

Fact Sheet



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

Permit Number: **R30-03900006-2009**

Application Received: **December 8, 2008**

Plant Identification Number: **03-054-039-00006**

Permittee: **Appalachian Power Company (d.b.a. American Electric Power)**

Facility Name: **Kanawha River Plant**

Mailing Address: **1 Riverside Plaza, Columbus, Ohio 43215**

Physical Location: Glasgow, Kanawha County, West Virginia
UTM Coordinates: 462.96 km Easting • 4228.62 km Northing • Zone 17
Directions: From Charleston take Interstate 77 South [I-64 East] and take Exit 85.
Travel across the bridge crossing the Kanawha River and turn right onto
US 60 towards Cedar Grove for approximately 5 miles to Glasgow.
Facility is located on the right approximately ½ mile east of Glasgow.

Facility Description

The Kanawha River Plant is a fossil fuel fired electric generation facility and operates under Standard Industrial Classification (SIC) code 4911. The facility consists of two (2) coal-fired steam generators with a rated design capacity of 1950 mmBtu/hr each, 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]		
Criteria Pollutants	Potential Emissions	2006 Actual Emissions
Carbon Monoxide (CO)	1,355	207.5
Nitrogen Oxides (NO _x)	16,910	3,906.9
Particulate Matter (PM ₁₀) ¹	588	Unavailable
Total Particulate Matter (TSP)	899	132.1 ²
Sulfur Dioxide (SO ₂)	27,331	13,674.3
Volatile Organic Compounds (VOC)	298	25.0

1. PM₁₀ is a component of TSP.

2. VOC contains 0.725 ton of HAPs, which are all the HAPs listed below, with the exceptions of Cobalt, Selenium, HCl and HF.

Hazardous Air Pollutants	Potential Emissions	2006 Actual Emissions
Arsenic	1.64	0.05
Beryllium	3.9	0.0045
Chromium	0.58	0.19
Cobalt	0.21	Unavailable
Manganese	1.1	0.2
Mercury	0.51	0.04
Nickel	0.49	0.2
Selenium	14.1	Unavailable
Hydrogen Chloride	3,596	900
Hydrogen Fluoride	312	50

Actual emissions are reproduced from the 2007 Certified Emissions Statement Invoice, and are the emissions from January 1, 2006 through December 31, 2006.

Title V Program Applicability Basis

This facility has the potential to emit 1,355 tpy of CO; 16,910 tpy of NO_x; 899 tpy of TSP; 27,331 tpy of SO₂; 298 tpy of VOC; 14.1 tpy of Selenium; 3,596 tpy of HCl; and 312 tpy of HF. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, Appalachian Power Company's Kanawha River Plant 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.
	45CSR10	Control of sulfur dioxide emissions from indirect heat exchangers.
	45CSR11	Standby plans for emergency episodes.
	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
	45CSR38	Determination of Compliance With Air Quality Management Rules
	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.
	45CSR37	Mercury Budget Trading Program to Reduce Mercury Emissions

45CSR39	Control of Annual Nitrogen Oxide Emissions to Mitigate Interstate Transport of Fine Particulate Matter and Nitrogen Oxides
45CSR40	Control of Ozone Season Nitrogen Oxide Emissions to Mitigate Interstate Transport of Ozone and Nitrogen Oxides
45CSR41	Control of Annual Sulfur Dioxide Emissions to Mitigate Interstate Transport of Fine Particulate Matter and Sulfur Dioxide
WVDAQ Letter	Letter dated September 3, 2002 addressed to Mr. Greg Wooten and signed by Jesse D. Adkins regarding the thermal decomposition of boiler cleaning solutions.
WVDAQ Letter	Letter dated January 21, 2004 addressed to Mr. Frank Blake and signed by Jesse D. Adkins regarding the combustion of Demineralizer Resins.

