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September 6, 2012

VIA FEDEX OVERNIGHT

Lisa P. Jackson, Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Kathleen Cox
U.S. Environmental Protection Agency
Region III
Air Protection Division
1650 Arch Street (3AP01)
Philadelphia, PA 19103

RE: Petition to Object to the Proposed Title V Permit for Sunbury Generation, LP's Power Plant Issued by the Pennsylvania Department of Environmental Protection (TVOP 55-00001)

Dear Administrator Jackson and Manager Cox:

Enclosed please find a copy of a petition from the Sierra Club to EPA seeking EPA's objection to the proposed Title V permit for Sunbury Generation, LP issued on May 25, 2012, by Pennsylvania Department of Environmental Protection, No. 55-00001. Also enclosed is a disc containing an electronic copy of the petition, and all exhibits cited therein.

Please let me know if there is anything further I can provide.

Respectfully submitted,

/s Kathryn Amirpashaie

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cc via FedEx. Muhammad Zaman, Air Quality Program Manager, Pennsylvania Department of Environmental Protection, Northcentral Region, Air Quality Program, 208 West Third Street, Williamsport, Pennsylvania 17701 (with attachments)

Ed Griegel, VP Operations, Sunbury Generation, LP, PO Box 517, Old Trail Rd, Shamokin Dam, PA 17876 (with attachments)

BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF THE PROPOSED TITLE V PERMIT FOR	)	
SUNBURY GENERATION, LP POWER PLANT	)	ID NO. 55-00001
PROPOSED TITLE V/STATE OPERATING PERMIT IN SNYDER COUNTY, PA	)	
ISSUED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION	)	

PETITION TO OBJECT TO THE PROPOSED TITLE V PERMIT FOR SUNBURY GENERATION, LP'S POWER PLANT ISSUED BY THE PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

PETITION TO OBJECT TO THE PROPOSED TITLE V PERMIT FOR SUNBURY GENERATION, LP'S POWER STATION

As per Section 505 of the Clean Air Act ("CAA"), the Sierra Club hereby respectfully petitions EPA to object to the proposed Title V permit for Sunbury Generation LP's Power Plant in Snyder County, Pennsylvania ("Sunbury"), issued by Pennsylvania Department of Environmental Protection ("PaDEP"). The Proposed Permit as drafted contains provisions that are not in compliance with applicable requirements under the CAA and, accordingly, objection by the EPA is proper. 42 U.S.C. § 7661d(b). Specifically, (1) the Proposed Permit fails to include numerical emission limits and monitoring sufficient to prevent the plant from causing impermissible air pollution in the form of harmful concentrations of sulfur dioxide as well as violations of an applicable acid rain provision,[1] (2) the Proposed Permit fails to require adequate monitoring to ensure compliance with its particulate matter emission limits,[2] (3) the Proposed Permit fails to require adequate monitoring to ensure compliance with its opacity limits,[3] and (4) certain aspects of the Proposed Permit which have Prevention of Significant Deterioration ("PSD") and New Source Review ("NSR") implications are improper.[4] These objections, as well as other issues with the current version of the permit, were timely raised in our comments to PaDEP.[5] Accordingly, the EPA should object to the permit's issuance by PaDEP.

INTRODUCTION

A. Procedural Background - The Sunbury Plant and its Title V Permitting

Sunbury is a power plant located in Snyder County, Pennsylvania, consisting of six coal-filed boilers—1A, 1B, 2A, 2B, 3, and 4—that came online between 1949 and

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[1] *See* Sierra Club Comments on Sunbury Draft Title V Permit (hereinafter "Sierra Club Comments"), at 1, attached hereto as Exhibit 1.

[2] *See* Sierra Club Comments at 18.

[3] *See* Sierra Club Comments at 19 and 26.

[4] *See* Sierra Club Comments at 11.

[5] All grounds for objection were timely raised in the comments submitted by the Sierra Club on the Proposed Sunbury Permit. 42 U.S.C. § 7661d(b)(2). Additional issues with the Sunbury Proposed Permit include the following: the Proposed Permit fails to address discrepancies in heat input rates for the Plant's coal-fired boilers; the Proposed Permit lacks certain necessary inspection, monitoring, and reporting requirements; the permittee has failed to conduct a proper BART analysis for its combustion turbines; the Proposed Permit impermissibly claims to apply a permit shield to unidentified future projects; the Plant's CAM Plan is inadequate; the Proposed Permit fails to address certain PSD and NSR implications; and the Proposed Permit fails to provide for consideration of Credible Evidence when determining permit compliance. These are independent grounds for objection to the Proposed Permit, and we incorporate by reference the discussion of these issues contained in our June 25, 2012, comments into this Petition.

1953. Last year, in 2011, Sunbury emitted 1,636 tons of nitrogen oxides ("NO_x"), 15,883 tons of sulfur dioxide ("SO_2"), and 17,518 tons of carbon dioxide ("CO_2").[6]

Sunbury's current Title V permit expired on November 16, 2005. On May 12, 2005, prior to that expiration date, PaDEP received an application from the Plant for renewal of its Title V permit. Seven years later, on May 25, 2012, PaDEP issued a Proposed Permit for public notice and comment.[7] *See* Proposed Permit, attached hereto as Exhibit 2. On June 25, 2012, the Sierra Club submitted timely comments on that Proposed Permit. Sierra Club Comments, Exhibit 1.

According to the CAA, within 45 days of receipt of a proposed Title V permit, the Administrator of the EPA "shall . . . object" to the permit's issuance if it "contains provisions that are determined by the Administrator as not in compliance with the applicable requirements" of the CAA and "the requirements of an applicable implementation plan." 42 U.S.C. § 7661d(b)(1). If EPA does not object during this period, any person may petition the Administrator for issuance of an objection. *Id.* at § 7661d(b)(2). EPA's 45-day review period for Sunbury's Proposed Permit began on May 24, 2012, and ended on July 9, 2012. The 60-day public petition period end date is set for September 7, 2012.[8]

B. Statutory and Regulatory Background

1. *The SO_2 NAAQS*

Under the CAA, EPA is required to promulgate National Ambient Air Quality Standards ("NAAQS") for SO_2 and other pollutants to protect public health and welfare. 42 U.S.C. § 7409. As per Section 109 of the CAA, the NAAQS are standards requisite to protect the public health, allowing an adequate margin of safety. 42 U.S.C. § 7409(b). In June of 2010, EPA issued a new SO_2 NAAQS, recognizing that the prior 24-hour and annual SO_2 standards did not adequately protect the public against adverse respiratory effects associated with short term (5 minutes to 24 hours) SO_2 exposure. 35 Fed. Reg. 35,520 (June 22, 2010).

