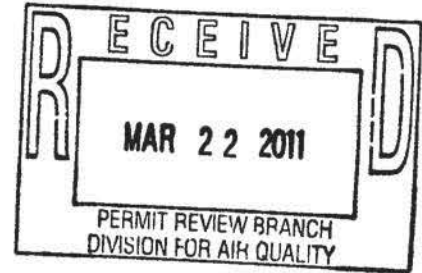




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February 28, 2011

Administrator Lisa P. Jackson  
U.S. Environmental Protection Agency  
Ariel Rios Building, Mail Code 1101A  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460  
Fax number: (202) 501-1450



**Re: Petition for objection to Tennessee Valley Authority Title V Permit No. V-09-002 R1 for the operation of the Shawnee Fossil Plant in West Paducah, Kentucky**

Dear Administrator Jackson:

Enclosed is a petition requesting that the U.S. Environmental Protection Agency (EPA) object to the Title V Permit No. V-09-002 R1 issued to the Tennessee Valley Authority (TVA) for operation of the Shawnee Fossil Plant (Permit). This petition is timely submitted by the Environmental Integrity Project and Southern Alliance for Clean Energy (Petitioners) pursuant to section 505(b)(2) of the Clean Air Act. As required by law, petitioners are filing this petition with the EPA Administrator, with copies to EPA Region IV, the Kentucky Division for Air Quality (KDAQ) and TVA.

Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Abel Russ', written over a light blue horizontal line.

Abel Russ  
Environmental Integrity Project  
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BEFORE THE ADMINISTRATOR

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

NOV 10 9AM  
IN THE MATTER OF )  
 )  
 )  
Proposed Clean Air Act Title V )  
Permit Issued to Tennessee Valley )  
Authority, Shawnee Fossil Plant )  
 )  
 )

PETITION FOR OBJECTION

Permit Number V-09-002 R1

Pursuant to Clean Air Act § 505(b)(2) and 40 C.F.R. § 70.8(d), the Environmental Integrity Project (EIP) and the Southern Alliance for Clean Energy (SACE) (collectively, Petitioners) hereby petition the Administrator of the U.S. Environmental Protection Agency to object to the proposed Title V operating permit number V-09-002 R1 (Permit) issued to the Tennessee Valley Authority (TVA) for its Shawnee Fossil Plant by the Kentucky Department for Air Quality (KDAQ). As required by these cited provisions, EIP is filing the Petition with the EPA Administrator and providing copies to KDAQ, TVA, and the EPA Region IV Air Permit Section Chief.

Petitioner Environmental Integrity Project (EIP) is a Washington, D.C.-based non-profit organization founded to advocate for the effective enforcement of state and federal environmental laws, with a specific focus on the Clean Air Act and large stationary sources of air pollution like the Shawnee power plant. As one method of achieving its mission, EIP participates in permitting procedures for coal-fired power plants. EIP filed comments on the Shawnee permit during the official notice and comment period on August 13, 2010. See Attachment A. EIP's ability to carry out its mission of improving the enforcement of environmental laws is adversely impacted if states like Kentucky issue Title V permits to large sources of air pollution that fail to comply with the Clean Air Act and EPA fails to object. Petitioner Southern Alliance for Clean Energy (SACE), based in Knoxville, Tennessee, has been working on energy reform in the Southeast for twenty-five years. SACE's ability to carry out its mission of ensuring that the region's energy needs are met with the

cleanest possible energy production is adversely impacted if large coal plants are allowed to violate the Clean Air Act and externalize their environmental impacts. EPA must object to the Permit because it is not in compliance with the Clean Air Act. Specifically, the Permit does not include Prevention of Significant Deterioration (PSD) requirements and does not include monitoring requirements sufficient to assure compliance with emission limits. Since KDAQ has now issued a final Permit, EPA is also obligated to “modify, terminate, or revoke” the Permit. 42 U.S.C. § 7661d(b)(3).

### **BACKGROUND**

The TVA owns and operates the Shawnee Fossil Plant (Shawnee), located at 7900 Metropolis Lake Road, Highway 996, West Paducah, Kentucky, 42086-9414. Shawnee is a major emitter of pollutants including particulate matter (PM), nitrogen oxides (NO<sub>x</sub>), sulfur dioxide (SO<sub>2</sub>), hydrofluoric acid (HF), hydrochloric acid (HCl), volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). KDAQ, Permit Application Summary Form for Shawnee Fossil Plant (July 12, 2010).

KDAQ issued a draft Title V permit for Shawnee on July 12, 2010. KDAQ, Draft Title V Permit No. V-09-002 R1 for TVA Shawnee Fossil Plant (July 12, 2010) (hereinafter ‘Draft Permit’). EIP and SACE submitted timely comments on August 13, 2010. *See* Attachment A. Petitioners raised all issues in this petition in its August comments. KDAQ issued a final permit for Shawnee on February 7, 2011. KDAQ, Final Permit No. V-09-002 R1 for TVA Shawnee Fossil Plant (February 7, 2011).

The EPA 45-day review period ended on January 29, 2011. U.S. EPA, Region 4: Proposed Title V Permits, <http://www.epa.gov/region4/air/permits/Kentucky.htm> (last visited February 28, 2011). This petition is filed within sixty days after the end of the 45-day review period, as required by Clean Air Act (CAA) § 505(b)(2). The Administrator must grant or deny this petition within 60 days after it is filed. *Id.*

## SPECIFIC OBJECTIONS

“If any [Title V] permit contains provisions that are determined by the Administrator as not in compliance with the applicable requirements of this chapter...the Administrator *shall*...object to its issuance.” 42 U.S.C. § 7661d(b)(1) (emphasis added). The EPA “does not have discretion whether to object to draft permits once noncompliance has been demonstrated.” *N.Y. Pub. Interest Group v. Whitman*, 321 F.3d 316, 334 (2d Cir. 2003) (holding that EPA is required to object to Title V permits once petitioner has demonstrated that permits do not comply with the Clean Air Act). “If the permitting authority has issued a permit prior to receipt of an objection by the Administrator . . . the Administrator shall modify, terminate, or revoke such permit.” 42 U.S.C. § 7661d(b)(3).

### **I. The Permit must include Prevention of Significant Deterioration (PSD) requirements.**

EPA must object to the Permit because the Permit does not contain applicable PSD requirements. Although Shawnee Units 1 and 4 have undergone major modifications, triggering PSD applicability, these units have never been subject to PSD review. Under the PSD program, persons are required to obtain a permit before constructing a “major emitting facility.” 42 U.S.C. § 7475(a). The term “construction” is defined to include facility modifications, and the term “modification” is defined as “any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.” *Id.* at § 7411(a)(4). Only modification projects that are considered “routine maintenance, repair, and replacement” (RMRR) are exempt from PSD requirements. 40 C.F.R. § 60.14(e); 40 C.F.R. § 52.21(b)(2)(iii); 401 K.A.R. 51:001(136).

