3-hour block average ESP power level less than the minimum acceptable level established during the CAM testing will constitute an excursion of the CAM plan. An excursion does not mean that an emission limit violation has occurred; just that the calculated value is outside the established indicator range.

In the event of an excursion, a station operator will evaluate the occurrence and determine the procedures necessary to correct the condition. In addition to correction the condition, the operator will also ensure that the following recordkeeping and reporting requirements are met:

1. Time of day and duration of any CAM plan excursion and resulting corrective actions will be recorded.
2. A list of all CAM plan excursions, their durations and corrective actions will be reported in the applicable semiannual deviation reports as required by the Title V permit. These deviation reports are to be submitted to the Department.

The emission unit is not required to monitor opacity on a continuous basis. As a result, an alternative monitoring method that does not rely on opacity is being proposed for this CAM plan. The total power input for each ESP will be used as the primary indicator for monitoring ESP performance. Allegheny Energy will perform emissions testing to establish the minimum power level that will still demonstrate compliance with the 316.25 lb/hr particulate 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 shall submit a CAM testing protocol to the Department 30 days prior to CAM testing.
2. Allegheny Energy shall 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 shall be submitted to the Department within 45 days after completion of testing.

4. Within 180 days of issuance of this permit, Allegheny Energy shall begin implementation of the CAM plan.

Monitoring per the CAM Plan is identical for Harrison Units B1, B2, and B3 and will be as follows:

	Indicator No. 1	Indicator No. 2
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. ($P = V_1I_1 + V_2I_2$) <i>Condition 4.2.2.</i>	
Indicator Range	An excursion will be defined as a three-hour average ESP secondary power is less than TBD kW. (value to be determined based on TEOM 7000 testing)	
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. <i>Condition 4.2.3.</i>	
D. Monitoring Frequency	The secondary voltage and current are measured continuously and will be recorded no less than four times per hour. <i>Condition 4.2.2.</i>	
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. <i>Condition 4.4.3.</i>	
Averaging Period	Three hour rolling average <i>Condition 4.4.3.</i>	

Non-Applicability Determinations

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

1. 45CSR7 - *To prevent and control PM air pollution from manufacturing processes and associated operations*
 The facility uses solid urea in their Selective Catalytic Reduction controls to reduce NOx. Baghouses 29C through 36C are used to control urea as particulate matter. However, the facility does not manufacture urea, nor does it use urea in a manufacturing process, so these baghouses are not subject to Rule 7.
2. 45CSR27 – *To prevent and control the emissions of Toxic Air Pollutants*
 Although this facility has emissions of Toxic Air Pollutants in excess of the thresholds listed in 45CSR27 Table A, it does not meet the definition of a Chemical Processing Unit. There is not an assembly of reactors, tanks, distillation columns, heat exchangers, vaporizers, compressors, dryers, decanters, and/or other equipment used to treat, store, manufacture, or use toxic air pollutants. Therefore the facility is not subject to the requirements of Rule 27.
3. 45CSR10 – *Control of sulfur dioxide emissions from in direct heat exchangers*
 The emergency diesel generators EDG1, EDG2, and EDG3 have been determined not to be subject to 45CSR§10-4.1. As such, the sulfur dioxide concentration requirements have been removed from this permit.

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: October 25, 2008
Ending Date: November 24, 2008

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

Mike Egnor
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

Mike Egnor
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1208 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

Condition 4.2.6.3 has been changed from “opacity to particulate matter correlation” to “ESP power to particulate matter correlation”. The facility uses an electrostatic precipitator as a control device, and uses the power input to the ESP as a correlation to particulate matter.

The next test date for Unit B3 given in Condition 4.3.1 has been changed from November 19, 2008 to November 19, 2009. After a 86% test result of actual vs. permit limits for particulate matter in 2004, the next two tests resulted in measurements of 39% and 62%. These measurements are below 80%, so the next testing date for the company is November 19, 2009. The next test date for Unit B2 given in Condition 4.3.1 has been changed to November 7, 2009. The facility did perform a stack test on November 7, 2008. However, the final results from that test have not been received yet. Irregardless of the results, the facility is required to perform an additional test on November 7, 2009.

On December 23, 2008, the U.S. Court of Appeals for the D.C. Circuit decided to remand to EPA without vacature the Clean Air Interstate Rule (CAIR). As such, these Conditions (3.1.12 through 3.1.14) have been added to the permit.

The CAM plan was required to be implemented within 180 days of the issuance of the Permit. Condition 4.2.6 has been revised to achieve the 180 day requirement.