The new 2010 SO_2 NAAQS is a one-hour standard set at 196 micrograms per cubic meter (or 75 ppb). 40 C.F.R. § 50.17(a). The standard was established in the form of the 99th percentile of the annual distribution of the daily maximum one-hour average

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[6] Data taken from U.S. EPA Clean Air Markets Program Data, *available at* http://ampd.epa.gov/ampd/.

[7] On April 6, 2012, the Sierra Club, along with other organizations, filed an administrative appeal with the Pennsylvania Environmental Hearing Board, objecting to PaDEP's failure to timely issue Title V permits for nine coal-fired power plants in Pennsylvania, including the Sunbury Plant. *See* Notice of Appeal, *Sierra Club v. Commonwealth of Pennsylvania Department of Environmental Protection* (Pa Envtl. Hearing Bd. April 6, 2012), attached hereto as Exhibit 3.

[8] *See* U.S. EPA, Deadlines for Public Petitions to the Administrator for Permit Objections (permit number 63-00016), *available at* http://www.epa.gov/reg3artd/permitting/petitions3.htm; 42 U.S.C. § 7661d(b).

concentrations. *Id* at § 50.17(b). Due to both the shorter averaging time and the numerical difference, the new one-hour SO_2 NAAQS is far more stringent than the prior SO_2 NAAQS and is projected to have enormous beneficial effects for public health—EPA has estimated that 2,300-5,900 premature deaths and 54,000 asthma attacks a year will be prevented by the new standard. Envtl. Prot. Agency, *Final Regulatory Impact Analysis (RIA) for the* SO_2 *National Ambient Air Quality Standards (NAAQS) tbl. 5.14* (2010), attached hereto as Exhibit 4. Put another way, the presence of concentrations of SO_2 air pollution above the standard in the NAAQS cause thousands of premature deaths and tens of thousands of asthma attacks every year.

In its final rule, EPA recognized the "strong source-oriented nature of SO_2 ambient impacts," Final Rule, 75 Fed. Reg. at 35,370, and concluded that the appropriate methodology for purposes of determining compliance, attainment, and nonattainment with the new NAAQS is modeling. *See* Final Rule, 75 Fed. Reg. at 35,551 (describing dispersion modeling as "the most technically appropriate, efficient, and readily available method for assessing short-term ambient SO_2 concentrations in areas with large point sources."). Accordingly, in promulgating the new SO_2 NAAQS, EPA explained that, for the one-hour standard, "it is more appropriate and efficient to principally use modeling to assess compliance for medium to larger sources . . . ." *Id.* at 35,570. As such, EPA has noted that "even if monitoring does not show a violation," that absence of data is not determinative of attainment status absent modeling, and that monitoring in general is "less appropriate, more expensive, and slower to establish." *Id.*; *see also Montana Sulphur & Chemical Co. v. EPA*, 666 F.3d 1174 (9th Cir. 2012) (affirming use of modeling to ascertain SO_2 pollution impacts); U.S. EPA, Final Response to Petition From New Jersey Regarding SO_2 Emissions From the Portland Generating Station, 76 Fed. Reg. 69,052 (Nov. 7, 2011) (using modeling to set emission limits sufficient to prevent air pollution).

2. *Regulation of Sulfur Dioxide in Pennsylvania*

The CAA, federal regulations, and Pennsylvania state regulations incorporated into the SIP demand that Sunbury's final Title V permit include enforceable emission limitations and standards and such other conditions as are necessary to assure compliance with all applicable requirements at the time of permit issuance. *See* 42 U.S.C. § 7661c(a); 40 C.F.R. § 70.6(a)(1); 25 Pa. Code § 127.512. Indeed, EPA may not even approve a Title V program unless it is persuaded that the permitting authority will "assure that upon issuance or renewal permits incorporate emissions limitations and other requirements in an applicable implementation plan." 42 U.S.C. § 7661a(b)(5)(C).

The federally-approved Pennsylvania SIP contains a requirement that "**[n]o person shall** cause, suffer, or **permit air pollution**" in Pennsylvania. 25 Pa. Code §121.7 (emphasis added). Pennsylvania regulations incorporated into the federally approved SIP define "air pollution" as follows:

> Air pollution—The presence in the outdoor atmosphere of **any form of contaminant**, including, but not limited to, the discharging from stacks, chimneys, openings, buildings, structures, open fires, vehicles, processes or any other source of any smoke, soot, fly ash, dust, cinders, dirt, noxious or obnoxious acids, fumes, oxides, gases, vapors, odors, toxic, hazardous or radioactive substances, waste or other matter in a place, manner or **concentration inimical or which may be inimical to public health**, **safety or welfare or which is or may be injurious to human**, plant or animal **life** or to property or which unreasonably interferes with the comfortable enjoyment of life or property.

25 Pa. Code § 121.1 (emphasis added).[9]

As a standard or limitation under the SIP, Pennsylvania's prohibition against air pollution constitutes an "emission standard or limitation" with which the Plant's Title V permit must assure compliance. *See* 25 Pa. Code § 121.7; *see also* 25 Pa. Code § 127.512(h); 25 Pa. Code § 121.1 ("applicable requirements" (ii)). Accordingly, Title V permits issued in Pennsylvania must explicitly reference the prohibition of air pollution, *see* 40 C.F.R. § 70.6(a)(1)(i) ("The permit shall specify and reference the origin of authority for each term or condition . . ."), and also include terms that assure that the Plant does not allow pollution of the air by emitting SO_2 in concentrations inimical or which may be inimical to public health. *See* 35 P.S. § 4008; *see also* 40 C.F.R. § 70.6(a)(1); 25 Pa. Code § 121.7; 25 Pa. Code § 121.1 (defining "air pollution").