In 2000, the Environmental Appeals Board (EAB) found that TVA undertook modifications at Shawnee Units 1 and 4 that did not fall under the RMRR exception. *In re Tennessee Valley Authority*, 9 E.A.D. 357 (EAB 2000). The EAB decision, and the substantial record developed in support of that decision, establish that TVA’s modifications at Shawnee Units 1 and 4 resulted in

increased emissions of NO<sub>x</sub> and SO<sub>2</sub> and were undertaken without the PSD review required by federal and state regulations. *Id.*

Specifically, the EAB found that TVA spent over \$9 million on Units 1 and 4 in 1989 and 1990 to replace “secondary superheater and reheater pendant elements and crossover elements, including header stubs” at each unit during extended outages. *Id.* at 26, 87-88; Attachment A at 3. To determine whether these modifications constituted “major modifications” outside the RMRR exception, the EAB considered four factors (1) the nature and extent of the projects, (2) the purpose of the projects, (3) the frequency of the projects, and (4) the cost of the projects. *In re TVA*, 9 E.A.D. at 61 (noting that this test is “reasonable and consistent with the statute, regulations, and case law”); *see also Wis. Elec. Power Co. v. Reilly*, 893 F.2d 901, 910-11 (7<sup>th</sup> Cir. 1990). Applying these four factors, the EAB found that the superheater/reheater replacements were major, non-routine projects that were paid for out of the capital budget to extend the lives of the units. *In re TVA*, 9 E.A.D. at 87-88. The EAB also found that significant net emission increases occurred as a result of the projects. *Id.* at 48-49; *see also* Attachment A at 7-9.

In summary, the EAB concluded that the superheater/reheater replacements were major modifications, not within the routine maintenance exception, and that PSD requirements applied. *In re TVA*, 9 E.A.D. at 88 (“[B]ased on the facts in the record, the Board concludes that TVA has not met its burden to establish that the projects TVA undertook at the Shawnee Units 1 and 4 projects were ‘routine.’”); *Id.* at 14 (“[W]e find that EPA Enforcement has demonstrated that TVA violated the PSD and nonattainment NSR permitting requirements with respect to [NO<sub>x</sub> and SO<sub>2</sub> at Shawnee Units 1 & 4]”). Shawnee Units 1 and 4 are therefore subject to PSD review, and the Title V permit must include the applicable PSD requirements.

EPA recently objected to the Title V permit for TVA’s Paradise Fossil Plant in Kentucky because the permit did not include PSD requirements for Paradise Units 1-3. *In re Tennessee Valley Authority, Paradise Fossil Fuel Plant, Title V Permit # V-07-018*, Petition No. IV-2007-3 (Order

Responding to Petition to Object to Title V Permit) (Envtl. Prot. Agency, July 13, 2009) [hereinafter Paradise Order]. Based in part on the EAB record established in a case against TVA for violations at the Paradise Fossil Plant, EPA ordered KDAQ to conduct a full PSD review for Paradise Units 1-3. *Id.* at 5-6. Specifically, EPA ordered KDAQ to “adequately address Petitioners’ comment that PSD is an applicable requirement...as a result of major modifications,” and to “consider...the factual record developed as part of the EPA proceeding against TVA in *In re Tennessee Valley Authority*...and other appropriate information.” *Id.* at 6. EPA also stated that KDAQ should, if PSD requirements were found to apply, “take action to revise the permit to include a compliance schedule for addressing those requirements.” *Id.*

Similarly, EPA must object to the Shawnee Permit because PSD is an applicable requirement for Shawnee Units 1 and 4—these units underwent major modifications resulting in significant net emissions increases as documented in the EAB decision. *In re TVA*, 9 E.A.D. at 14, 49, 87-88. Title V permits must contain all applicable requirements, including requirements established pursuant to PSD review. 42 U.S.C. § 7661c(a); Paradise Order at 2. In keeping with the recent Title V order for the Paradise plant, EPA must order KDAQ to conduct a full PSD review of Shawnee Units 1 and 4 and determine whether PSD requirements are applicable. If so, the permit must include those requirements.

**II. The Permit does not contain monitoring requirements sufficient to assure compliance with permit terms and conditions.**

The Permit does not include sufficient monitoring for the PM emission limits, opacity limits, or permit terms and conditions for the dry ash handling process. The CAA requires that “each permit issued under [Title V] shall set forth ... monitoring ... requirements to assure compliance with the permit terms and conditions. 42 U.S.C. § 7661c(c). On August 19, 2008, the D.C. Circuit Court of Appeals struck down an EPA rule that would have prohibited KDAQ and other state and local authorities from adding monitoring provisions to Title V permits if needed to “assure compliance”

with emission limits. *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008). The opinion emphasized the statutory duty to include adequate monitoring in Title V permits:

By its terms, this mandate means that a monitoring requirement insufficient 'to assure compliance' with emission limits has no place in a permit unless and until it is supplemented by more rigorous standards. *Id.* at 677.

The D.C. Circuit opinion makes clear that Title V permits must include monitoring requirements that assure compliance with permit terms and conditions.

**A. The Permit does not contain sufficient monitoring requirements for the PM emission limit for Units 1-9.**

Units 1-9 are subject to the following emission limit: “[P]articulate matter emissions shall not exceed 0.11 lb/MMBtu based on three-hour average.” Draft permit at 2. The permit provides for compliance to be monitored with one PM measurement and, as a proxy for emissions data, ongoing opacity measurements. *Id.* at 3-4. Neither monitoring requirement is adequate to ensure compliance with this short-term emissions limit. The CAA requires that the frequency of monitoring requirements bear a rational relationship to the underlying emission limit.

The PM monitoring requirement in the Permit is inadequate because it only requires TVA to monitor PM once during the five year permit term. Specifically, the Permit states that TVA must conduct a PM test “by the start of the fourth year of this permit to demonstrate compliance with the applicable standard.” Draft Permit at 2-3 (2010). Since the Permit contains no requirement for additional stack tests, it appears that KDAQ is requiring a stack test only once during the entire permit term. Stack test data generated once every four years cannot assure compliance with an emission limit that must be met at all times. EPA’s Title V regulations address this issue, as noted by the D.C. Circuit court:

“[S]ubsection 70.6(a)(3)(i)(B) obliges the permitting authority to add to the permit ‘periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source’s compliance with the permit.’” *Sierra Club v. EPA*, 536 F.3d at 675 (quoting 40 C.F.R. 70.6(a)(3)(i)(B)).