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, 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>)
Phase II Acid Rain Permit # R33-3936-2012-3	12/18/2007	This permit is effective from January 1, 2008 to December 31, 2012
Phase II NOx Compliance Plan	12/19/2006	
CO-R37-C-2008-4	4/07/2008	

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

Wherever the language “current permit” is used throughout this Fact Sheet, it is in reference to Title V operating permit R30-03900006-2004 (RE01), unless otherwise noted.

Boilers and associated equipment

45CSR2 – To Prevent and Control Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers

Retest discussion in condition 4.3.1. has been replaced with updated retest dates and the resulting retest frequency. The rows for initial baseline testing have been removed in the table of permit condition 4.3.1. since this testing has been performed and is not an ongoing requirement.

45CSR10 – To Prevent and Control Air Pollution from the Emission of Sulfur Oxides

The current permit contains a variance condition (4.0.1.b.) that refers to an SO₂ limit pursuant to 45CSR§10-3.3.f. for auxiliary boilers. According to 1/7/2009 technical correspondence received from the permittee, there are no auxiliary boilers in addition to Units 1 and 2. The permittee stated in that correspondence that in addition to coal, Units 1 and 2 are capable of combusting fuel oil; thus, separate auxiliary boilers are not present at this facility. In order to clarify this, permit condition 4.1.1.b. has been altered to refer to “the boilers” (rather than “the auxiliary boilers”), and the applicable limit citation referenced within the condition has been corrected to be 45CSR§10-3.2.b. Also, a reference to the permit condition that sets forth the SO₂ limit has been added for clarity.

The permittee submitted a pre-draft comment (3/27/2009 email) requesting that condition 4.5.2. also refer to section II.A.4. of the approved “45CSR2 and 45CSR10 Monitoring Plan.” This reference was added to the condition, and the corresponding 45CSR10 authority was also added to the citation.

45CSR2A and 45CSR10A Monitoring and Recordkeeping Plan

The Rules 2 and 10 monitoring and recordkeeping plan was submitted in the application in PDF electronic format. The electronic file was identified as revision 3.1. The plan is included in the Title V permit as Appendix A.

45CSR30 – Operating Permit Requirements

Recordkeeping language was added at the end of permit conditions 4.1.2. and 4.1.3. regarding thermal decomposition of boiler cleaning solutions and combustion of demineralizer resins, respectively. The authority to require the recordkeeping was also added to the citation.

According to 3/27/2009 technical correspondence received from the permittee, the year of installation should be changed for the Barge Unloader (Em. Unit ID# BU) from 1953 to 2008 in the emission units table in permit subsection 1.1. This reflects the replacement of the clam shell unloader with an E-crane (i.e., equilibrium crane), which did not increase emissions since the rate of unloading did not change nor were any equipment added that would increase emissions. The change did not increase the hourly rate capacity of the system nor is the barge unloader an affected facility that crushes or grinds coal as defined in 40 C.F.R. 60 Subpart Y. An internal review performed by the permittee determined that no permit was required for the change.

45CSR33 – Acid Rain Provisions and Permits

The most recent Phase II Acid Rain permit R33-3936-2012-3 was issued on December 18, 2007. This permit, along with the application, Phase II NO_x Compliance Plan, and Phase II NO_x Averaging Plan, are included in the permit as Appendix B.

45CSR34 – Emission Standards for Hazardous Air Pollutants

This rule now adopts standards under 40 C.F.R. Part 61, and 45CSR15 was repealed. The citation of 45CSR15 has been replaced with 45CSR34 in condition 3.1.3.

45CSR37 – Mercury Budget Trading Program to Reduce Mercury Emissions

Compliance Order # CO-R37-C-2008-4

In response to the federal Clean Air Mercury Rule (CAMR), West Virginia enacted 45CSR37, which became effective on May 1, 2006 (after the current Title V was issued). The Title V permit was reopened (permit action RE01) to insert the CAMR (and CAIR) requirements, and the revised permit was issued on October 30, 2007.