Pennsylvania's acid rain program constitutes a further applicable requirement that also is required to be incorporated in Title V permits issued in Pennsylvania. As per the Pennsylvania SIP, "applicable requirements" are defined as, "[r]equirements which apply to any source at a Title V facility including the following: . . . A standard or other requirement of the acid rain program under Title IV of the Clean Air Act (42 U.S.C.A. § § 7641-7651o) or the regulations thereunder." 25 Pa. Code § 121.1. Pennsylvania's Title IV acid rain provisions include a condition that, "[i]n addition to the other requirements of [Chapter 127], permits issued under this section shall prohibit . . . [e]xceeding applicable emission rates or standards, including ambient air quality standards." 25 Pa. Code § 127.531(f)(2) (emphasis added); *see also* 42 U.S.C. § 7651g(d)(3) (mandating that states issue permits that satisfy the requirements of both Title V and Title IV); U.S. EPA, Clean Air Act Final Full Approval Of Operating Permits Program, 61 Fed. Reg. 39,597, 39,598 (July 30, 1996) (noting the requirement that "Pennsylvania's Title V program be operated in accordance with the requirements of Title IV and its implementing regulations," including 25 Pa. Code § 127.531).

[9] EPA approved these portions of Pennsylvania's SIP, without specific comment, decades ago. 37 Fed. Reg. 10,842, 10,889 (May 31, 1972). They are still part of the SIP today. *See* 40 C.F.R. §52.2020(c)(1) (listing the "Prohibition of Air Pollution" provision as "EPA-approved").

3. *Title V Permit Terms Sufficient to Ensure Compliance with Applicable Requirements*

In addition to the substantive obligation to convert general requirements to specific terms, permits must also provide for sufficient monitoring to assure compliance with the permit's terms and all applicable requirements. These monitoring restrictions consist of both "periodic" and "umbrella" monitoring rules. *See generally Sierra Club v. EPA*, 536 F.3d 673 (D.C. Cir. 2011) (hereinafter "*Sierra Club*") (discussing these rules). The periodic monitoring rule provides that where an applicable requirement does not, itself, "require periodic testing or instrumental or noninstrumental monitoring," the permit-writer must develop terms directing "periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit." 40 C.F.R. § 70.6(a)(3)(B). In other words, if NAAQS compliance is a condition of the permit, the permit must contain monitoring of a frequency and type sufficient to ensure compliance.

The "umbrella" monitoring rule, 40 C.F.R. § 70.6(a)(3)(C), backstops this requirement by making clear that permit writers must also correct "a periodic monitoring requirement inadequate to the task of assuring compliance," *Sierra Club*, 536 F.3d at 675. This "gap-filler" makes doubly clear that adequate monitoring is required. *Id.* at 680.

EPA has since affirmed, in a post-*Sierra Club* Title V petition ruling, that these requirements are quite rigorous, making clear that permit writers must develop and "supplement monitoring to assure . . . compliance" on the basis of an extensive record. *In re United States Steel Corp*., Petition No. V-2009-03, 2011 WL 3533368, at *5 (EPA Jan. 31, 2011). ("The rationale for the monitoring requirements . . . must be clear and documented in the permit record," and adequate monitoring is determined by careful, content-specific inquiry into the nature and variability of the emissions at issue). Relevant Pennsylvania regulations are in accord: applications must include all relevant compliance information, 25 Pa. Code § 127.503(3), and periodic monitoring "sufficient to yield accurate and reliable data from the relevant time that are representative of a source's compliance with the permit," 25 Pa. Code § 127.511(a)(2), and the permit, as a whole, must contain "compliance certification, testing, monitoring, reporting and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit." 25 Pa. Code § 127.513(1).

Thus, where there exists analysis sufficient to determine monitoring requirements and emission limits protective of a NAAQS as a numerical translation of the prohibition on air pollution or the prohibition on violating the SO_2 NAAQS as part of the acid rain provision under Title IV of the CAA, those limits must be incorporated in Title V permitting in Pennsylvania.

4. *Particulate Matter*

Particulate matter is treated under the CAA as two distinct air pollutants: PM_{10} (PM that is equal to or less than 10 micrometers in diameter) and $PM_{2.5}$ (PM that is equal to or less than 2.5 micrometers in diameter). *See* National Ambient Air Quality Standards, *available at* http://www.epa.gov/air/criteria.html. Not only do these two pollutants have different physical and behavioral characteristics, *see* EPA "Clean Air Fine Particle Implementation Rule" 72 Fed. Reg. 20586, 20599 (April 25, 2007) ("$PM_{2.5}$ . . . differs from PM_{10} in terms of atmospheric dispersion characteristics, chemical composition, and contribution from regional transport"), PM_{10} and $PM_{2.5}$ pose different levels of risk to human health. While PM_{10} particles are small enough to be inhaled and accumulate in the respiratory system, $PM_{2.5}$ particles, because of their extremely small size, can penetrate deep into the lungs, enter the blood stream, and cross the blood-brain barrier. *See* Basic Information on Fine Particle (2.5) Designations, http://www.epa.gov/pmdesignations/basicinfo.htm. As a result, $PM_{2.5}$ pollution is arguably even more dangerous and can cause even more severe and long-term adverse health effects than PM_{10}. *See* L.K Fonken et al., *Air Pollution Impairs Cognition, Provokes Depressive-like Behaviors and Alters Hippocampal Cytokine Expression and Morphology*, Molecular Psychiatry 16, 988 (2011), *available at* https://ckm.osu.edu/sitetool/sites/neuroscience/documents/AirPollution.pdf.

