



Phase II Acid Rain Permit

Plant Name: Kanawha River Power Station		Permit #: R33-3936-2012-3A
Affected Unit(s): 1, 2		
Operator: Appalachian Power Company		ORIS Code: 3936
Effective Date	From: January 1, 2008	To: December 31, 2012

Contents:

1. Statement of Basis.
2. SO₂ allowances allocated under this permit and NO_x requirements for each affected unit.
3. Comments, notes and justifications regarding permit decisions and changes made to permit application forms during the review process, and any additional requirements or conditions.
4. The permit application forms submitted for this source, as corrected by the West Virginia Division of Air Quality. The owners and operators of the source must comply with the standard requirements and special provisions set forth in the application.

1. Statement of Basis

Statutory and Regulatory Authorities: In accordance with W. Va. Code §22-5-4(a)(16) and Titles IV and V of the Clean Air Act, the West Virginia Department of Environmental Protection, Division of Air Quality issues this permit pursuant to 45CSR33 and 45CSR30.

Permit Approval

John A. Benedict, Director
Division of Air Quality

Date

West Virginia Department of Environmental Protection • Division of Air Quality

Plant Name: Kanawha River Power Station	Permit #: R33-3936-2012-3A
--	-----------------------------------

2. SO₂ Allocations and NO_x Requirements for each affected unit

Unit No. 1

SO₂ Allowances	Year				
	2008	2009	2010	2011	2012
Table 2 allowances, as adjusted by 40CFR Part 73	4462*	4462*	3981	3981	3981
Repowering plan allowances	N/A	N/A	N/A	N/A	N/A

The number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. The aforementioned condition does not necessitate a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR §72.84). *Note: 2008 and 2009 allowances are the sum of Column "(B)" and Column "(C)" of Table 2 of 40CFR§73.10

NO_x Requirements	2008	2009	2010	2011	2012
NO_x Limit (lb/mmBtu)	0.80	0.80	0.80	0.80	0.80

Pursuant to 40 CFR §76.11, the West Virginia Department of Environmental Protection, Division of Air Quality approves four (4) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2008, 2009, 2010 and 2011. Under each plan, the unit's NO_x emissions shall not exceed the annual alternative contemporaneous emission limitation (ACEL) of 0.80 lb/mmBtu.

2012 Permit modification:

Pursuant to 40 CFR 76.11, the West Virginia Department of Environmental Protection, Division of Air Quality approves a NO_x emissions averaging plan for this unit. The plan is effective for the calendar year 2012. Under the plan, the unit's NO_x emissions shall not exceed the annual alternative contemporaneous emission limitation (ACEL) of 0.80 lb/mmBtu.

Under the plan, the actual Btu-weighted annual average NO_x emission rate for the units in the plan shall be less than or equal to the Btu-weighted annual average NO_x emission rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emission limitations under 40 CFR §76.5, 76.6 or 76.7, except that for early election units, the applicable emission limitations shall be under 40 CFR §76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR §76.11(d)(1)(ii)(A)) is met for a year under the plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emission limitation and annual heat input limit.

In accordance with 40 CFR §72.40(b)(2), approval of the averaging plan shall be final only when the Arkansas Department of Environmental Quality, Air Division, Indiana Department of Environmental Management, Office of Air Quality, the Kentucky Department for Environmental Protection, Division of Air Quality, the Ohio Environmental Protection Agency, Division of Air Pollution Control the Oklahoma Department of Environmental Quality, Air Quality Division, Virginia Department of Environmental Quality, Division of Air Quality and the Texas Commission on Environmental Quality, Office of Air have also approved this averaging plan.

In addition to the described NO_x compliance plans, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.

3. Comments, notes and justifications regarding decisions, and changes made to the permit application forms during the review process:

A permit modification application requesting Phase II NO_x Averaging Plan for the year 2012 was received on December 22, 2011 for the year 2012. This permit modification incorporates the requested change.

4. Permit application forms:

Attached.

West Virginia Department of Environmental Protection • Division of Air Quality

Plant Name: Kanawha River Power Station	Permit #: R33-3936-2012-3A
--	-----------------------------------

2. SO₂ Allocations and NO_x Requirements for each affected unit

Unit No. 2

SO ₂ Allowances	Year				
	2008	2009	2010	2011	2012
Table 2 allowances, as adjusted by 40CFR Part 73	4291*	4291*	3545	3545	3545
Repowering plan allowances	N/A	N/A	N/A	N/A	N/A

The number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. The aforementioned condition does not necessitate a revision to the unit SO₂ allowance allocations identified in this permit (See 40 CFR §72.84). *Note: 2008 and 2009 allowances are the sum of Column "(B)" and Column "(C)" of Table 2 of 40CFR§73.10

NO _x Requirements	2008	2009	2010	2011	2012
NO_x Limit (lb/mmBtu)	0.80	0.80	0.80	0.80	0.80

Pursuant to 40 CFR §76.11, the West Virginia Department of Environmental Protection, Division of Air Quality approves four (4) NO_x emissions averaging plans for this unit. Each plan is effective for one calendar year for the years 2008, 2009, 2010 and 2011. Under each plan, the unit's NO_x emissions shall not exceed the annual alternative contemporaneous emission limitation (ACEL) of 0.80 lb/mmBtu.

