**BEFORE THE ADMINISTRATOR**

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

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An Operating Permit for the JP Pulliam Power Plant, Brown County, Wisconsin.

Source I.D. 405031990

Permit No. 405031990-P20

Proposed by the Wisconsin Department of Natural Resources on March 25, 2009.

Petition No. V-2009-_____

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# PETITION REQUESTING THAT THE ADMINISTRATOR OBJECT TO ISSUANCE OF THE PROPOSED TITLE V OPERATING PERMIT FOR THE JP PULLIAM POWER PLANT

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Date: June 25, 2009

Pursuant to Clean Air Act § 505(b)(2) and 40 CFR § 70.8(d), the Sierra Club hereby petitions the Administrator ("the Administrator") of the United States Environmental Protection Agency ("U.S. EPA" or "EPA") to object to a proposed Title V Operating Permit for the JP Pulliam Power Plant ("Pulliam"), Permit Number 405031990-P20 ("Permit"). The Permit was proposed to U.S. EPA by the Wisconsin Department of Natural Resources ("DNR") more than 45 days ago. A copy of the proposed Permit is attached as Exhibit A.

Sierra Club provided comments to the DNR on the draft permit and the revised draft permit. A true and accurate copy of Sierra Club's comments is attached at Exhibit B. DNR's response to comments is attached as Exhibit C.

This petition is filed within sixty days following the end of U.S. EPA's 45-day review period, as required by Clean Air Act ("CAA") § 505(b)(2).[1] The Administrator must grant or deny this petition within sixty days after it is filed. If the Administrator determines that the Permit does not comply with the requirements of the CAA, or fails to include any "applicable requirement," she must object to issuance of the permit. 42 U.S.C. § 7661b(b); 40 C.F.R. § 70.8(c)(1) ("The [U.S. EPA] Administrator will object to the issuance of any permit determined by the Administrator not to be in compliance with applicable requirements or requirements of this part."). "Applicable requirements" include, *inter alia*, any provision of the Wisconsin State Implementation Plan ("SIP"), including any term or condition of any preconstruction permit, any standard or requirement under Clean Air Act sections 111, 112, 114(a)(3), or 504, acid rain program requirements. 40 C.F.R. § 70.2.

[1] DNR proposed the permit to EPA on March 25, 2009. EPA's forty-five (45) comment period expired no early than May 9, 2009. However, despite being prohibited from issuing the final permit before the expiration of EPA's review period, DNR issued a final permit for the JP Pulliam plant on April 30, 2009. Regardless, the public's time for petitioning the Administrator extends through, at least, July 8, 2009.

This petition seeks an objection by the Administrator for three reasons:

1) The permit contains the wrong particulate matter ("PM") emission limit for boilers B23, B24, B25 and B26 because those units are either (or both):

    a. subject to lower preconstruction permit limits issued pursuant to Wisconsin's State Implementation Plan ("SIP"); or

    b. modified after April, 1972, and therefore subject to a SIP provision providing for lower SIP limits.

2) The permit omits maximum hourly heat input, fuel usage, and maximum generation limits that are applicable because they were contained in preconstruction permit applications submitted by the permittee, and relied upon by DNR to issue New Source Review synthetic minor permits.

3) The particulate monitoring in the permit is deficient.

## I. THE PERMIT OMITS MORE STRINGENT PARTICULATE MATTER LIMITS APPLICABLE THROUGH A PRECONSTRUCTION PERMIT AND THROUGH THE WISCONSIN SIP.

Every Title V permit must "assure[] compliance by the source with all applicable requirements." CAA § 504(a); 40 C.F.R. § 70.1; Wis. Stat. § 285.64(1); Wis. Admin. Code § NR 407.09(4)(b). "Applicable requirements" include, *inter alia*, SIP requirements and requirements from preconstruction permits. 40 C.F.R. § 70.2; Wis. Stat. § 285.64(1); Wis. Admin. Code § NR 400.02(26). The Permit fails to include applicable PM limits from Preconstruction Permit 07-SDD-311 (attached as Exhibit D), which was issued for the Pulliam plant on October 15, 2008, and from the Wisconsin SIP at Wis. Admin. Code § NR 415.06(2)(c).