OBJECTIONS

A. The Proposed Permit Fails to Include SO_2 Emission Limits Sufficient to Prevent Harmful Air Pollution and Violations of the Applicable Acid Rain Provision

Due to the inadequate SO_2 emissions limits set forth in the Proposed Permit, EPA must object to issuance of the permit as drafted. This is because (1) Pennsylvania's SIP and state law contain an explicit prohibition on air pollution, and the SO_2 NAAQS is dispositive of the level of SO_2 constituting air pollution, and (2) the SIP contains an explicit prohibition on violating the SO_2 NAAQS in accordance with the acid deposition control program (Title IV) of the CAA.[10]

1. *The Proposed Permit Fails to Include Sufficiently Stringent SO_2 Numerical Emission Limits.*

As a standard or limitation under the SIP, Pennsylvania's prohibition against air pollution—which states that "[n]o person may permit air pollution as that term is defined in the act"—constitutes an "emission standard or limitation" with which the final Title V permit must assure compliance. *See* 42 U.S.C. § 7661c(a); 40 C.F.R. § 70.6(a)(1); 25 Pa. Code § 127.512(h); 25 Pa. Code § 121.1 ("applicable requirements" (ii)); *see also* 25 Pa. Code § 121.7. The new primary one-hour SO_2 NAAQS was designed specifically to prevent the harmful effects of SO_2 pollution on human health. Thus, the specific limits set forth in the NAAQS are dispositive *authority* that such a level of SO_2

[10] This issue was raised on Page 1 of the comments submitted by Sierra Club on June 25, 2012.

pollution is "inimical to public health" or "injurious" to human life. *See* 25 Pa. Code § 121.1. In other words, violations of the one-hour SO_2 NAAQS constitute violations of the Pennsylvania SIP's prohibition on air pollution.[11] Essentially, the NAAQS provides the numerical translation of the SIP's prohibition on air pollution and, as an applicable requirement, must be translated into the Plant's Title V permit limits in that fashion. *See* 40 C.F.R. § 70.6(a)(1); *see also* 25 Pa. Code § 127.512(h). Therefore, the Title V permit must include the prohibition of 25 Pa. Code § 121.7 and set forth SO_2 emissions limits which actually assure compliance with the health-based NAAQS (thereby ensuring that the permit's terms will comply with the prohibition on air pollution). *See id.* In addition, because the Pennsylvania SIP states that "applicable requirements" for Title V sources includes standards or other requirements "of the acid rain program under Title IV of the Clean Air Act . . . or the regulations thereunder", 25 Pa. Code § 121.1 ("applicable requirements" (vi)), and Pennsylvania's acid rain provision states that, "[i]n addition to the other requirements of [Chapter 127], permits issued under [Section 127.531] shall prohibit . . . [e]xceeding applicable emission rates or standards, including ambient air quality standards," 25 Pa. Code § 127.531(f)(2) (emphasis added), preventing exceedances of the NAAQS is, again, an applicable requirement with which the Plant's permit must assure compliance.

Here, expert analysis of air dispersion modeling of the Plant demonstrates that the SO_2 limits in the Proposed Permit are incompatible with these applicable requirements. *See* Wingra Engineering, S.C., *Sunbury Generation Facility, Shamokin Dam, Pennsylvania, Sierra Club Evaluation of Compliance with 1-hour SO_2 NAAQS*, November 9, 2011 (hereinafter "Sunbury Modeling"), attached as Exhibit 5. This modeling was based on the facility's permitted SO_2 emissions limitations—which mirror those in the Proposed Permit—in the form of the 4.0 lb/MMBtu one-day average block, with the extremely conservative assumption of treating the one-day averaging time limit as if it were an hourly emission limit.[12] *See id.* at 4. The analysis was conducted in adherence to all available USEPA guidance for evaluating source impacts on attainment of the one-hour SO_2 NAAQS via aerial dispersion modeling, including the AERMOD Implementation Guide; USEPA's Applicability of Appendix W Modeling Guidance for the 1-hour SO_2 National Ambient Air Quality Standard, August 23, 2010; modeling guidance

[11] EPA has recently affirmed that where prohibitions on air pollution are part of a SIP, they are enforceable requirements. *See* Letter from Genevieve Damico, Chief, Air Permits Section EPA Region 5 to Michael Ahern, Manager, Permit Issuance, Ohio EPA (Apr. 25, 2012), attached hereto as Exhibit 6. EPA wrote that "if nuisance provisions apply to a stationary source either because it is subject to the provisions in the [state] SIP or because a permit issued pursuant to a SIP-approved program contains the requirements, *the terms must be included in the federally enforceable side of the source's Title V permit.*" *Id.* at 1 (emphasis added). Region 5 has also at least once issued a notice of violation under Illinois's nuisance provision, *see* NOV for H. Kramer & Co. (Apr. 20, 2011), attached hereto as Exhibit 7, informing a polluter that it had violated the provision because its emissions caused violations of a NAAQS standard.

[12] The SO2 emissions limits in the Proposed Permit are identical to those in the current Title V permit. *Compare* Proposed Permit, pages 26, 47, 68, 89, 110, and 131 with Sunbury Title V permit, as amended in June 2003, pages 25, 32, 38, 45, 52, and 59, attached as Exhibit 8.

promulgated by USEPA in Appendix W to 40 CFR Part 51; and USEPA's March 2011 Modeling Guidance for SO_2 NAAQS Designations, *available at* http://www.epa.gov/ttn/scram/SO_2%20Designations%20Guidance%202011.pdf.

The modeling results indicate that at emission levels allowed by the Proposed Permit and maximum heat input values set forth in the Proposed Permit, Sunbury by itself is predicted to cause levels of SO_2 pollution severely above the NAAQS.[13] Specifically, at these permitted emission levels Sunbury is predicted to cause peak impacts of 13,751.4 µg/m^3. *Sunbury Modeling* at 4. This is **over seventy times** greater than the NAAQS of 196.2 µg/m^3.