In other words, the frequency of monitoring must correspond to the averaging time used to determine compliance. Since the Shawnee PM emission limit is based on three-hour averaging (Draft Permit at 2), compliance should be measured with hourly PM emissions data.

Data generated by the continuous opacity monitoring system (COMS) are also insufficient to assure compliance with the PM emission limit for Units 1-9. EPA has stated that “opacity standards are often established at a level which represents a likely significant exceedance of the particulate matter standard.” 62 Fed. Reg. 54,900, 54,923 (Oct. 22, 2007). The Permit proposes to use the COMS data, with boiler-specific triggers of 15% or 18%, to demonstrate compliance with the PM emission limit. Draft Permit at 4; KDAQ, Permit Statement of Basis, Shawnee Fossil plant, Permit No. V-09-002 R1, 4 (2010). Yet the Permit does not establish the relationship between opacity and PM, and relies on the permittee to establish this relationship within one year after the issuance of the Permit. Draft Permit at 3. If the COMS data are to provide a reliable surrogate for PM emissions, then TVA must establish indicator ranges for the full range of operational conditions at Shawnee Units 1-9 and include the indicator ranges in the Permit.

EPA recently objected to the Wheelabrator Title V permit because the Maryland Department of Environment (MDE) failed to include specific monitoring requirements in the Title V permit for PSD emission limits and only included a statement that MDE would approve the monitoring methodology for estimating emissions at a later date. *In re Wheelabrator Baltimore, LP*, Permit No. 24-510-01886 (Order Partially Granting and Partially Denying the petition for Objection to Permit) (Envtl. Prot. Agency, April 14, 2010). EPA stated that Title V does not allow states to issue a permit without testing and monitoring requirements on the promise that monitoring methods will be specified at some future date. *Id.* at 10 (“EPA agrees [with Petitioners] that MDE does not have the discretion to issue a permit without specifying the monitoring methodology needed to assure compliance with applicable requirements in the title V permit.”). Similarly, KDAQ may not issue a



Title V permit without establishing indicator ranges for opacity that assures compliance with the PM emissions limit.

In order to assure compliance with the PM emission limit, KDAQ should require Shawnee to install, calibrate, operate, and maintain PM Continuous Emissions Monitors (PM CEMS) at Units 1-9. EPA has determined that PM CEMS are reliable and accurate, and there are many facilities that operate PM CEMS, including, but not limited to: Tampa Electric power plants in Florida, Eli Lilly Corporation in Indiana, Dominion power plants in Virginia, Wisconsin Electric and Power Company plants in Wisconsin, Longview Power, LLC in West Virginia, Louisville Gas and Electric in Kentucky, and the US Department of Energy in Tennessee. *See* U.S. EPA Office of Air Quality Planning and Standards, *PM CEMS Installations, Certifications, and Operations*, Status Report (Updated Sept. 27, 2005); U.S. EPA, *Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring*, EPA-454/R-00-039 (Sept. 2000). To ensure compliance with the PM limit at Shawnee (0.11 lb/MMBtu), each PM CEM should include a continuous particle mass monitor measuring particulate matter concentration, directly or indirectly, on an hourly average basis, and a diluent monitor used to convert the concentration to units of lb/MMBtu. In addition, Shawnee should maintain, in an electronic database, the emission values produced by all PM CEMs in lb/MMBtu and report these data to KDAQ to demonstrate compliance.

**B. Method 9 cannot assure compliance with the opacity limit.**

The Permit does not include monitoring requirements sufficient to assure compliance with opacity limits. The Permit prohibits Shawnee Units 1-9 from exceeding 20% opacity except for one 6-minute period per hour of not more than 40% opacity. Draft Permit at 2. Yet the Permit only requires TVA to use Method 9 “at least once every 14 boiler operating days” to demonstrate compliance with the opacity limit, leaving COMs data as an optional alternative. *Id.* at 3. Method 9 opacity observations are conducted infrequently, can be performed only during daylight hours, and are subject to weather-related delays. A Method 9 test every two weeks is clearly insufficient to

determine compliance with an opacity standard that must be met at all times. KDAQ should require TVA to use COMS data to demonstrate compliance with the opacity standard.

**C. The Permit does not contain monitoring requirements sufficient to assure compliance with fugitive dust permit terms and conditions.**

Fugitive dust emissions from dry fly ash handling operations present a significant health risk. A recent EPA assessment indicates that fugitive dust from fly ash handling operations and landfills may pose a health threat to local communities. U.S. EPA, *Hazardous and Solid Waste Management System; Identification and Listing of Special Wastes; Disposal of Coal Combustion Residuals from Electric Utilities; Proposed Rule*, 75 Fed. Reg. 35128, 35171 (June 21, 2010). In particular, EPA discussed the potential public health impacts of hexavalent chromium, a known carcinogen, and the risk of noncancer morbidity and mortality associated with the inhalation fine particles. *Id.* at 35171; see also U.S. EPA, *Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills—DRAFT* (2010).

The Permit regulates fly ash handling emissions from Emissions Units 16 and 17 separately. Unit 16 is subject to an hourly PM limit (in units of pounds per hour as a function of process weight rates) and a continuous (6-minute average) 20% opacity maximum. Draft Permit at 32. Monitoring requirements include weekly qualitative visible observations and, if visible emissions are observed, Method 9 opacity readings. *Id.* at 32-33. A weekly observation is not sufficient to assure compliance with emission limits that must be met on an hourly and continuous basis. The Permit must contain more frequent monitoring requirements for the PM and opacity limits.

Unit 17 is subject to a prohibition of fugitive dust crossing the property line, but the permit does not include any monitoring requirements. *Id.* at 34. Without sufficient monitoring, it is impossible for KDAQ and the public to determine whether fugitive dust emissions are affecting air quality for the 2,100 households within a 3-mile radius of Shawnee Fossil Plant. The Permit must be

modified to include monitoring requirements sufficient to assure compliance with the prohibition of fugitive dust crossing the property line.

### CONCLUSION

EPA must object to the proposed Title V Permit because the Permit does not comply with the Clean Air Act. Specifically, the Shawnee permit does not contain applicable PSD requirements and does not contain monitoring requirements sufficient to assure compliance with permit terms and conditions. Title V aims to improve accountability and enforceability by “clarify[ing], in a single document, which requirements apply to a source.” 57 Fed. Reg. 32250, 32251 (July 21, 1992).

Without changes to the Permit, the goals of increasing enforcement and compliance will be defeated.

For all of these reasons, Petitioners respectfully request that the Administrator object to the proposed Shawnee Title V Permit; modify, terminate or revoke the permit; and require KDAQ to revise the Permit in accordance with the Clean Air Act and its implementing regulations.