The Title V Permit proposed by DNR contains the following limit for boilers B24, B25, B26 and B27: "Emissions may not exceed 0.30 pounds of particulate matter from any stack per million BTU of heat input. [s. NR 415.06(1)(b), Wis. Adm. Code]" Ex A, §§

I.A.1.a.(1), I.B.1.a.(1). Preconstruction permit 07-SDD-311, however, contains the following limits for these boilers:

- "Emissions may not exceed 69.3 pounds per hour for Boiler B24, 87.5 pounds per hour for Boiler B25 and 0.10 pounds of particulate matter from any stack per million BTU of heat input. [s. NR 415.06(2)(c), Wis. Adm. Code]." Permit 07-SDD-311 § I.A.1.a.(1).

- "Emissions may not exceed 99.9 pounds per hour for Boiler B26, 151.0 pounds per hour for Boiler B27 and 0.10 pounds of particulate matterfrom any stack per million BTU of heat input. [s. NR 415.06(2)(c), Wis. Adm. Code]." Permit 07-SDD-311 § I.B.1.a.(1).

Additionally, because the boilers were modified- which was the basis for issuing Permit 07-SDD-311 and Permits 87-AJH-027 and 88-AJH-101 (for adding natural gas burners)- the boilers are subject to Wis. Admin. Code § NR 415.06(2)(c), which provides: "All installations on which construction or modification is commenced after April 1, 1972 shall meet the emission limitations of this subsection... Installations of more than 250 million Btu per hour: maximum emission from any stack of 0.10 pounds of particulate matter per million Btu heat input."

Sierra Club's comments raised the issue that the permit omitted the lower PM emission limits for the boilers. *See* Exhibit B at 5-6. DNR's response merely stated: "The particulate matter limits from permit 07-SDD-311 are not included in the operation permit renewal because Pulliam has not completed the project described in permit 07-SDD-311." Exhibit C at 2. This response is deficient.

First, it appears that some of the units should have been modified and should be operational following the modification, according to the schedule provided by the applicant to the Public Service Commission of Wisconsin. *See* Exhibit E (providing a schedule showing

that the modifications to Units 5 and 6 were to be complete during the Spring of 2009 and Unit 7 is to be completed by fall 2009).[2]

Second, the underlying SIP provision states:

> All installations on which *construction or modification is commenced* after April 1, 1972 shall meet the emission limitations of this subsection:
>
> …
>
> (c) Installations of more than 250 million Btu per hour: maximum emission from any stack of 0.10 pounds of particulate matter per million Btu heat input.

Wis. Admin. Code § NR 415.06(2). This requirement applies to any installation where construction or modification has *commenced*. It does not apply once construction or modification is *completed*. The Wisconsin SIP defines "commence construction" as "engage[ing] in a program of on-site construction, including a site clearance, grading, dredging or landfilling specifically designed for a stationary source *in preparation for* the fabrication, erection or installation of the building components of the stationary source." Wis. Admin. Code § NR 400.02(44) (emphasis added). The SIP defines "commence modification" as "engage[ing] in a program of on-site modification which may include site clearance, grading, dredging or landfilling *in preparation for a specific modification* of a stationary source." Wis. Admin. Code § NR 400.02(45). There is no question that the Pulliam plant has begun on-site preparations for the installation of low-NOx burners on the boilers, which constitutes commencement of modifications. In fact, pursuant to Permit 07-

[2] Even assuming, *arguendo*, the lower limits in Permit 07-SDD-311 do not apply until the modification is complete on each unit, the Title V permit must then include a compliance schedule consistent with 40 C.F.R. 70.5(c)(8)(iii)(B), which requires at least a "statement that the source will meet in a timely manner applicable requirements that become effective during the permit term ."

SDD-311, the permittee has already notified DNR that it commented construction. *See* Ex. F (Notification by WPSC that construction commenced on January 22, 2009). Therefore the underlying limit (0.10 lb/MMBtu) applies now, is an applicable requirement, and must be in the Permit.