Modeled One-Hour SO_2 Impacts

Emission Rates	Project Conc. (ug/m3)	Background Conc. (ug/m3)	Total Conc. (ug/m3)	NAAQS (ug/m3)	NAAQS Exceed	Percent Over NAAQS
Allowable	13,691.2	60.2	13,751.4	196.2	**YES**	**7,008.9%**
Reported	10,048.7	60.2	10,108.9	196.2	**YES**	**5,152.3%**

Based on the modeling, a reduction in allowable emissions of at least 99% would be required to ensure that ambient concentration levels of SO_2 do not exceed the standard. *Id.* at 4. In other words, to ensure that the Plant will not cause or contribute to violations of the one-hour SO_2 NAAQS and that the Title V permit will ensure compliance with all applicable requirements—namely the State's prohibition on air pollution and its acid rain provisions—the Plant's Title V permit must contain a facility-wide SO_2 emissions limit that is at least as restrictive as 181.2 lbs/hr, measured on an hourly basis. At the heat rates in the Proposed Permit, this corresponds to an emission limit of 0.04 lbs/MMBtu.[14] Yet, as currently drafted, the Proposed Permit limits emissions of SO_2 from the Plant's coal fired boilers to the following:

- 3.7 lbs/MMBtu (thirty-day running average, not to be exceeded at any time
- 4.0 lbs/MMBtu (daily average, not to be exceeded more than 2 days in any running 30-day period)
- 4.8 lbs/MMBtu (daily average, not to be exceeded at any time)

[13] The model was also run using the higher boiler heat input values presented in the Plant's 2007 application for the FGD project which resulted in even higher impacts. In its review memo for the draft permit renewal, PaDEP has recommended that "the revised operating permit contain requirements, which limit the heat input of each of the boilers to those values listed in the existing Title V operating permit." PaDEP Title V Operating Permit Renewal Application Review Memo, Page 3 (May 15, 2012) attached as Exhibit 9.

[14] This limit was calculated using the following formula: lb/MMBtu = lb/hr divided by MMBtu/hr. That is 181.2/4,560 = 0.0397368. The 4,560 MMBtu/hr facility-wide heat input was calculated by adding together the source capacity values for each of the six coal-fired boilers (i.e. 525, 525, 525, 525, 1,100, 1,360).

Proposed Permit at 26, 47, 68, 89, 110, and 131. These proposed limits are plainly insufficient to assure compliance with the applicable requirements.

There is, moreover, no indication that PaDEP assessed the Proposed Permit's SO_2 emission limits specifically to ensure that Sunbury would not cause a condition of air pollution or violate applicable requirements of the Title IV Acid Rain Program. In fact, the SO_2 emissions limits in the Proposed Permit are identical to those contained in the previous permit—a permit which was issued a decade prior to promulgation of the new one-hour NAAQS. Notably, neither the Proposed Permit nor PaDEP's review memo of the Proposed Permit even mentioned the new one-hour standard. In addition, the SO_2 emissions standards set forth in the permit have been imported from 25 Pa. Code § 123.22, a regulation which has not been revised in over a quarter century. There is, accordingly, no reason to believe that the proposed SO_2 emissions limits will comply with contemporary applicable requirements, including the new one-hour NAAQS. Indeed, the air dispersion analysis performed by the modeling expert demonstrates conclusively that the limits contained in the new permit impermissibly allow harmful air pollution and violate the state's relevant acid rain provision.

Just as is required when certain monitoring, recordkeeping, or reporting requirements are insufficient to assure compliance with an applicable requirement, here, the Agency should employ a gap-filling method to ensure Sunbury's permit contains numerical SO_2 limits sufficient to ensure compliance with these applicable requirements. Such gap-filling is necessary since the final Title V permit must include emissions limitations and standards that assure compliance with all applicable requirements at the time of permit issuance, and the prohibition on air pollution and acid rain provision are current applicable requirements. *See* 40 C.F.R. § 70.6(a)(1). Ensuring that the permit contains appropriate limits is essential since the Title V permit is the critical tool enabling the Plant, PaDEP, EPA, and the public to identify all applicable requirements that apply to the Plant's air emissions and to determine whether the facility is complying with those requirements. Because the Proposed Permit fails to ensure compliance with these requirements, EPA should object.

2. *The Proposed Permit Fails to Include Proper Averaging Periods in its SO_2 Emission Limits.*

In addition to lacking sufficiently stringent numerical SO_2 emissions limits, the Proposed Permit also fails to ensure that the averaging periods associated with its SO_2 emissions limits will assure compliance with all applicable standards.[15] As indicated above, both the applicable prohibition on harmful air pollution and acid rain provision constitute requirements that Sunbury not cause exceedances of the SO_2 NAAQS. Also as indicated above, the maximum concentration of SO_2 permitted to exist in the ambient air is set forth **as a one-hour average**. *See* 25 Pa. Code § 131.1; 40 C.F.R. § 50.17(a).

[15] The Proposed Permit sets the averaging periods for the Plant's SO_2 limits as a 30-day running average and a daily average. *See* Proposed Permit at 26, 47, 68, 89, 110, and 131.

Further, under Pennsylvania's regulations for sampling and testing, the averaging time for determining emissions of SO_2 is one hour. *See* 25 Pa. Code § 139.13(6). Accordingly, EPA must object to the Proposed Permit and demand that PaDEP revise the permit so that its SO_2 emissions limits are based on an hourly averaging period—an hourly averaging period is necessary to meet an hourly air quality standard.[16]

Additionally, the Proposed Permit fails to require compliance with the standard at all times. The health data relied upon by EPA in promulgating the new one-hour SO_2 NAAQS overwhelmingly indicate that increased asthma attacks and hospital visits are attributable to short term concentrations of sulfur compound concentrations in the air. Even short term spikes as brief as five minutes can cause severe health issues for certain at-risk individuals. *See* 75 Fed. Reg. at 35,524; *see also* EPA's Air and Radiation webpage for SO_2 and Health, *available at* http://www.epa.gov/airquality/sulfurdioxide/health.html. Due to the extreme effects of even short-term exposure to SO_2 pollution, it is vitally important to require compliance with an SO_2 emissions limit at all times. A valid permit should, thus, ensure that the SO_2 emissions standard applies "at any time" or, at the very least, be based on a one-hour average. Thus, EPA should object to the Proposed Permit for its failure to ensure continuous compliance.

3. *The Proposed Permit Fails to Include Monitoring Requirements Sufficient to Ensure Compliance with Applicable Requirements.*

Finally, the monitoring requirements for SO_2 emissions in the Proposed Permit are insufficient to assure compliance with applicable standards. Monitoring requirements must "assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement." 40 C.F.R. § 70.6(a)(3)(i)(B); 25 Pa. Code § 127.511(a)(2) (emphasis added).