On February 8, 2008, the federal CAMR rule was vacated, and on March 24, 2008, U.S. EPA appealed the decision. The federal CAMR rule is still subject to pending litigation and 45CSR37, although not vacated by the court, is intrinsically tied to the provisions of the federal CAMR program; therefore, the Compliance Order CO-R37-C-2008-4 holds certain permitting requirements in abeyance pending resolution of ongoing CAMR litigation or until other final action is taken. Details concerning 45CSR37 and the CAMR permit condition are set forth in the Director’s April 7, 2008 cover letter to Mr. John M. McManus with the compliance order, which is included with the permit as Appendix F.

An explanatory note has been placed at the end of the CAMR permit condition indicating that certain requirements are held in abeyance. With the exception of the first sentence, the explanatory language is identical to that written in the draft Title V renewal permit for the Mitchell Plant (DAQ ID# 051-00005), which was requested by the permittee in their pre-draft comments concerning the Mitchell facility’s Title V renewal.

CAIR Rules 45CSR39, 45CSR40, and 45CSR41 (State-enforceable only)

The Title V permit was reopened (permit action RE01) to insert the CAIR requirements and the revised permit was issued on October 30, 2007. 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 (3.1.13. through 3.1.15.) have been maintained in the permit renewal. The CAIR application is also maintained with the permit (Appendix E).

The CAIR rules 45CSR39 and 45CSR40 effectively provide a budget trading program for the control and reduction of the pollutant NOx emitted from affected sources. Historically, this pollutant has been regulated under rules 45CSR1 (NOx Budget Trading program for non-EGUs) and 45CSR26 (NOx Budget Trading program for EGUs). Since the CAIR rules are providing the NOx regulation, rules 45CSR1 and 45CSR26 are no longer necessary and will be repealed effective May 1, 2009.

40 C.F.R. Part 64 – Compliance Assurance Monitoring

The permittee submitted a CAM plan in the renewal application for Units 1 and 2 to assure compliance with the 45CSR§2-4.1.a. PM mass limitation, which is 195.0 lb/hr aggregated from the two units through a combined emission point CS012. Unit 1 and Unit 2 are both pollutant-specific emission units (PSEUs) for the purposes of CAM, and particulate matter is the affected pollutant. The PM emissions of Unit 1 and Unit 2 are controlled by electrostatic precipitators (ESPs) identified as ESP 1 and ESP 2. These control devices have 100% capture efficiency, and provide 99.8% design control efficiency for particulate matter. Furthermore, the potential pre-control emissions of PM from each PSEU are greater than the major source threshold for PM. Thus, both PSEUs meet all three CAM applicability criteria given under 40 C.F.R. §§64.2(a)(1)-(3). Table 1 below summarizes the CAM plan.

Table 1 – CAM Plan Summary for Units 1 & 2 PM Emissions Controlled by ESPs 1 & 2

Elements of the CAM Plan	Indicator No. 1 of 2
I. GENERAL CRITERIA	Opacity
Monitoring Approach	Opacity is continuously measured and recorded by a certified opacity monitoring system (4.2.2.).
Indicator Range	The indicator range is zero to 10% opacity, and will be verified by testing (4.2.5.). Monitoring shall be implemented within 180 days of issuance of this renewal permit (4.2.5.(c)). Continuously measured opacity values are reduced to six-minute block averages (4.2.4.(a)). These 6-minute averages are averaged into 3-hour block average opacity values (4.2.4.(c)). An