DATED: February 28, 2011

Respectfully submitted,



Abel Russ  
Attorney

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**CERTIFICATE OF SERVICE**

I declare under penalty of perjury under the laws of the United States that I have provided copies of the foregoing petition to persons or entities below via certified mail:

Administrator Lisa P. Jackson  
U.S. Environmental Protection Agency  
Ariel Rios Building, Mail Code 1101A  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

U.S. Environmental Protection Agency  
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KDEP Deputy Commissioner  
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Tom Kilgore, President and CEO  
Tennessee Valley Authority  
400 W. Summit Hill Dr.  
Knoxville, TN 37902-1499



Abel Russ

**Attachment A**

**COMMENTS ON THE PROPOSED PERMIT FOR THE OPERATION OF THE  
SHAWNEE FOSSIL PLANT**

**Submitted By:  
THE ENVIRONMENTAL INTEGRITY PROJECT**

**August 13, 2010**

August 13, 2010

Mr. James Morse  
Kentucky Department for Environmental Protection  
Division for Air Quality  
200 Fair Oaks Lane, 1st Floor  
Frankfort, KY 40601  
(502) 564-3999  
James.Morse@ky.gov

**Re: Public Comments submitted on behalf of the Environmental Integrity Project and Southern Alliance for Clean Energy regarding the Draft Renewal of Title V Permit No. V-09-002 for the Tennessee Valley Authority, Shawnee Fossil Plant.**

Dear Mr. Morse:

Thank you for the opportunity to submit comments to the Kentucky Division for Air Quality ("KDAQ") regarding the draft Title V operating permit for the Shawnee Fossil Plant ("Shawnee"), located in McCracken County, Kentucky. Please accept these comments from the Environmental Integrity Project and Southern Alliance for Clean Energy ("Commenters").

## I. SUMMARY OF COMMENTS

The draft Title V permit for Shawnee is deficient for numerous reasons. The draft Permit fails to comply with the requirements of the federal Clean Air Act ("CAA"), 42 USC §§ 7401 *et seq.*, and Kentucky law, as well as Kentucky State Implementation Plan ("SIP"). Our comments, described in more detail below, address the following deficiencies with the draft Title V permit:

- Prevention of Significant Deterioration ("PSD") is an applicable requirement for Shawnee Unit 1 and 4.
- The Permit does not contain emissions monitoring sufficient to ensure compliance with emission standards, as required by 42 U.S.C. §7661c(c) and the D.C. Circuit's decision in *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008).

## II. STATUTORY AND REGULATORY FRAMEWORK

Section 502(d)(1) of the CAA calls upon each state to develop and submit to EPA an operating permit program to improve compliance with, and enforcement of, federal air quality requirements. Correctly implemented, the Title V program "will enable the source, States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements. Increased source accountability and better enforcement should result." 57 Fed. Reg. 32,251 (July 21, 1992). All major stationary sources

of air pollution in Kentucky, such as Shawnee, are required to have a Title V operating permit that includes emission limitations and other conditions as necessary to assure compliance with the CAA and the Kentucky SIP.

### III. PERMIT DEFICIENCIES

#### 1. *PSD is an Applicable Requirement at Shawnee Units 1 and 4 due to Major Modifications Performed at those Units*

Under the CAA, new and modified stationary sources of air pollution, such as Shawnee, are required to meet New Source Performance Standards ("NSPS") to control air pollution. 42 U.S.C. § 7411. NSPS regulations state:

[A]ny physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the [CAA]. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere. 40 C.F.R. § 60.14(a).

To improve air pollution control and encourage polluters to reduce harmful emissions, Congress amended the CAA to add a program for the Prevention of Significant Deterioration ("PSD") aimed at protecting and maintaining air quality. Under the PSD program, each SIP must "contain emission limitations and such other measures as may be necessary . . . to prevent significant deterioration of air quality in each region (or portion thereof) designated pursuant to [§] 7407." 42 U.S.C. § 7471. PSD permits are also needed before a "major emitting facility" can be constructed. *Id.* § 7475(a). The term "construction" is defined to include facility modifications, and the term "modification" is defined as "any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted." *Id.* § 7411(a)(4). Under Kentucky PSD regulations, a "modification" is defined as:

"any physical change in, or a change in the method of operation of, an affected facility that: (a) Increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or that results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted; and (b) Is not solely: 1. Maintenance, repair, and replacement that the cabinet determines to be routine for a source category; 2. An increase in production rate of an affected facility, if that increase can be accomplished without a capital expenditure on that facility; 3. An increase in the hours of operation; 4. Use of an alternative fuel or raw material if, prior

to the date a standard becomes applicable to that source type, the affected facility was designed to accommodate that alternative use. A facility is considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change; 5. Conversion to coal required for energy considerations, as specified in 42 U.S.C. 7411(a)(8); 6. The addition or use of a system or device the primary function of which is the reduction of air pollutants, unless an emission control system is removed or replaced by a system that the cabinet determines to be less environmentally beneficial; or 7. The relocation or change in ownership of a source. 401 KAR 51:001(136).

Only modification projects which are considered "routine maintenance, repair, and replacement" ("RMRR") are considered exempt from PSD requirements. See 40 C.F.R. § 60.14(e) (NSPS program); 40 C.F.R. § 52.21(b)(2)(iii) (PSD program).

In 2000, the Environmental Appeals Board ("EAB") found that the Tennessee Valley Authority (TVA) undertook modifications at Shawnee Units 1 and 4 that did not fall under the RMRR exception. The EAB decision and substantial record developed in support of that decision, established that TVA's modifications at Shawnee Units 1 and 4 were undertaken without the PSD review required under federal and state regulations, and resulted in an emissions increase of NOx and SO2. See *In Re Tennessee Valley Authority*, 9 E.A.D. 357 (EAB 2000).<sup>1</sup>

Specifically, the EAB found that TVA spent \$4.5 million on Unit 1 between 1989-1990 to replace the secondary superheater and reheater pendant elements and crossover elements, including header stubs during a 3-month outage. At Unit 4, the EAB found that TVA spent \$5.1 million in 1990 to replace the secondary superheater and reheater pendant elements and crossover elements, including header stubs during a 2-month outage. *Id.* at 29. These projects were identified in EPA's exhibit #273 in the TVA case, which noted:

Shawnee #1 (1953) 175 MW	Replaced secondary superheater and reheater pendant elements and crossover elements, including header stubs. Outage: 3 months.	\$4.5 million	1989-90
Shawnee #4 (1953) 175 MW	Replaced secondary superheater and reheater pendant elements and crossover elements, including header stubs. Outage: 2 months.	\$5.1 million	1990

Documents in the record for the EAB case confirm that these units underwent a major modification. These documents are all in KDAQ's possession and we incorporate them into

<sup>1</sup> We incorporate by reference all exhibits and testimony in the EAB docket for this matter.



these comments by reference. Of particular note (while not limiting these comments), the work orders attached to these comments note the non-routine nature of the project, the expected improvement in plant conditions and performance as a result of the projects, and that the projects were capitalized and included as property units in the property unit records for the boilers.