Lastly, regardless of when the modification involving installation of low-NOx burners on the boiler (i.e., the project covered by Permit 07-SDD-311) is complete, the boilers were modified twenty years ago, triggering lower emission limits in the Wisconsin SIP. DNR failed to even respond to the portion of Sierra Club's comment that pointed out that the boilers were previously modified in the late 1980s by adding natural gas, triggering the lower limits in NR 415.06(2)(c). There is no dispute that the boilers were modified, within the meaning of Wis. Admin. Code § NR 415.06(2)[3], when natural gas burners were added to supplement coal combustion in the boilers. In fact, DNR issued two permits for these modifications: 87-AJH-027 and 88-AJH-101. Those permits, and the accompanying statements of basis make clear that the boilers were modified by those projects. For example, the DNR's Preliminary Determination (Statement of Basis) for permit 87-AJH-027 states:

[3] The definitions in chapter NR 400 apply to NR 415.06. *See* Wis. Admin. Code § NR 415.02. "Modification" is defined in NR 400.02(99) as "any physical change in, or change in the method of operation of, a stationary source that increases the amount of emissions of an air contaminant or that results in the emission of an air contaminant not previously emitted. A modification does not include any changes identified in s. NR 406.04 (4)." Where a project requires a construction permit, it is therefore not exempt by NR 406.04(4), and constitutes a modification. There is no dispute that the natural gas co-firing project at the Pulliam plant in the late 1980s was a modification; it required construction permits.

Wisconsin Public Service Corporation (WPSC) proposes that its J. P. Pulliam facility overhaul the warm-up and flame stabilization systems for Units 3, 4, 5, and 6. Such modification would consist of constructing a bank of natural gas-fired burners for each of the four steam generating units. Each new burner will be physically unable to operate while the corresponding existing fuel oil-fired burner operates (the burner locations will not change; only one burner at a time will be able to operate at a particular location). The heating capability of each unit's bank of new burners will represent approximately 30-40 percent of that unit's maximum continuous heat input rating.

The recently constructed stack at Pulliam is actually a four flue tube bundle. One flue exhausts Unit 8, one exhausts Unit 7, another exhausts Unit 5 and 6, and the fourth exhausts Units 3 and 4.

*See* Analysis and Preliminary Determination for Permit 87-AJH-027 at 2 (June 2, 1987) (attached hereto as Exhibit G). In fact, the applications submitted by Wisconsin Public Service Corporation for the gas burner modifications specifically designated the project as "modifications." *See* Exhibits H and I. In short, it is undisputed that the modification to add gas burners to boilers 5 through 8 (B24, B25, B26 and B27) in the later 1980s triggered the lower emission limits in NR 415.06(2)(c), regardless of additional, recent modifications to the units in Permit 07-SDD-311.

The permit limits are three times higher than the applicable requirements in NR 415.06(2)(c) and permit 07-SDD-311. The DNR's proposed permit is not in compliance with the Act and the Administrator should object.

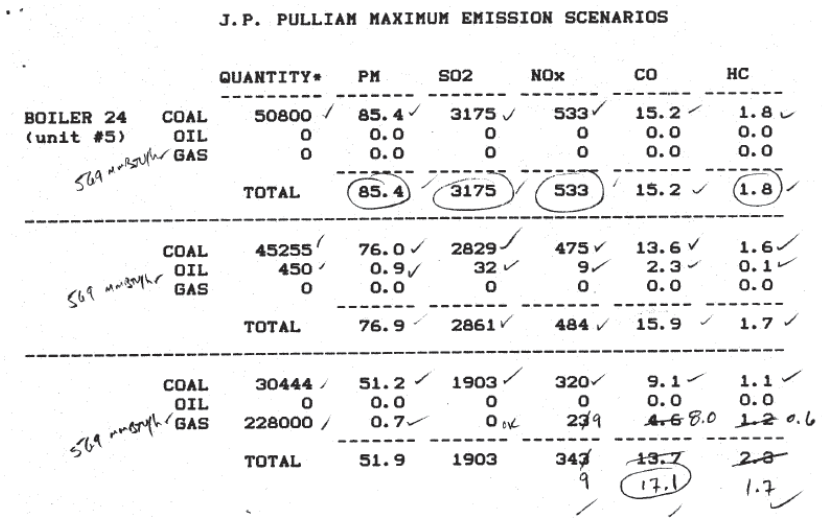
## II. THE MAXIMUM HEAT INPUT REPRESENTED IN A PERMIT APPLICATION FOR PERMIT 87-AJH-027 MUST BE INCLUDED AS APPLICABLE REQUIREMENTS.