EPA's Part 70 monitoring rules (40 C.F.R. §§ 70.6(a)(3)(i)(A)-(B), (c)(1)) are designed to satisfy the statutory requirement of the CAA that "[e]ach 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). Permitting authorities must take three steps to satisfy the monitoring requirements in the Part 70 regulations. First, under 40 C.F.R. § 70.6(a)(3)(i)(A), permitting authorities must ensure that Title V permits contain all applicable monitoring requirements. Second, if an applicable CAA requirement contains no periodic monitoring, permitting authorities must add "periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit." 40 C.F.R. § 70.6(a)(3)(i)(B).

[16] This of course makes logical sense. Even if the SO_2 emission limit was numerically appropriate (which here, in the Proposed Permit, it is not), meeting the limit on a 24-hour average would mean that the facility could violate the standard for numerous hours a day, as long as the day were balanced out with a few hours of operation below the emission limit. This would be entirely contrary to the entire genesis of the one-hour SO_2 NAAQS, which was a recognition that short-term exposure to SO_2 for time periods as low as five minutes could cause serious health problems. *See* 75 Fed. Reg. at 35,524.

Third, if there is some periodic monitoring in the applicable requirement, but that monitoring is not sufficient to assure compliance with permit terms and conditions, permitting authorities must supplement monitoring to assure such compliance. 40 C.F.R. § 70.6(c)(1). In all cases, the rationale for the selected monitoring requirements must be clear and documented in the permit record. See 40 C.F.R. § 70.7(a)(5).

Sunbury's Proposed Title V permit lacks a monitoring/testing method for SO_2 emissions that will assure compliance with the Plant's SO_2 emissions limits. Because Pennsylvania's sampling and testing methods for SO_2 fail to set forth an averaging period for determining emissions of SO_2, *see* 25 Pa. Code § 139.13, Sunbury's Title V permit must include supplemental monitoring requirements for SO_2 which include adequate frequency to determine compliance with the one-hour SO_2 standard. Here, in order to determine whether the plant is in fact complying with the applicable standards, the Proposed Permit's monitoring requirements for SO_2 should have provided that SO_2 emissions be monitored and measured on an hourly basis through the use of the Plant's Continuous Emissions Monitoring System ("CEMS") at all times that the units are operating. Because it fails to do so, EPA should object to the Proposed Permit.

B. The Proposed Permit Fails to Require Adequate Monitoring to Ensure Compliance with Particulate Matter Emission Limits

Sunbury's Proposed Permit fails to require monitoring of particulate matter emissions adequate to ensure compliance with applicable limits; instead, the Proposed Permit requires that particulate matter emissions from the Plant's coal-fired boilers be tested only once every two years.[17] Because the once-every-two years stack tests the Proposed Permit contemplates are wholly inadequate to ensure that the continuous particulate matter emission limits for the Plant are met, EPA should object and require the incorporation of more stringent monitoring requirements. Here, that would be a PM continuous emissions monitor ("PM CEMS").[18]

As noted above, the CAA requires that permits "shall set forth . . . monitoring . . . requirements sufficient to assure compliance" with emissions limits in a Title V permit, 42 U.S.C. § 7661c(c). Particularly, the frequency of emissions monitoring must reflect the averaging time used to determine compliance. *Sierra Club*, 536 F.3d at 765 (a yearly monitoring requirement would not likely adequately address a daily maximum emission limit); *see also* U.S. EPA, Objection to Proposed Title V Operating Permit for TriGen-Colorado Energy Corporation (Sept. 13, 2000) ("a one-time test does not satisfy the periodic monitoring requirements" under the CAA for PM), attached hereto as Exhibit 10. Again, EPA has promulgated regulations in Part 70 that describe the three steps

[17] This issue was raised on Page 18 of the comments submitted by Sierra Club on June 25, 2012.

[18] Continuous emissions standards, such as the PM emission limits here, require that emissions be monitored continuously. Stack testing as contemplated in the permit, combined with opacity monitoring, is insufficient to assure compliance with Sunbury's PM emission limits. The permit must comply with *Sierra Club v. EPA*, and also be drafted to ensure the monitoring methods will adequately address the variability in PM emissions from coal combustion.

permitting authorities must take to fulfill the monitoring requirement from section 504(c). *See* 40 C.F.R. §§ 70.6(a)(3)(i)(A), 70.6(a)(3)(i)(B), and 70.6(c)(1); *see also Sierra Club v. EPA,* 536 F.3d at 675, 678 (D.C. Cir. 2008) (setting for the steps and reiterating the necessity to supplement monitoring requirements: "[w]e read Title V to mean that someone must fix these inadequate monitoring requirements."); *see also In re United States Steel Corporation – Granite City Works*, Petition No. V-2009-03, Order Responding to Petitioner's Request that the Administrator Object to Issuance of State Operating Permit, at 6-7 (hereinafter "*U.S. Steel*"), attached hereto as Exhibit 11. In addition to setting forth adequate monitoring requirements for emission limits, the permitting authority is required to set forth its rationale in a statement of basis describing why the chosen monitoring regime is adequate to assure compliance with the emissions limit. 40 C.F.R § 70.7(a)(5); *U.S. Steel* at 7.

The determination of what monitoring is adequate is a context-specific exercise. *U.S. Steel* at 7. EPA has described the permit writer's monitoring analysis as *beginning* by "assessing whether the monitoring required in the applicable requirement is sufficient to assure compliance with the permit terms and conditions." *Id.* Appropriate factors for the permit writer to consider include: (1) variability of emissions from the unit in question; (2) likelihood of violation of the requirements; (3) whether add-on controls are being used for the unit to meet the emission limit; (4) the type of monitoring, process, maintenance, or control equipment data already available for the emission unit; and (5) the type and frequency of the monitoring requirements for similar emission units at other facilities. *Id.* Applying these factors, EPA has found that stack testing for particulate matter emissions once every five years was insufficient to assure compliance. *Id.* at 31.