Elements of the CAM Plan	Indicator No. 1 of 2
QIP threshold	excursion is defined as two consecutive 3-hour block averages greater than 10% (4.2.6.(c)). Excursions trigger an inspection, evaluation, and corrective action (4.2.7.). Excursions are also included in the recordkeeping (4.4.4.), and reporting requirements (4.5.6.).
	If five (5) percent or greater of the 3-hour average COMS opacity values indicate excursions during a calendar quarter, the permittee must develop a QIP (4.2.9.(2)).
II. PERFORMANCE CRITERIA Specifications for obtaining representative data	The location of the opacity monitors is in accordance with 40 C.F.R. 60, Appendix B, Performance Specification 1 (PS-1). The COMS was installed in accordance with PS-1. Therefore, the employed COMS must be used to comply with CAM (see §64.3(d)(1)), and §§64.3(a) and (b) are automatically satisfied when COMS is used (see §64.3(d)(2)(ii)). Refer to condition 4.2.2.
Verification of Operational Status	The COMS is not <i>new or modified monitoring equipment</i> ; therefore, verification of operational status pursuant to §64.3(b)(2) is not applicable.
QA/QC Practices and Criteria	The COMS was installed and evaluated in accordance with PS-1. Zero and span drift are checked daily, and filter audits are performed in accordance with PS-1. §64.3(b)(3) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii). Refer to condition 4.2.2.
Monitoring frequency	The monitoring frequency is continuous (4.2.2., 4.2.10.). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).
Data Collection Procedure	The data are collected by a computerized data acquisition and handling system (DAHS). This system collects and retains all relevant opacity data (4.2.2., 4.4.4.). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).
Averaging Period	The averaging period is on a six-minute block basis (4.2.4.a.). These 6-minute averages are averaged into 3-hour block average opacity values (4.2.4.c.). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).

40 C.F.R. Part 64 is not applicable to any monitoring for the following pollutants emitted by PSEUs Unit 1 and Unit 2:

Carbon monoxide

The Units 1 and 2 are not subject to CAM for carbon monoxide (CO) because the units are not subject to an emission limitation or standard for CO (cf. 40 C.F.R. §64.2(a)(1)). Additionally, the units do not use a control device to control CO emissions (cf. 40 C.F.R. §64.2(a)(2)).

Oxides of Nitrogen

The Units 1 and 2 are not subject to CAM for oxides of nitrogen (NOx) because such emissions from the units are subject to emission standards (i.e., 45CSR26) that apply solely under an emissions trading program that has been approved by the Administrator for NOx (cf. 40 C.F.R. §64.2(b)(1)(iv)).

Sulfur Dioxide

The Units 1 and 2 are not subject to CAM for sulfur dioxide (SO2) because the units are subject to emission standards prescribed by an Acid Rain Program pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act (cf. 40 C.F.R. §64.2(b)(1)(iii)).

Volatile Organic Compounds

The Units 1 and 2 are not subject to CAM for volatile organic compounds (VOC) because the units are not subject to an emission limitation or standard for VOC (cf. 40 C.F.R. §64.2(a)(1)). Additionally, the units do not use a control device to control VOC emissions (cf. 40 C.F.R. §64.2(a)(2)).

Hazardous Air Pollutants

The Units 1 and 2 are not subject to CAM for hazardous air pollutants (HAPs) because the units are not subject to an emission limitation or standard for HAPs (cf. 40 C.F.R. §64.2(a)(1)).

Other general CAM requirements are set forth in permit subsections 4.2., 4.3., 4.4., and 4.5.

Coal and Ash Handling

Permit condition 5.1.1. was revised to refer to condition 3.1.11. Current permit condition 5.2.1. has been written as condition 5.4.1. in the renewal permit since it is a recordkeeping condition, rather than a monitoring condition. Condition 5.4.1. was also reworded for clarification.