EPA's Exhibits 213 and 214 in the TVA case provides further details about the physical changes to the Shawnee boilers and the facts demonstrating that the modifications were not routine:

Shawnee Unit 1 - Table 12

Date in Service:	1953
Gross Design Capacity:	175 MW
Nature of Project:	Replaced secondary superheater and reheater pendant elements and crossover elements, including header stubs (a)
Date of Project:	1989-90 (b)
Extent of Project:	Total replacement of secondary superheater and reheater pendant elements and crossover elements, including header stubs (a), during a 3-month outage at the unit. (b) Inspection has revealed that the tubes are in a badly deteriorated condition caused by oxidizing wastage and erosion thereby reducing tube wall thickness. (a)
Cost:	\$4.5 million (b)
Frequency of this project at the unit:	one
Purpose:	Eliminated escalating tube failure. (a)

- a. Work Order, Bates No. 9307101819675
- b. Work Order Completion Notice, Bates No. 9307101819676

Shawnee Unit 4 - Table 13

Date in Service:	1953
Gross Design Capacity:	175 MW
Nature of Project:	Replaced secondary superheater and reheater pendant elements and crossover elements, including header stubs (a)
Date of Project:	1990 (b)
Extent of Project:	Total replacement of secondary superheater and reheater pendant elements and crossover elements, including header stubs (a), during a 2-month outage. (b) Inspection has revealed that the tubes are in a badly deteriorated condition caused by oxidizing wastage and erosion thereby reducing tube wall thickness. (a)
Cost:	\$5.1 million (b)
Frequency of this project at the unit:	one
Purpose:	Eliminated escalating tube failures. (a)

- a. Work Order, Bates No. 9307101819671
- b. Work Order Completion Notice, Bates No. 9307101819672

TVA's property records for the Shawnee plant show that the superheater/reheater replacements were expensive in relation to other projects at the plant, that they only occurred once during the life of the boiler, and that they were treated as capital projects increasing the value of the boilers. See EPA's Exhibits 227-228.

To determine whether TVA's projects at Shawnee Units 1 and 4 constitute a "major modification" outside the RMRR exception, the EAB considered four central factors: (1) the nature and extent of the projects; (2) the purpose of the projects; (3) the frequency of the projects; and (4) the cost of the projects. See *Wis. Elec. Power Co. (WEPCO) v. Reilly*, 893 F.2d 901, 910 (7th Cir. 1990). The EAB stated, "we apply the four-factor test advocated by EPA Enforcement and adopted by the Seventh Circuit in its WEPCO decision to determine whether a change falls within the scope of the exception. The four-factor test is reasonable and consistent with the statute, regulations, and case law." See *In re TVA*, at 61. Applying these four factors, the EAB found that TVA undertook "major modifications" at Shawnee Units 1 and 4:

The Shawnee Plant is located in McCracken County, Kentucky. In 1953, Units 1 and 4 began commercial operations. The projects involved in this matter were carried out in the Fall of 1989 and the Spring of 1990 at Units 1 and 4, respectively. The Board finds that following facts from the record to be significant.

### 1. Nature and Extent

TVA replaced the following items at each unit: "the secondary and reheat superheater pendant and crossover elements including header stubs." EPA Enforcement Exs. 133, 136. The planning required several years to complete. *Id.* These projects were also approved by TVA's Board of Directors and were managed by TVA's central office. TVA funded these projects, like all others at issue, through the capital budget. During the actual implementation of the project at Unit 1, TVA shut down Unit 1 for three months. EPA Enforcement Ex. 134. TVA completed the work at Unit 4 in two months. EPA Enforcement Ex. 137. Both of these projects required a shutdown beyond that of the typical scheduled maintenance outage of four weeks. Additionally, these projects required the replacement of over 132,612 feet of tubing at each unit and represented approximately 37% replacement of total tubing at each unit. TVA Ex. 4, at 32 and 33 (Golden's pre-filed testimony).

### 2. Purpose

The central office recommended the projects because inspections of these components had revealed that the tubing was badly deteriorated and that, if not replaced, the rate of tube failures would increase. Thus, these projects were implemented to reduce the number of forced outages at the unit and prevent the continuing increase of those outages. EPA Enforcement Exs. 133, 136. These projects also extended the life of the units. EPA Enforcement Ex. 279, at 46 (Hekking's pre-filed testimony). TVA's classification of the projects as capital projects, further reinforces that TVA intended these projects to improve the condition of the units, not only to maintain them.

### 3. Frequency

Similar projects had never been performed on these units in their thirty-six years of operation. EPA Enforcement Ex. 279, at 46 (Hekking's pre-filed testimony). Again, TVA argues that replacements of this kind were commonly performed at TVA and industry-wide. Thus, TVA concludes, the projects at Units 1 and 4 were routine. However, TVA has offered no evidence that similar improvements are anything other than rare in the life of units of this kind, a factor that we find more instructive.

### 4. Cost

TVA implemented these projects at an approximate capital cost of \$4.5 million for Unit 119 and \$5 million for Unit 4. See EPA Enforcement Ex. 279, at 46 (Hekking's pre-filed testimony); EPA Enforcement Ex. 273. Given the size of these units and the cost of

these projects, it is probable that the plant's O&M budget would have been insufficient to finance these projects while meeting other maintenance needs.

Again, based on the facts in the record, the Board concludes that TVA has not met its burden to establish that the projects TVA undertook at the Shawnee Plant Units 1 and 4 projects were "routine." Notably, TVA cites to no applicability determination issued by EPA or the relevant state authority for these or like projects that would support a finding that these projects constituted routine maintenance, repair and replacement.. See In re TVA, at Appendix A.