2007 Permit modification:

2012 Permit modification:

Pursuant to 40 CFR 76.11, the West Virginia Department of Environmental Protection, Division of Air Quality approves a NO_x emissions averaging plan for this unit. The plan is effective for the calendar year 2012. Under the plan, the unit's NO_x emissions shall not exceed the annual alternative contemporaneous emission limitation (ACEL) of 0.80 lb/mmBtu.

Under the plan, the actual Btu-weighted annual average NO_x emission rate for the units in the plan shall be less than or equal to the Btu-weighted annual average NO_x emission rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emission limitations under 40 CFR §76.5, 76.6 or 76.7, except that for early election units, the applicable emission limitations shall be under 40 CFR §76.7. If the designated representative demonstrates that the requirement of the prior sentence (as set forth in 40 CFR §76.11(d)(1)(ii)(A)) is met for a year under the plan, then this unit shall be deemed to be in compliance for that year with its alternative contemporaneous annual emission limitation and annual heat input limit.

In accordance with 40 CFR §72.40(b)(2), approval of the averaging plan shall be final only when the Arkansas Department of Environmental Quality, Air Division, Indiana Department of Environmental Management, Office of Air Quality, the Kentucky Department for Environmental Protection, Division for Air Quality, the Ohio Environmental Protection Agency, Division of Air Pollution Control the Oklahoma Department of Environmental Quality, Air Quality Division, Virginia Department of Environmental Quality, Division of Air Quality and the Texas Commission on Environmental Quality, Office of Air have also approved this averaging plan.

In addition to the described NO_x compliance plans, this unit shall comply with all other applicable requirements of 40 CFR Part 76, including the duty to reapply for a NO_x compliance plan and requirements covering excess emissions.

3. Comments, notes and justifications regarding decisions, and changes made to the permit application forms during the review process:

A permit modification application requesting Phase II NO_x Averaging Plan for the year 2012 was received on December 22, 2011 for the year 2012. This permit modification incorporates the requested change.

4. Permit application forms:

Attached



Phase II NO_x Compliance Plan

For more information, see instructions and refer to 40 CFR 76.9

Page **1** of **2**

This submission is: New Revised

STEP 1
Indicate plant name, State,
and ORIS code from NADB,
if applicable

Kanawha River	WV	3936
Plant Name	State	ORIS Code

STEP 2

Identify each affected Group 1 and Group 2 boiler using the boiler ID# from NADB, if applicable. Indicate boiler type: "CB" for cell burner, "CY" for cyclone, "DBW" for dry bottom wall-fired, "T" for tangentially fired, "V" for vertically fired, and "WB" for wet bottom. Indicate the compliance option selected for each unit.

1	2				
ID#	ID#	ID#	ID#	ID#	ID#
V	V				
Type	Type	Type	Type	Type	Type

(a) Standard annual average emission limitation of 0.50 lb/mmBtu (for Phase I dry bottom wall-fired boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(b) Standard annual average emission limitation of 0.45 lb/mmBtu (for Phase I tangentially fired boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(c) EPA-approved early election plan under 40 CFR 76.8 through 12/31/07 (also indicate above emission limit specified in plan)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(d) Standard annual average emission limitation of 0.46 lb/mmBtu (for Phase II dry bottom wall-fired boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(e) Standard annual average emission limitation of 0.40 lb/mmBtu (for Phase II tangentially fired boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(f) Standard annual average emission limitation of 0.68 lb/mmBtu (for cell burner boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(g) Standard annual average emission limitation of 0.86 lb/mmBtu (for cyclone boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(h) Standard annual average emission limitation of 0.80 lb/mmBtu (for vertically fired boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(i) Standard annual average emission limitation of 0.84 lb/mmBtu (for wet bottom boilers)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(j) NO_x Averaging Plan (include NO_x Averaging form)

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(k) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(A) (check the standard emission limitation box above for most stringent limitation applicable to any unit utilizing stack)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(l) Common stack pursuant to 40 CFR 75.17(a)(2)(i)(B) with NO_x Averaging (check the NO_x Averaging Plan box and include NO_x Averaging form)

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
-------------------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Kanawha River

Plant Name (from Step 1)

STEP 2, cont'd.