Title V permits must include all applicable requirements for each emission source at a facility. 40 C.F.R. § 70.2 (applicable requirements include "[a]ny standard or other requirement provided for in [the SIP] or promulgated by EPA… [and] [a]ny term or condition of any preconstruction permits issued pursuant to [the PSD program]…"). This includes all requirements of preconstruction permits and all requirements of the applicable

state SIP. *Id.* The proposed Permit for the Pulliam plant omits important heat input limits for Units 5 and 6 (B24 and B25), which are "applicable requirements" because they were made as representations in the permit application for permit 87-AJH-027 and the preconstruction permit and Wisconsin SIP provide that the plant must be constructed and operated consistent with the application.

In its application for preconstruction permit 87-AJH-027, WPSC made the following representations as to the fuel usage and heat input for the relevant boilers:

**Unit 5**



J.P. PULLIAM MAXIMUM EMISSION SCENARIOS

| | | QUANTITY* | PM | SO2 | NOx | CO | HC |
|---|---|---|---|---|---|---|---|
| BOILER 24 (unit #5) | COAL | 50800 | 85.4 | 3175 | 533 | 15.2 | 1.8 |
| | OIL | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| 569 mmBtu/hr | GAS | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| | TOTAL | | 85.4 | 3175 | 533 | 15.2 | 1.8 |
| | COAL | 45255 | 76.0 | 2829 | 475 | 13.6 | 1.6 |
| 569 mmBtu/hr | OIL | 450 | 0.9 | 32 | 9 | 2.3 | 0.1 |
| | GAS | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| | TOTAL | | 76.9 | 2861 | 484 | 15.9 | 1.7 |
| | COAL | 30444 | 51.2 | 1903 | 320 | 9.1 | 1.1 |
| | OIL | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| 569 mmBtu/hr | GAS | 228000 | 0.7 | 0 ok | 239 | ~~4.6~~ 8.0 | ~~1.2~~ 0.6 |
| | TOTAL | | 51.9 | 1903 | ~~342~~ 329 | ~~13.7~~ 17.1 | ~~2.8~~ 1.7 |

| | |
|---|---|
| 1. Facility Name: J. P. Pulliam | 5. Manufacturer: Babcock & Wilcox |
| 2. This Data is for Fuel Burning Equipment #B 24 (unit 5) | 6. Model Number: RB-69 |
| 3. Which Exhausts through Stack(s) #S 12 (Use # from appropriate Form 4500-1S) | 7. Normal Operating Schedule of this Equipment: 12 hrs/day, 3 days/wk, 176 days/yr |
| 4. And has its Emissions Reduced by Control Device(s) #C 5, 5A (Use # from appropriate Form 4500-1C) | |

8. List all fuels which this equipment is presently or will be equipped to burn:

| | | |
|---|---|---|
| A. Bitumious Coal | ☒ Existing Fuel 569 mmBtu/hr | ☐ Proposed Fuel |
| B. #2 Fuel Oil | ☒ Existing Fuel 62.1 mmBtu/hr | ☐ Proposed Fuel |
| C. Natural Gas | ☐ Existing Fuel | ☒ Proposed Fuel 228 mmBtu/hr |

9. Maximum Heat Input 569.0 (million BTU per hour)

10. Complete the following table for all fuels listed under item 8. (See footnotes for proper units.)

| | | Fuel A | Fuel B | Fuel C |
|---|---|---|---|---|
| Higher Heating Value ① | | 11201 | 138000 | 1000 |
| Ash Content, Weight Percent As Fired | Avg. | 9.4 | 0 | NA |
| | Max. | 11.8 | 0 | NA |
| Sulfur Content, Weight Percent as Fired | Avg. | 2.25 | 0.22 | NA |
| | Max. | 3.20 | 0.50 | NA |
| Hourly Consumption ② | Avg. | 25130 | 79 | 10046 |
| | Max | 50800 | 450 | 228000 |
| Expected Yearly Consumption ③ | | 35000 - 110000 | 0.0 | 37.1 |