EPA also correctly determined that significant net emission increases occurred as a result of the superheater/reheater projects. First, it should be noted that the projects occurred prior to the WEPCO rule (in 1992) and are not subject to the Seventh Circuit's decision in the *WEPCO* case (because Kentucky is in the Sixth Circuit). Therefore, the actual-to-potential test applies to the projects. Under that test, significant net emission increases of SO<sub>x</sub>, NO<sub>x</sub> and PM occurred as follows:

**SHAWNEE UNIT 1  
NEW SOURCE REVIEW EMISSIONS SUMMARY**

EMISSIONS CATEGORY	REFERENCE DATES	NOX (TONS/YR)	SO <sub>2</sub> (TONS/YR)	PARTICULATE MATTER (TONS/YR)
Baseline Emissions - Actual Emissions 2 Years prior to Modification	11-1-87 to 10-30-89	1,450	1,731	22
Potential to Emit - 100% Capacity Factor (CF) Net = PTE - Baseline	Post Modification	5,794 Net: 4,344	6,915 Net: 5,184	89 Net: 67
Potential to Emit - 90% CF	Post Modification	5,215 Net: 3,765	6,224 Net: 4,493	80 Net: 58
Potential to Emit - 80% CF	Post Modification	4,635 Net: 3,185	5,532 Net: 3,801	71 Net: 49
Potential to Emit - 70% CF	Post Modification	4,056 Net: 2,606	4,841 Net: 3,110	62 Net: 40
Potential to Emit - 60% CF	Post Modification	3,476 Net: 2,026	4,149 Net: 2,418	53 Net: 31
Actual Emissions - 2 Years after Modification Net = Actual Post-Mod Emissions - Baseline	3-1-90 to 2-28-92	2,899 Net: 1,449	3,242 Net: 1,511	45 Net: 23

**SHAWNEE UNIT 4  
NEW SOURCE REVIEW EMISSIONS SUMMARY**

<b>EMISSIONS CATEGORY</b>	<b>REFERENCE DATES</b>	<b>NOX (TONS/YR)</b>	<b>SO<sub>2</sub> (TONS/YR)</b>	<b>PARTICULATE MATTER (TONS/YR)</b>
<b>Baseline Emissions - Actual Emissions 2 Years prior to Modification</b>	2-1-88 to 1-30-90	2,239	2,632	36
<b>Potential to Emit - 100% Capacity Factor (CF) Net = PTE - Baseline</b>	Post Modification	5,530 Net: 3,291	6,499 Net: 3,867	88 Net: 52
<b>Potential to Emit - 90% CF</b>	Post Modification	4,977 Net: 2,738	5,849 Net: 3,217	79 Net: 43
<b>Potential to Emit - 80% CF</b>	Post Modification	4,424 Net: 2,185	5,199 Net: 2,567	70 Net: 34
<b>Potential to Emit - 70% CF</b>	Post Modification	3,871 Net: 1,632	4,549 Net: 1917	62 Net: 26
<b>Actual Emissions - 2 Years after Modification Net = Actual Post-Mod Emissions - Baseline</b>	4-1-90 to 3-30-92	2,444 Net: 205	2,759 Net: 127	38 Net: 2

EPA Exhibits 186-187.

Second, even if the WEPCO rule and WEPCO case applied, and an actual-to-projected test were used (even though TVA did not comply with the post-project reporting that both EPA and the D.C. Circuit found necessary to use such a test), the projects resulted in significant net emission increases of NOx and SOx as follows:

**SHAWNEE UNIT 1**  
**NEW SOURCE REVIEW EMISSIONS SUMMARY IF WEPKO RULE APPLIES**

EMISSIONS CATEGORY	REFERENCE DATES	NOX (TONS/YR)	SO <sub>2</sub> (TONS/YR)	PARTICULATE MATTER (TONS/YR)
Baseline Emissions - Actual Emissions for 2 years with highest emission rate of the 5 Years prior to Modification ("high 2 of 5")	9-1-85 to 8-31-87	2,179	2,569	29
Projected Net Representative Actual Emissions - 20,717 MWH/yr loss during the two years before the modification to be recovered by replacing secondary superheater elements and crossovers 7,833 MWH/yr loss during the two years before the modification to be recovered by replacing reheat superheater elements and crossovers Total	Post Modification	99 <u>38</u> 137	119 <u>45</u> 164	2 1 3
Projected Net Representative Future Actual Emissions Increase - 25,099 MWH/yr loss during the high 2 of 5 baseline period to be recovered by replacing secondary superheater elements and crossovers 5,840 MWH/yr loss during the high 2 of 5 baseline period to be recovered by replacing reheat superheater elements and crossovers Total	Post Modification	120 <u>28</u> 148	144 <u>33</u> 177	2 <u>&lt;1</u> <u>&lt;3</u>
Actual Emissions - 2 Years after Modification Net = Actual Post-Mod Emissions - Baseline	3-1-80 to 2-28-92	2,899 Net: 720	3,242 Net: 673	45 Net: 16

**SHAWNEE UNIT 4**  
**NEW SOURCE REVIEW EMISSIONS SUMMARY IF WEPKO RULE APPLIES**

EMISSIONS CATEGORY	REFERENCE DATES	NOX (TONS/YR)	SO <sub>2</sub> (TONS/YR)	PARTICULATE MATTER (TONS/YR)
Baseline Emissions - Actual Emissions for 2 years with highest emission rate of the 5 Years prior to Modification ("high 2 of 5")	1-1-87 to 12-30-88	2,911	3,442	43
Projected Net Representative Actual Emissions Increase - 62,004 MWH/yr loss during the two years before the modification to be recovered by replacing secondary superheater elements and crossovers 7,674 MWH/yr loss during the two years before the modification to be recovered by replacing reheat superheater elements and crossovers Total	Post Modification	284 <u>25</u> 319	333 <u>41</u> 374	5 1 6
Projected Net Representative Actual Emissions Increase - 43,156 MWH/yr loss during the high 2 of 5 baseline period to be recovered by replacing secondary superheater elements and crossovers 14,334 MWH/yr loss during the high 2 of 5 baseline period to be recovered by replacing reheat superheater elements and crossovers Total	Post Modification	197 <u>66</u> 263	232 <u>77</u> 309	3 1 4
Actual Emissions - 2 Years after Modification Net = Actual Post-Mod Emissions - Baseline	4-1-90 to 3-30-92	2,444 Net: -467	2,578 Net: -864	38 Net: -5

2,759  
-683

Id.

Recently, EPA responded to a Title V petition for the TVA Paradise Fossil Plant in Kentucky, where the Title V permit did not include PSD requirements for Paradise Units 1-3 as required by the record established in *In re TVA*. See U.S. EPA, *In the Matter of Tennessee Valley Authority Paradise Fossil Fuel Plant, Title V Permit # V-07-018*, Petition No. IV-2007-3,

Order Responding to Object to Title V Permit (July 13, 2009). Based on the EAB record, EPA ordered the KDAQ to conduct a full PSD review for Paradise Units 1-3. Id. EPA stated:

KDAQ is directed to consider the information referenced in Petitioners' comments, including the factual record developed as part of the EPA proceeding against TVA in *In re Tennessee Valley Authority* as it pertains to Plant Paradise, and other appropriate information. Should KDAQ determine that PSD is an applicable requirement for Units 1-3, KDAQ should take action to revise the permit to include a compliance schedule for addressing those requirements. Id.