Non-Applicability Determinations

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

- a. **45CSR1 – *NO_x Budget Trading Program As A Means Of Control And Reduction Of Nitrogen Oxides From Non-Electric Generating Units.*** The Kanawha River Plant does not have any fossil fuel-fired “Non-Electric Generating Units” as defined in 45CSR§1-4.1.b. Furthermore, this rule will be repealed as of May 1, 2009.
- b. **45CSR5 – *To Prevent And Control Air Pollution From The Operation Of Coal Preparation Plants, Coal Handling Operations And Coal Refuse Disposal Areas.*** The Kanawha River Plant is subject to the requirements of 45CSR2 and is therefore exempt from the provisions of 45CSR5 as outlined in 45CSR§§5-2.4.b. and 2.14.
- c. **45CSR17 – *To Prevent And Control Particulate Matter Air Pollution From Materials Handling, Preparation, Storage And Other Sources Of Fugitive Particulate Matter.*** The Kanawha River Plant is subject to the fugitive particulate matter emission requirements of 45CSR2 and is therefore exempt from the provisions of 45CSR17 as outlined in 45CSR§17-6.1.
- d. **40 C.F.R. 60 Subpart D – *Standards of Performance for Fossil-Fuel-Fired Steam Generators for which Construction is Commenced After August 17, 1971.*** Kanawha River’s steam generators commenced construction prior to 1971.
- e. **40 C.F.R. 60 Subpart Da – *Standards of Performance for Electric Utility Steam Generating Units for which Construction is Commenced After September 18, 1978.*** Kanawha River’s steam generators commenced construction prior to September 18, 1978.
- f. **40 C.F.R. 60 Subpart K – *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior May 18, 1978.*** The facility does not include storage vessels that are used to store petroleum liquids (as defined in 40 C.F.R. §60.111(b)) and that have a storage capacity greater than 40,000 gallons for which construction, reconstruction or modification was commenced after June 11, 1973 and prior to May 19, 1978.
- g. **40 C.F.R. 60 Subpart Ka – *Standards of Performance for Storage Vessels for Petroleum Liquids for which Construction, Reconstruction, or Modification Commenced After May 18, 1978 and Prior to July 23, 1984.*** The facility does not include storage vessels that are used to store petroleum liquids (as defined in 40 C.F.R. §60.111a(b)) and that have a storage capacity greater than 40,000 gallons for which construction, reconstruction or modification was commenced after May 18, 1978 and prior to July 23, 1984.

- h. **40 C.F.R. 60 Subpart Kb – Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for which Construction, Reconstruction, or Modification Commenced after July 23,1984.** Storage vessels potentially affected by this rule are exempted because they contain liquids with a maximum true vapor pressure of less than 3.5 kPa, have a storage capacity of less than 75 cubic meters, or have not commenced construction, reconstruction or modification after July 23, 1984.
- i. **40 C.F.R. 60 Subpart Y – Standards of Performance for Coal Preparation Plants.** The coal handling equipment potentially affected by this rule has not been constructed or modified after October 24, 1974.
- j. **40 C.F.R. 63 Subpart Q – National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers.** The facility does not include industrial process cooling towers that have operated with chromium-based water treatment chemicals on or after September 8, 1994.
- k. **40 C.F.R. 63 Subpart ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.** The diesel fire pump (Em. Unit ID# Pump Engine 1; Em. Pt. ID# PE1) at this facility is considered an existing compression ignition RICE and is not subject to the requirements of this subpart per 40 C.F.R. §63.6590(b)(3).
- l. **45CSR7 – To Prevent and Control Particulate Matter Air Pollution from Manufacturing Processes and Associated Operations.** Since the facility is subject to 45CSR2, 45CSR§7-10.1. provides an exemption from 45CSR7.

Note that 45CSR7 is the only non-applicability determinations added to section 3.7.2. of the renewal permit. The others (with exception of 45CSR1) were copied directly from the listing found in 3.6.2.a. through k. of the current permit. The exception with the 45CSR1 non-applicability determination is that it has language added indicating that this rule will be repealed effective May 1, 2009.

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: April 9, 2009

Ending Date: May 9, 2009

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

Denton B. McDerment, P.E.
Title V Permit Engineer
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

Denton B. McDerment, P.E.
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1221 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

- No comments were received from U.S. EPA.
- The only public comment received was submitted by the permittee on May 8, 2009, via electronic mail to the permit writer. A “hard copy” of the comment was later submitted, and was received by DAQ on May 13, 2009. The permittee’s comment reads as follows:

Condition 4.2.4.c. – This section may have a typographical error. We recommend removing the word “of” from the fourth sentence in this part. It is recommended to read “*Data availability shall be at least ~~of~~ 50% of the operating...*”

The change has been made as requested.