## Unit 6

| | | QUANTITY* | PM | SO2 | NOx | CO | HC |
|---|---|---|---|---|---|---|---|
| BOILER 25 (unit #6) | COAL | 66600 | 111.9 | 4162 | 699 | 20.0 | 2.3 |
| | OIL | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| | GAS | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| 745.9 mmBtu/hr | TOTAL | | 111.9 | 4162 | 699 | 20.0 | 2.3 |
| | COAL | 61425 | 103.2 | 3839 | 645 | 18.4 | 2.1 |
| 745.9 mmBtu/hr | OIL | 420 | 0.8 | 30 | 8 | 2.1 | 0.1 |
| | GAS | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| | TOTAL | | 104.0 | 3869 | 653 | 20.5 | 2.2 |
| | COAL | 46243 | 77.7 | 2890 | 486 | 13.9 | 1.6 |
| | OIL | 0 | 0.0 | 0 | 0 | 0.0 | 0.0 |
| 745.9 mmBtu/hr | GAS | 228000 | 0.7 | 0 | 279 | ~~4.6~~ 8.0 | ~~1.2~~ 0.6 |
| | TOTAL | | 78.4 | 2890 | ~~509~~ 515 | ~~18.5~~ 21.9 | ~~2.8~~ 2.2 |

1. Facility Name: J. P. Pulliam
2. This Data is for Fuel Burning Equipment: #B 25 (unit 6)
3. Which Exhausts through Stack(s): #S 12 (Use # from appropriate Form 4500-1S)
4. And has its Emissions Reduced by Control Device(s): #C 6, 6A (Use # from appropriate Form 4500-1C)
5. Manufacturer: Babcock & Wilcox
6. Model Number: RB-112
7. Normal Operating Schedule of this Equipment: 11 hrs/day; 3 days/wk; 168 days/yr
8. List all fuels which this equipment is presently or will be equipped to burn:
A. Bituminous Coal — ☒ Existing Fuel 745.9 mmBtu/hr ☐ Proposed Fuel
B. #2 Fuel Oil — ☒ Existing Fuel 57.96 mmBtu/hr ☐ Proposed Fuel
C. Natural Gas — ☐ Existing Fuel ☒ Proposed Fuel 228 mmBtu/hr
9. Maximum Heat Input: 745.9 (million BTU per hour)
10. Complete the following table for all fuels listed under item 8. (See footnotes for proper units.)

| | | Fuel A | Fuel B | Fuel C |
|---|---|---|---|---|
| Higher Heating Value ① | | 11200 | 138000 | 1000 |
| Ash Content, Weight Percent As Fired | Avg. | 9.4 | 0 | NA |
| | Max. | 11.8 | 0 | NA |
| Sulfur Content, Weight Percent as Fired | Avg. | 2.24 | 0.22 | NA |
| | Max. | 3.20 | 0.50 | NA |
| Hourly Consumption ② | Avg. | 33238 | 49 | 4811 |
| | Max | 66600 | 420 | 228000 |
| Expected Yearly Consumption ③ | | 50000 - 160000 | 0.0 | 17.8 |

*See* Application for Permit 87-AJH-027 at 10, 17, 19 (attached as Exhibit J). DNR then relied on those representations to calculate maximum emissions before and after the additional, gas, burners were added to the boiler to issue a synthetic minor permit (87-AJH-027) without requiring Nonattainment New Source Review, Prevention of Significant Deterioration or New Source Performance Standard compliance. DNR's Preliminary Determination (Statement of Basis) confirms that it relied upon the represented maximum heat input to calculate maximum emission rates prior to and after installation of the burners.[4] The Statement of Basis for the permit described the boilers as follows:

[4] Additionally, the copied portions of the application above contain hand-written notice that appear to be from DNR's permit reviewer. The application was copied from DNR's files. The notes calculate the baseline emissions and the emission increases for each pollutant, based on the representations made in the application about fuel usage and heat input.