Here, the PM emission standard for Sunbury's coal-fired boilers is derived from 25 Pa. Code § 123.11(a)(3), and prohibits the emission of particulate matter from Boilers 1A, 1B, 2A, and 2B in excess of the rate determined by a specific formula set forth in the permit, and in excess of 0.1 pounds per million Btu of heat input when the heat input to the combustion unit in millions of Btus per hour is equal to or greater than 600 from Boilers 3 and 4. Proposed Permit at 26, 47, 68, 89, 110, and 131. The Pennsylvania SIP does not contain provisions requiring specific types of PM monitoring; accordingly, the second scenario described in *Sierra Club* applies: PaDEP is required to include in Title V permits "periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit." 536 F.3d at 675.

However, the monitoring frequency required by Sunbury's Proposed Permit is not adequate to assure compliance with the hourly limits. The Proposed Permit provides that stack testing for PM should occur within one year of the issuance the permit and approximately every two years thereafter. Proposed Permit at 29, 50, 71, 92, 113, and 134. Yet it does not provide any explanation for why monitoring once every couple of years is adequate to assure compliance with a continuous standard. Nor could it: as EPA has found, such infrequent monitoring is unlawful. *See U.S. Steel* at 7.

Instead, PM CEMS are required, as an application of the five *U.S. Steel* factors makes clear.[19]

First, looking at factors one and three together, the variability of emissions, especially as they relate to the add-on controls used by the plant in this case, strongly indicate the necessity for continuous monitoring. Sunbury employs electrostatic precipitators ("ESPs") and baghouses as the means of controlling particulate matter emissions from its coal-fired boilers. Proposed Permit at 5. As fully described in the attached Declaration of Dr. Ranajit Sahu, this control method, combined with the inherent variability of PM emissions from coal fired boilers, creates a very high degree of variability of in PM emissions. *See* Declaration of Ranajit (Ron) Sahu (hereinafter "Sahu Declaration"), attached hereto as Exhibit 12. Specifically, Dr. Sahu notes that various "properties of the fuel (coal), properties of the flyash particles themselves, and factors affecting ESP performance . . . [collectively and through their interactions and variations over time] will affect how much [particulate matter] is actually emitted." *Id.* at 5. Dr. Sahu further notes that "[g]iven these numerous factors [related to the fuel, flyash and ESP], that can singly and in combination, affect the emissions of these pollutants from each [boiler], the emissions of PM/PM10/PM2.5 will likely be variable, and significantly so." *Id.* at 9. Dr. Sahu goes on to state that it is "not uncommon for such variability to be multiple-times or even an *order of magnitude* different between the typical three back-to-back hourly test runs in a stack test." *Id.* (emphasis added). Dr. Sahu concludes that "it is highly unlikely that an occasional measurement (such as a stack test) will accurately be able to capture such variability . . . [t]hus, continuous measurements of filterable PM, using CEMS that are now available, are the proper means of accurately measuring such emissions." *Id.* at 9-10.

In addition, and as EPA is well aware, stack tests are scheduled well ahead of time. Sources equipped with ESPs and baghouses (like Sunbury) then have the opportunity to take advantage of that advance notice and perform work on their pollution controls prior to testing in order to ensure favorable stack test results. This may include realigning plates, replacing broken wires and electronics in the ESP as well as cleaning the ESPs and baghouses, all of which improves control performance. In fact, some sources even have stack testing companies perform "diagnostic tests" before the "official stack test." If the results of the diagnostic test show violations, then the source can simply perform work on the ESPs and baghouses to ensure that it "passes" the official stack test. Thus, the stack test does not tell the public or regulatory agencies whether the source will be in compliance during the following multi-year period when the ESPs and baghouses may once again be operating at a substandard level. To assure

[19] Again, the five factors are as follows: (1) variability of emissions from the unit in question; (2) likelihood of violation of the requirements; (3) whether add-on controls are being used for the unit to meet the emission limit; (4) the type of monitoring, process, maintenance, or control equipment data already available for the emission unit; and (5) the type and frequency of the monitoring requirements for similar emission units at other facilities. *U.S. Steel* at 7.

compliance where the emissions are so variable, continuous direct monitoring is the only adequate monitoring option.

Closely related to variability, looking at the second factor—the likelihood of violation—the Sunbury facility's history of major opacity violations again mitigates in favor of PM CEMS.[20] Given this past history and the variability of the PM emissions discussed above, continued violation is likely. To assure compliance where the emissions are so variable and the facility has a history of noncompliance, continuous direct monitoring is the only adequate monitoring option.

Further, and perhaps most significantly, under factors four and five, the availability and reliability of PM CEMS for similar emission units shows that continuous monitoring will assure compliance with the PM emission limit. PM CEMS is a proven and accurate technology that has been readily available on a commercial scale for many years. *See* U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Current Knowledge of Particulate Matter (PM) Continuous Emission Monitoring, September 2000, *available at* http://www.epa.gov/ttn/emc/cem/pmcemsknowfinalrep.pdf. Indeed, many facilities have installed and are operating PM CEMS, demonstrating that these systems are available, reliable, and accurate. Thus, there can be no argument that PM CEMS are unavailable or unreliable for use at the Sunbury Station.

In comments EPA submitted in March 2005 for the Robinson Power Company PSD Application and Draft Plan Approval, for a proposed 270 megawatt waste-coal-fired, circulating fluidized bed boiler ("CFB") facility at Robinson Township, Pennsylvania, EPA noted that:

> The proposed plan approval requires annual stack testing to assure compliance with the particulate matter emission limits from the CFB and its associated fabric-filter baghouse. In light of the evolution of CEMS systems for particulate matter, EPA is strongly urging the requirement to install and operate a particulate matter CEMS at the proposed facility. Currently, there are several facilities that operate PM CEMS and have demonstrated that the systems are reliable and accurate. These are Tampa Electric power plant (Florida), Eli Lilly Corporation (Indiana), and the U.S. Department of Energy (Tennessee). EPA has also secured commitments from up to 30 existing coal-fired utility installations to install PM CEMS over the next couple of years. It is fair to assume that the state of technology for PM CEMS will be even further evolved by the time the proposed Robinson Power facility begins operation. Further, the facility will be required to establish a compliance assurance monitoring plan (CAM) as part of its title V operating permit and the federal CAM

[20] *See* various Quarterly Continuous Source Monitoring Reports for the plant; report cover pages attached collectively as Exhibit 13.