Based on the record in the EAB decision, PSD was an applicable requirement for Shawnee Units 1 and 4 due to major modifications performed at those units that resulted in significant net emissions increases. In addition, due to EPA's recent Paradise Title V Order relating to the same EAB case, Commenters urge KDAQ to undertake a review of the record established in the EAB decision pertaining to Shawnee Units 1 and 4 before issuing a final Title V permit for this facility. The final permit should include PSD requirements of the Clean Air Act as applicable requirements in the permit, including but not limited to BACT limits. Moreover, the final permit must include a compliance schedule to bring the plant into compliance with the PSD requirements (unless compliance will occur prior to permit issuance).

**2. *The Permit Does Not Include Monitoring Adequate to Assure Compliance with Shawnee's PM Emission Limits***

The Permit does not include monitoring requirements that ensure compliance with PM emission limits for Shawnee's coal-fired boilers No. 1-9. The CAA requires that "each permit issued under [Title V] shall set forth ... monitoring ... requirements sufficient to assure compliance with the permit terms and conditions" 42 U.S.C. §7661c(c). On August 19, 2008, the D.C. Circuit Court of Appeals struck down an EPA rule that would have prohibited KDAQ and other state and local authorities from adding monitoring provisions to Title V permits if needed to "assure compliance." See *Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2008). The opinion emphasized the statutory duty to include adequate monitoring in Title V permits:

By its terms, this mandate means that a monitoring requirement insufficient 'to assure compliance' with emission limits has no place in a permit unless and until it is supplemented by more rigorous standards. Id. at 677.

The D.C. Circuit opinion makes clear that Title V permits must include monitoring requirements that assure compliance with emission limits. The Court specifically noted that annual testing is unlikely to assure compliance with a daily emission limit, and found that state permitting authorities have a statutory duty to include monitoring requirements that ensure compliance with emission limits in Title V operating permits. Id. at 675. In other words, the

frequency of monitoring must bear some relationship to the averaging time used to determine compliance.

The Shawnee Title V Permit, however, fails to include adequate monitoring requirements. For example, the Shawnee boilers No. 1-9 are subject to a PM limit that must be met at all times, but the Shawnee Permit requires virtually no particulate matter monitoring, and only requires TVA to conduct a PM test “by the start of the fourth year of this permit to demonstrate compliance with the applicable standard.” Since the draft Permit contains no requirement for additional stack tests, it appears that KDAQ may only require a stack test once during the entire permit term. See KDAQ, Draft Air Permit, Shawnee Fossil Plant, Permit No. V-09-002 R1, 3 (2010). A stack test conducted once during the permit term does not assure compliance with a PM limit that must be met at all times.

Compliance with an emission limit that has to be met at all times should be measured continuously, not once every five years. The Permit should include adequate monitoring requirements for boilers No. 1-9 to ensure compliance with PM emission limits, and the CAA. To the extent there are other emission limits in the Shawnee Title V Permit that do not have adequate monitoring, these provisions would also violate Title V of the CAA.

In addition, Shawnee operates a continuous opacity monitoring system (“COMS”) to indicate good operational and maintenance practices.

Opacity is not a pollutant, but instead is a measure of the light-blocking property of a plant's emissions, which is important in the Clean Air Act regulatory scheme as an indicator of the amount of visible particulate pollution being discharged by a source. COMS measures opacity by projecting a beam of light across the interior diameter of a smokestack to a mirror mounted on the opposite side of the smokestack wall and measuring how much of the light is reflected back. COMS then records the amount of light that was absorbed or scattered on the trip. *Sierra Club v. Tenn. Valley Authority*, 430 F.3d 1337, 1341 (11th Cir. 2005).

The Statement of Basis describes Shawnee's Compliance Assurance Monitoring (“CAM”) plan for PM, which involves measuring Opacity using the COMS. See KDAQ, Permit Statement of Basis, Shawnee Fossil Plant, Permit No. V-09-002 R1, 4 (2010). The Statement of Basis states that an “excursion” is a 30-min block average of over 18% opacity for Units 1-5, and 15% for units 6-9, averaged over a three consecutive hours, excluding those events defined as startups, shutdowns, or malfunctions.” The permit does not require TVA to take corrective action, or report the results of such excursions to KDAQ in a timely manner. Furthermore, the Permit allows TVA to submit a “schedule” to “establish or re-establish the correlation between opacity and particulate emissions,” a requirement that suggests TVA has not yet established this relationship sufficiently or recently. *Id.* Yet, KDAQ is proposing to allow “excursions” during the upcoming permit term without first properly establishing the relationship between PM and Opacity.



However, excursions may indicate non-compliance with the particulate matter emission limit. The EPA has stated that “opacity standards are often established at a level which represents a likely significant exceedance of the particulate matter standard.” 62 Fed. Reg. 54,900, 54,923 (Oct. 22, 2007).

Moreover, the underlying limits are not set forth in 3-hour blocks or in 30-minute blocks. Therefore, there is no basis to establish a CAM plan that assumes the limits are averaged over such long periods of time. To the extent that 18% and 15% opacity represent the opacity levels at which compliance with the underlying limit is assured, the plan must require steps to address *any* exceedance of these ranges over any period of time.

Instead of a stack test once every permit term, KDAQ should require Shawnee to install, calibrate, operate and maintain PM Continuous Emissions Monitors (“PM CEMS”) at all Units to demonstrate compliance with its PM emission limit. The EPA has determined that PM CEMS are reliable and accurate, and there are many facilities that operate PM CEMS, including, but not limited to: Tampa Electric power plants (Florida); Eli Lilly Corporation (Indiana); Dominion power plants (Virginia); and Wisconsin Electric and Power Company power plants (Wisconsin); Longview Power, LLC (West Virginia); Louisville Gas and Electric (Kentucky); and the U.S. Department of Energy (Tennessee). *See*, U.S. EPA, Office of Air Quality Planning and Standards, *PM CEMS Installations, Certifications, and Operations*, Status Report (Updated, Sept. 27, 2005); U.S. EPA, *Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring*, EPA-454/R-00-039 (Sept. 2000).

To assure compliance with the PM emission limit at Shawnee (0.11 lb/MMBtu), each PM CEM should include a continuous particle mass monitor measuring particulate matter concentration, directly or indirectly, on an hourly average basis, and a diluent monitor used to convert the concentration to units of lb/mmBtu. In addition, Shawnee should maintain, in an electronic database, the emission values produced by all PM CEMs in lb/mmBtu and report this data to KDAQ to demonstrate compliance.