Equipment Specifications

Boiler Type: Wall-Fired (Burner Configuration)

Burner Fuel: Natural Gas

Maximum Heat Inputs

Unit 3: 152.0 MMBTU/hr (burners)
351.6 MMBTU/hr (boiler)

Unit 4: 152.0 MMBTU/hr (burners)
351.6 MMBTU/hr (boiler)

Unit 5: 228.0 MMBTU/hr (burners)
569.0 MMBTU/hr (boiler)

Unit 6: 228.0 MMBTU/hr (burners)
745.9 MMBTU/hr (boiler)

Analysis and Preliminary Determination for 87-AJH-027 at 2 (attached as Exhibit G). The preconstruction, synthetic minor permit that DNR issued contained the following requirement:

In compliance with the provisions of Chapter 144, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code,

Name of Source: Wisconsin Public Service Corporation

Street Address: Bylsby Avenue
Green Bay, Wisconsin 54307-9002

Principal Officer or Authorized Representative, & Title:
Eugene R. Mathews, Senior Vice President, Power Supply & Engineering

is authorized to construct and operate a series of natural gas-fired burners for steam generating units 3, 4, 5, and 6 at the J. P. Pulliam power plant, described in the plans and specifications dated April 7, 1987, May 7, 1987, and June 8, 1987, in conformity with the conditions herein.

*See* Permit 87-AJH-027 at 1 (attached as Exhibit K). This authorization required construction and operation as described in the "plans and specifications" submitted by the permittee, and largely mirrors the SIP provision requiring a construction project to conform with the application made to the DNR. Wis. Admin. Code § NR 406.10 ("Any owner or operator who fails to construct a stationary source in accordance with the application as approved by the department… shall be considered in violation of s. 285.60,

Stats."). Furthermore, while the gas burners were initially intended to be used only for startup, WPSC later decided to use them to provide supplemental heat when burning lower sulfur and lower Btu coal. In correspondence between DNR and WPSC, DNR notes that this is appropriate only if WPSC *does not use the gas capacity to increase the total heat input into the boiler*:

> Given that the rated heat input capacities of the boilers will not change as a result of the proposed pollution control projects, the expanded use of natural gas to co-fire with coal will simply replace some of the heat input previously provided by coal combustion with heat input provided by natural gas combustion. My analysis shows that the net effect of this co-firing is a reduction in $NO_x$ emissions from the boilers. I also assume from the above information that WPSC has no plans to increase the utilization of Pulliam Units 3-8 as a result of the increased natural gas use (i.e., that the projected dispatch of these units is unaffected by the expanded gas usage program).

Letter from Alan Hubbard, DNR, to Gary Van Helvoirt, WPSC (September 7, 1993) (attached as Exhibit L). In other words, DNR relied on WPSC's stated maximum heat rates to determine that the gas burners would not increase heat input the boilers—thereby resulting in decreased emissions by replacing a portion of the heat provided by coal-- and concluding that a preconstruction permit was not needed to use the burners to supply heat rather than merely startup. Therefore, the heat rate representations were central to DNR's permitting decisions, reinforcing the need to make such representations enforceable as applicable Title V permit requirements.

Sierra Club raised this issue in its public comments as one part of a larger comment about both the heat input and natural gas usage limits in permit 87-AJH-027 and 88-AJH-101. *See* Ex. B at 6-10. DNR responded only to portion of Sierra Club's comments regarding the natural gas limits, referring to the September 7, 1993 letter and a later permit revision for permit 88-AJH-101. *See* Ex. C at 2. Specifically, DNR states:

> The limits (NOx limits to limit natural gas usage) for units 7&8 were removed in permit No. 88-AJH-101A issued in 1994. The limitations in permit No. 87-AJH-027 were stated to be eliminated in a letter from Al Hubbard to WPSC, dated 9/7/93, in which it is stated that in the Department's opinion, no change is needed to permit No. 87-AJH-027 to have these limitations eliminated, but a permit alteration was necessary to eliminate the restrictions on units 7 and 8. Therefore, these limitations are no longer applicable and need not be in the Title V permit. The Department believes that elimination of these limitations was premised on an April 6, 1993, letter from David Kee, USEPA, to Dennis Drake, MI DNR, concerning converting boilers to natural gas from less clean fuels.

*Id*. Sierra Club is not disputing, for purposes of this petition, that the natural gas usage limits in prior permits have been withdraw. What Sierra Club is disputing is DNR's failure to require that the boilers operate consistent with the preconstruction permit application submitted.