1	2				
ID#	ID#	ID#	ID#	ID#	ID#
V	V				
Type	Type	Type	Type	Type	Type

(m) EPA-approved common stack apportionment method pursuant to 40 CFR 75.17(a)(2)(i)(C), (a)(2)(iii)(B), or (b)(2)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(n) AEL (include Phase II AEL Demonstration Period, Final AEL Petition, or AEL Renewal form as appropriate)

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(o) Petition for AEL demonstration period or final AEL under review by U.S. EPA or demonstration period ongoing

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

(p) Repowering extension plan approved or under review

<input type="checkbox"/>					
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

STEP 3
Read the standard requirements and certification, enter the name of the designated representative, sign &

Standard Requirements

General. This source is subject to the standard requirements in 40 CFR 72.9 (consistent with 40 CFR 76.8(e)(1)(i)) These requirements are listed in this source's Acid Rain Permit.

Special Provisions for Early Election Units

Nitrogen Oxides. A unit that is governed by an approved early election plan shall be subject to an emissions limitation for NO_x as provided under 40 CFR 76.8(a)(2) except as provided under 40 CFR 76.8(e)(3)(iii).

Liability. The owners and operators of a unit governed by an approved early election plan shall be liable for any violation of the plan or 40 CFR 76.8 at that unit. The owners and operators shall be liable, beginning January 1, 2000, for fulfilling the obligations specified in 40 CFR Part 77.

Termination. An approved early election plan shall be in effect only until the earlier of January 1, 2008 or January 1 of the calendar year for which a termination of the plan takes effect. If the designated representative of the unit under an approved early election plan fails to demonstrate compliance with the applicable emissions limitation under 40 CFR 76.5 for any year during the period beginning January 1 of the first year the early election takes effect and ending December 31, 2007, the permitting authority will terminate the plan. The termination will take effect beginning January 1 of the year after the year for which there is a failure to demonstrate compliance, and the designated representative may not submit a new early election plan. The designated representative of the unit under an approved early election plan may terminate the plan any year prior to 2008 but may not submit a new early election plan. In order to terminate the plan, the designated representative must submit a notice under 40 CFR 72.40(d) by January 1 of the year for which the termination is to take effect. If an early election plan is terminated any year prior to 2000, the unit shall meet, beginning January 1, 2000, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7. If an early election plan is terminated on or after 2000, the unit shall meet, beginning on the effective date of the termination, the applicable emissions limitation for NO_x for Phase II units with Group 1 boilers under 40 CFR 76.7.

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

John M. McManus	
Name	
Signature <i>John M. McManus</i>	Date 12/16/2011



Phase II NOx Averaging Plan

formation, see instructions and refer to 40 CFR 76.11

Page 1

This submission is: New Revised

Page 1 of 4

STEP 1

Identify the units participating in this averaging plan by plant name, State, and boiler ID# from NADB. In column (a), fill in each unit's applicable emission limitation from 40 CFR 76.5, 76.6, or 76.7. In column (b), assign an alternative contemporaneous annual emissions limitation (ACEL) in lb/mmBtu to each unit. In column (c), assign an annual heat input limitation in mmBtu to each unit. Continue to page 3 if necessary.

Plant Name	State	ID#	(a) Emission Limitation	(b) ACEL	(c) Annual Heat Input Limit
Big Sandy	KY	BSU1	0.46	0.46	4,387,500
Big Sandy	KY	BSU2	0.46	0.46	20,654,800
Cardinal	OH	1	0.68	0.68	35,706,600
Cardinal	OH	2	0.68	0.68	38,100,800
Cardinal	OH	3	0.68	0.68	44,110,400
Clinch River	VA	1	0.80	0.80	6,771,000
Clinch River	VA	2	0.80	0.80	4,946,333
Clinch River	VA	3	0.80	0.80	1,962,667
Conesville	OH	3	0.50	0.50	3,121,000

STEP 2

Use the formula to enter the Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan and the Btu-weighted annual average emission rate for the same units if they are operated in compliance with 40 CFR 76.5, 76.6, or 76.7. The former must be less than or equal to the latter.

Btu-weighted annual emission rate averaged over the units if they are operated in accordance with the proposed averaging plan

0.55

$$\frac{\sum_{i=1}^n (R_{Li} \times HI_i)}{\sum_{i=1}^n HI_i}$$

Btu-weighted annual average emission rate for same units operated in compliance with 40 CFR 76.5, 76.6 or 76.7

0.55

$$\frac{\sum_{i=1}^n [R_{Li} \times HI_i]}{\sum_{i=1}^n HI_i}$$

≤

Where,

- R_{Li} = Alternative contemporaneous annual emission limitation for unit i, in lb/mmBtu, as specified in column (b) of Step 1;
- R_{ii} = Applicable emission limitation for unit i, in lb/mmBtu, as specified in column (a) of Step 1;
- HI_i = Annual heat input for unit i, in mmBtu, as specified in column (c) of Step 1;
- n = Number of units in the averaging plan

Kanawha River
Plant Name (from Step 1)

STEP 3

This plan is effective for calendar year 2012 through calendar year 2016 unless notification to terminate the plan is given

Mark one of the two options and enter dates.