> regulations strongly encourage reliance on continuous monitoring systems as a means for assuring compliance.

(emphasis added). U.S. EPA, Robinson Comments, attached as Exhibit 14.

These comments, which clearly show the shifting trend toward and EPA's acceptance of the establishment of PM CEMS as the preferred technology for monitoring PM emissions, are from over seven years ago. There is no reason why, at this point in time, the Sunbury Station should not be required to install PM CEMS technology. In fact, PM CEMS have already been required in Pennsylvania. *See, e.g.*, Citizens for Pennsylvania's Future Consent Decree (requiring PM CEMS for the Bruce Mansfield plant), attached as Exhibit 15; *see also* DEP Consent Order and Agreement (same), attached as Exhibit 16. Due to the availability of PM CEMS and their ability to continuously measure PM emissions, PM CEMS are the best available technology to "assure compliance with the permit terms and conditions" as required by Title V of the CAA. 42 U.S.C. § 7661(c)(c). Thus, EPA should object to the permit and instruct PaDEP to require the use of PM CEMS at Sunbury.[21]

C. <u>The Proposed Permit Fails to Require Adequate Monitoring to Ensure Compliance with Opacity Limits</u>

Opacity at the Sunbury Plant is limited in its Proposed Title V permit to "[e]qual to or greater than 20% for a period or periods aggregating more than three minutes in any 1 hour" and "[e]qual to or greater than 60% at any time." Proposed Permit at 19. As previously discussed, the monitoring requirements in the Plant's Title V Permit must "assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement." 40 C.F.R. § 70.6(a)(3)(i)(B); 40 C.F.R. § 70.6(c)(1) (requiring "compliance certification, testing, monitoring, reporting, and recordkeeping requirements <u>sufficient to assure compliance with the terms and conditions of the permit</u>") (emphasis added); see also 25 Pa. Code § 127.511(a)(2). Yet, the Proposed Permit does not appear to require any mandatory monitoring for compliance with these opacity limits. Further, the method by which monitoring may be conducted is inappropriate. The Proposed Permit states, "Visible emissions <u>may</u> be measured using either of the following: (1) A device approved by the Department and maintained to provide accurate opacity measurements; or (2) Observers, trained and qualified to measure plume opacity with the naked eye or with the aid of any devices approved by the Department." Proposed Permit Section C, Condition #010 (emphasis as to point made above added). Neither of these monitoring methods is adequate.[22] As drafted now, the monitoring requirements for opacity set forth by PaDEP in the permit are insufficient to ensure that any potential exceedances or violations are detected, recorded, and reported as required. The permit must require continuous opacity

[21] Issues with the Plant's CAM Plan were raised on Page 22 of Sierra Club's comments submitted on June 25, 2012.

[22] This issue was raised on Pages 19 and 26 of the comments submitted by Sierra Club on June 25, 2012.

monitoring (or at the very least daily stack observations for visible emissions) in order to assure compliance with the permit's opacity limits. Because it does not, EPA should object.

D. Boiler 2B Must be Removed from the Proposed Permit because PSD/NSR Will Be Applicable Requirements If and When Boiler 2B Starts Up Again

EPA's PSD/NSR "Reactivation Policy" presumes that a major stationary source that has been shut down for two years or more is intended to be permanently shut down. *See* Memo from Edward E. Reich, Director, Div. of Stationary Source Enforcement, to Stephen A. Dvorkin, Chief, General Enforcement Branch, Region II (Sept. 6, 1978), available at http://www.epa.gov/ttn/nsr/psd1/pdf/p3_13.pdf. If permanently shut down, such a source will be considered a "new" source upon reactivation and subject to PSD/NSR permitting before operation is permissible. *Id.* This presumption is rebuttable if the source's owner/operator can demonstrate that the shutdown was temporary.[23] *Id.*

Because Sunbury has failed to meet the burden of showing that deactivation of Boiler 2B—almost four years ago[24]—is only temporary, and because Sunbury will have to make a major modification to return the unit to operations, PSD/NSR will be triggered as applicable requirements. Without applicable PSD/NSR requirements for SO_2, NOx, PM2.5, and ozone, the Proposed Permit's inclusion of Unit 2B is improper, and EPA should object on this ground.

E. The Proposed Permit Fails to Address the Fact that Installation of Low NOx Burners on Boilers 1A, 1B, 2A, and 2B Triggered PSD/NSR Requirements at Sunbury

The Proposed Permit must include PSD/NSR as an applicable requirement for Boilers 1A, 1B, 2A, and 2B with regard to the installation of Low NOx Burners on those units, or else sufficiently explain why PSD/NSR requirements are inapplicable. EPA should object to the Proposed Permit on the grounds that it fails to do so.

CONCLUSION

For the reasons described above, the Sierra Club respectfully requests that the Administrator of the United States Environmental Protection Agency grant this Petition to Object to the Sunbury Title V Permit and order the Pennsylvania Department of Environmental Protection to include in a new permit: (1) the prohibition on air pollution; (2) hourly SO_2 emission limits, averaging periods, and monitoring requirements

[23] Likewise, under 25 Pa Code § 127.11a(a), a source that is out of operation or production for one to five years may be reactivated without being considered a new source only if the owner/operator took certain enumerated steps.

[24] The Foster Wheeler Boiler 2B "blew up" on December 5, 2008. *See* Exhibit 17 at first page (letter from Edward Griegel, Vice President Operations, to Joseph Piktel, Facilities Permitting Section, Air Quality Program, PaDEP Northcetnral office (Aug. 18, 2010).

sufficiently stringent to avoid causing harmful air pollution and violations of the applicable acid rain provision; (3) adequate monitoring provisions—namely, PM CEMS—to assure compliance with the permit's particulate matter emissions limits; (4) adequate monitoring provisions to assure compliance with the permit's opacity limitations; and (5) conditions which reflect accurate PSD/NSR analyses.

Respectfully submitted,

/s Kathryn Amirpashaie

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