The DNR's response does not mention, nor respond to, Sierra Club's comment regarding maximum heat rate represented in WPSC's application, which constitute applicable requirements because of the preconstruction permit and the Wisconsin SIP's requirement that the boilers be constructed and operated consistent with the application.

Moreover, DNR's reference to the September 7, 1993, letter from DNR to WPSC reinforces Sierra Club's comment on this point because that letter points out that DNR's assumption was that the gas burners do not increase the maximum heat rate of the boilers. Absent the limit on boiler heat input, adding the gas burners to the boilers would have triggered Prevention of Significant Deterioration and New Source Performance Standard requirements by increasing the boiler's heat input capacity and, therefore, potential emissions. The heat input limits are critical and DNR's omission of them results in a deficient permit. The Administrator should object.

## III. THE PERMIT LACKS SUFFICIENT PARTICULATE MATTER MONITORING AND DNR HAS NOT PROVIDED SUFFICIENT EXPLANATION FOR THE PERMIT'S MONITORING.

Title V and its implementing regulations require DNR to include in the permit all "terms, test methods, units, averaging periods and other statistical conventions consistent with the applicable requirement," for the relevant time period, that are sufficient to assure compliance. 40 C.FR. § 70.6(a)(3)(B), (c); Wis. Admin. Code § NR 407.09(1)(c)1.b., NR 407.09(4)(a)1. (all operating permits shall contain compliance requirements "sufficient to assure compliance with the terms and conditions of the permit") ); *Sierra Club v. EPA*, 536 F.3d 673, 675 (D.C.Cir. 2008) ("'[w]here the applicable requirement does not require periodic testing,' subsection 70.6(a)(3)(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.'"); *In re Fort James Camas Mill*, Petition No. X-1999-1 (Dec. 22, 2000); *In re PacifiCorp's Jim Bridger and Naughton Electric Utility Steam Generating Plants*, Petition No. VIII-00-1 (Nov. 16, 2000).

### A. PM Emission Monitoring For The Boilers.

There is no continuous, direct, monitoring of particulate matter emissions from the Pulliam boilers. The Permit relies, instead, on a stack test every 24 months (or less often), monitoring of electrostatic precipitator (ESP) parameters once every eight hours, defining "normal performance" of ESP parameters in an off-permit "Malfunction, Prevention and Abatement Plan" that will be submitted at a later time and without public notice and comment, and inspection of the ESP an on undefined schedule. Ex. A (Permit) §§ I.A.1.b. and c., I.B.1.b. and c. This is insufficient for several reasons.

First, there is no explanation (and no apparent basis) for the monitoring. DNR does not explain in the Statement of Basis (or anywhere else) how simply monitoring the ESP parameters once every 8 hours is sufficient to assure that the ESP is achieving the minimum control efficiency required to achieve the instantaneous emission limit (i.e., every minute of every day). Therefore, this permit suffers the same deficiency that EPA recently found in another Title V permit issued by DNR:

> The title V permit must contain sufficient monitoring to assure compliance with the terms and conditions of the permit. 40 C.F.R. § 70.6(c)(1); see also 40 C.F.R. § 70.6(a)(3)(i)(B). ... The SOB states that compliance will be demonstrated by performing compliance emission testing as required by NR 439.075(2) (which requires biennial testing, unless a waiver is granted); by requiring that only coal be used as the primary fuel type; and by operating an ESP whenever the boilers are in operation and by monitoring the primary and secondary voltage, primary and secondary current, and sparking rate. It appears that WDNR may be relying on these three requirements to ensure compliance with the applicable PM limit. However, it is not clear from the permit or the permit record how this monitoring scheme will ensure compliance.
>
> The above referenced SOB provides worst case calculations (using the heating value of coal, the maximum hourly consumption, and the fraction emitted) that seek to demonstrate that the PM limit of 0.15 lb/mmBtu will be met. However, WDNR's calculations appear to be relying on the ESP's achieving a certain control efficiency. The SOB lists the efficiency of the ESP for each of the boilers, (e.g., 98.6% for B25), and states that efficiencies are based on either manufacturer's guarantee, or a stack test. If that is the case (which would require parametric monitoring of the ESP to assure that the ESP will achieve the efficiency necessary to assure compliance with the applicable emissions limits), then it is not clear why there are no parameter indicator ranges in the permit that establish the correlation between the ESP operating efficiency and the parameters being measured.