Treat this plan as identical plans, each effective for one calendar year for the following calendar years: _____, _____, _____, _____ and _____ unless notification to terminate one or more of these plans is given.

STEP 4

Special Provisions

Read the special provisions and certification, enter the name of the designated representative, and sign and date.

Emission Limitations

Each affected unit in an approved averaging plan is in compliance with the Acid Rain emission limitation for NO_x under the plan only if the following requirements are met:

- (i) For each unit, the unit's actual annual average emission rate for the calendar year, in lb/mmBtu, is less than or equal to its alternative contemporaneous annual emission limitation in the averaging plan, and
- (a) For each unit with an alternative contemporaneous emission limitation less stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year does not exceed the annual heat input limit in the averaging plan,
- (b) For each unit with an alternative contemporaneous emission limitation more stringent than the applicable emission limitation in 40 CFR 76.5, 76.6, or 76.7, the actual annual heat input for the calendar year is not less than the annual heat input limit in the averaging plan, or
- (ii) If one or more of the units does not meet the requirements of (i), the designated representative shall demonstrate, in accordance with 40 CFR 76.11(d)(1)(ii)(A) and (B), that the actual Btu-weighted annual average emission rate for the units in the plan is less than or equal to the Btu-weighted annual average rate for the same units had they each been operated, during the same period of time, in compliance with the applicable emission limitations in 40 CFR 76.5, 76.6, or 76.7.
- (iii) If there is a successful group showing of compliance under 40 CFR 76.11(d)(1)(ii)(A) and (B) for a calendar year, then all units in the averaging plan shall be deemed to be in compliance for that year with their alternative contemporaneous emission limitations and annual heat input limits under (i).

Liability

The owners and operators of a unit governed by an approved averaging plan shall be liable for any violation of the plan or this section at that unit or any other unit in the plan, including liability for fulfilling the obligations specified in part 77 of this chapter and sections 113 and 411 of the Act.

Termination

The designated representative may submit a notification to terminate an approved averaging plan, in accordance with 40 CFR 72.40(d), no later than October 1 of the calendar year for which the plan is to be terminated.

Certification

I am authorized to make this submission on behalf of the owners and operators of the affected source or affected units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

John M. McManus	
Name	
	12/16/2011
Signature	Date

Kanawha River
Plant Name (from Step 1)

STEP 1
Continue the
identification of
units from Step 1,
page 1, here.

Plant Name	State	ID#	(a)	(b)	(c)
			Emission Limitation	Alt. Contemp Emission Limitation	Annual Heat Input Limit
Conesville	OH	4	0.45	0.45	26,635,402
Conesville	OH	5	0.40	0.40	22,186,800
Conesville	OH	6	0.40	0.40	22,199,000
Flint Creek	AR	1	0.46	0.46	36,618,000
Gavin	OH	1	0.68	0.68	86,254,800
Gavin	OH	1	0.68	0.68	87,018,000
Glen Lyn	VA	51	0.40	0.40	95,667
Glen Lyn	VA	52	0.40	0.40	95,667
Glen Lyn	VA	6	0.46	0.46	458,333
H. W. Pirkey	IX	1	0.46	0.46	50,495,460
John E. Amos	WV	1	0.46	0.46	46,170,600
John E. Amos	WV	2	0.46	0.46	45,943,400
John E. Amos	WV	3	0.68	0.68	77,249,200
Kammer	WV	1	0.86	0.86	5,680,333
Kammer	WV	2	0.86	0.86	5,809,667
Kammer	WV	3	0.86	0.86	1,646,667
Kanawha River	WV	1	0.80	0.80	6,712,667
Kanawha River	WV	2	0.80	0.80	7,704,000
Mitchell	WV	1	0.50	0.50	41,309,600
Mitchell	WV	2	0.50	0.50	40,614,800
Mountaineer	WV	1	0.46	0.46	78,416,600
Muskingum River	OH	1	0.84	0.84	2,661,667
Muskingum River	OH	2	0.84	0.84	3,688,500
Muskingum River	OH	3	0.86	0.86	2,823,667
Muskingum River	OH	4	0.86	0.86	4,097,500
Muskingum River	OH	5	0.68	0.68	25,708,333
Northeastern	OK	3313	0.40	0.40	30,421,000