### **3. *The Permit Relies on Method 9 for Compliance with 20% Opacity Limit***

The draft Permit requires that Shawnee meet a 20% Opacity limit, except for one 6-minute period in any consecutive 60 minutes. *See* Draft Shawnee Fossil Plant Operating Permit at 2. Yet the Permit only requires TVA to use Method 9 (COMs data is optional) to determine compliance with this Opacity limit. Since Method 9 cannot assure compliance on an hourly or daily basis, Method 9 will not provides reliable data that is representative of Shawnee’s compliance with the applicable opacity limits. As one state regulator noted:

Because compliance with the opacity standard using Method 9 readings is determined for most sources during 1-15 days/year, a typical source would be subjected to 2-30 hours of compliance determinations per year using Method 9. This represents less than 0.5% of the available operating hours. If plant variability and malfunctions causing elevated opacity occur at a source 3% of the

time, the chances of such events coinciding with a Method 9 observation are remote. *See Sierra Club v. Tennessee Valley Authority*, 430 F.3d 1337, 1347 (11th Cir. 2005).

Method 9 is insufficient to assure compliance with the Opacity limit at Shawnee because the 20% opacity limit applies continuously, not biannually. Since Method 9 opacity observations are conducted infrequently, can be performed only during daylight hours, and are subject to weather-related delays, it is unclear how Method 9 monitoring can assure continuous compliance with the applicable 20% opacity limit at Shawnee.

As stated above, infrequent compliance methods are insufficient to demonstrate compliance with an emissions limit that must be met at all times. Here, Shawnee's Opacity limit must be measured in minute-by-minute intervals. Infrequent visual observations of Opacity using Method 9 do not assure compliance with an emission limit that must be met continuously. Instead of Method 9, KDAQ should *require* Shawnee to use COMS data to determine compliance with the Opacity emissions limit. Since Shawnee already has COMS data available, KDAQ can simply require COMS data to be used to assure compliance with the Opacity limit.

***4. The Permit Does Not Contain Monitoring Provisions Sufficient to Assure Compliance with Fugitive Dust Emission Standards and Does Not Contain All Applicable Emission Limits and Compliance Methods Applicable to the Dry Ash Handling Process.***

The draft Permit does not contain adequate monitoring to assure compliance with fugitive dust emissions, especially from Shawnee's dry fly ash handling facility. Fugitive dust emissions from dry fly ash handling operations are of particular concern due to EPA's recent assessment that indicates that, "without fugitive dust controls, there could be exceedances of the National Ambient Air Quality Standards (NAAQS) for fine particulate matter in the air at residences near CCR landfills." *See* U.S. EPA, *Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals ("CCR") from Electric Utilities*, Proposed Rule, 75 Fed. Reg. 35128, 35171 (June 21, 2010); U.S. EPA, *Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills - DRAFT* (Sept. 2009). In particular, EPA's research found that the risks of NAAQS exceedances for PM10 and PM2.5 and other risks were greatly reduced when coal ash handling facilities, such as Shawnee, operate frequent and effective fugitive dust control techniques. *Id.*

In particular, EPA discussed the public health impacts of fugitive dust inhalation from coal ash facilities, stating that EPA regulation could reduce:

excess cancer cases associated with hexavalent chromium inhaled from the air...Over six million people live within the Census population data "zip code tabulation areas" for the 495 electric utility plant locations....Inhalation of hexavalent chromium has been shown to cause lung cancer. ATSDR Texas. Available at: <http://www.atsdr.cdc.gov/toxfaq.html>. By requiring fugitive dust controls, the proposed rule would reduce inhalation exposure to

hexavalent chromium near CCR disposal units. See EPA CCR Proposal at 357-59.

EPA also noted several “non-cancer health effects associated with CCRs are a result of particulate matter inhalation due to dry CCR disposal” including cardiovascular morbidity, respiratory morbidity, mortality, reproductive effects and developmental effects. Id.

One of EPA’s proposed approaches to better regulating fugitive dust from dry ash handling facilities, such as the facility at Shawnee, would adopt a standard of  $35 \mu\text{g}/\text{m}^3$ , the level established for 24-hour NAAQS for fine particulate matter (PM-2.5). See EPA CCR Proposed Rule at 35175. EPA proposed this requirement, “based on the results of a screening level analysis of the risks posed by fugitive dusts from CCR landfills, which showed that, without fugitive dust controls, levels at nearby locations could exceed the  $35 \mu\text{g}/\text{m}^3$  level established as the level of the 24-hour PM 2.5 NAAQS for fine particulate.” Id.

The permit requires no air monitoring, and only visual observations of opacity emissions, using Method 9 during infrequent spot checks, to determine compliance with PM emission limits at Shawnee’s fly ash handling facility. However, dry ash handling facilities have multiple emission points, and each vent, silo, and pile is a potential emission source. Without any data or monitoring, it will be impossible for KDAQ to determine whether PM from dry fly ash handling is affecting air quality for the 2,100 households within a 3-mile radius of Shawnee Fossil Plant.

In addition, as EPA has noted in its assessment of health risks associated with fugitive dust emissions from dry ash handling processes (including sources similar to those at Shawnee, such as wind erosion from storage piles, grading of ash stacks, trucking operations, etc.) the level of risk depends on the stringency of control methods. The Title V permit does not require TVA to employ any kind of simple and inexpensive control techniques – such as using a water truck to control fugitive dust on a daily basis – that could minimize EPA’s documented risks associated with dry ash inhalation. Moreover, there is no distinction in the Part 70 requirements of continuous and adequate emission monitoring between stacks and fugitive emissions.

To correct the permit deficiencies, KDAQ should:

- Review EPA’s recent study, *Inhalation of Fugitive Dust: A Screening Assessment of the Risks Posed by Coal Combustion Waste Landfills - DRAFT* (US EPA 2009), and other EPA materials related to fugitive dust emissions from dry coal ash handling and incorporate preventative measures into the Shawnee Title V permit to reduce and control fugitive dust emissions from the Dry Ash Handling Process.
- Clearly state the applicable PM emission limit for the process, for each source in the process, and make available the data on which the emission limit is based.
- Prepare and clearly state the applicable compliance methods that will assure compliance with the PM emissions limit, including the type of monitoring devices to be used and the frequency of testing.
- Clearly state within the Permit, or include as an attachment, all documents that establish emission limits or compliance and monitoring requirements for the Dry Ash Handling Process. This includes all documents previously “incorporated by reference,” correspondence, and other permits or permit applications. All applicable

emission limits, monitoring or compliance methods should be available and transparent in the Shawnee Fossil Plant Title V permit.

#### IV. CONCLUSION

For the foregoing reasons, the proposed renewal draft Title V permit for Shawnee Fossil Plant does not comply with the Clean Air Act or its implementing regulations. Commenters thank you for the opportunity to comment on the proposed renewal draft Title V permit for Shawnee Fossil Plant.

Sincerely,



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