*In re We Energies Oak Creek Power Plant*, Order at 15-16 (EPA Adm'r June 13, 2009); *see also In re Citgo Refining and Chemical Co. L.P.*, Petition No. VI-2007-01, Order at 7-8 (EPA Adm'r May 28, 2009) (objecting to Title V permit where the state agency fails to explain the basis for the monitoring required by the permit in light of the need to do "context-specific determination" for monitoring).

Moreover, adequate monitoring, or "compliance demonstration," in the permit must be sufficient such that the data collected and recorded can be used to demonstrate compliance or non-compliance with the underlying limit. This incorporates both a quantitative element and a temporal element. The temporal element requires the monitoring to correspond to the averaging period for the emission limit. Here, the applicable PM limits are instantaneous. Therefore, adequate monitoring must be sufficient to show that each boiler is emitting at or below the PM limit at all times. The monitoring in the permit, however, monitors ESP parameters only once every eight hours. Ex. A (Permit) § I.A.1.c.(4), I.B.1.c.(4). Therefore, even assuming *arguendo* that monitoring ESP parameters is sufficient to ensure compliance with an emission rate (Sierra Club contends that it is not), DNR also failed to explain how monitoring only once every eight hours ensures continuous compliance with a limit expressed as instantaneous (i.e., no averaging time). If ESP parameters vary from minute to minute, or even hour to hour, a one-time snapshot every eight hours provides not assurance that emissions during any other minute or hour between parameter observations were in compliance.

Second, when a parametric monitoring scheme is used (such as the ESP parameters here), there must be a determination by DNR that specific parameter ranges ensure compliance. Where compliance depends on continuous effectiveness of the ESP device, and

parameters (voltages, amps, spark rate) are reliable indicators of when the ESP is working correctly and achieving adequate emission reductions, the permit must identify the parameter operating ranges in which DNR is sure that the plant is complying with the applicable limits.

> The "periodic monitoring rule," 40 C.F.R. § 70.6(a)(3)(i)(B), requires that "[w]here the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of record keeping designed to serve as monitoring), [each title V permit must contain] periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit. . . Such monitoring requirements shall assure use of terms, test methods, units, averaging periods, and other statistical conventions consistent with the applicable requirement.

*In the Matter of Midwest Generation, LLC, Waukegan Generation Station*, Order at 19 (September 22, 2005) (hereinafter "*Waukegan*") (*citing* 69 Fed. Reg. at 3202, 3204 (Jan. 22, 2004)); see also *Appalachian Power Co. v. EPA*, 208 F.3d 1015 (D.C. Cir. 2000); *Oak Creek*, supra (noting that if DNR relies on ESP operations achieving a minimum control efficiency to measure compliance, "then it is not clear why there are no parameter indicator ranges in the permit that establish the correlation between the ESP operating efficiency and the parameters being measured."). EPA has specifically rejected the notion that merely watching and recording control device parameters ensure compliance with an emission limit.

> While the permit does include parametric monitoring of emission unit and control equipment operations in the O & M plans for these units… the parametric monitoring scheme that has been specified is not adequate. The parameters to be monitored and the frequency of monitoring have been specified in the permit, but the parameters have not been set as enforceable limits. <u>In order to make the parametric monitoring conditions enforceable, a correlation needs to be developed between the control equipment parameter(s) to be monitored and the pollutant emission levels</u>. The source needs to provide an adequate demonstration (historical data, performance test, etc.) to support the approach used. In

> addition, an acceptable performance range for each parameter that is to be monitored should be established.

*In the Matter of Tampa Electric Co., F.J. Gannon Station*, Objection to Proposed Part 70 Operating Permit No. 0570040-002-AV (Sept. 8, 2000) (emphasis added); *see also In the Matter of the Huntley Generating Station*, Order Objecting to Operating Permit No. II-2002-01 at 21-22 (July 31, 2003) (same). In the Pulliam permit, DNR has not only failed to establish an enforceable range for the ESP parameters, but DNR inexplicably exempts the plant from operating the ESP devices during periods of startup and shutdown, despite the fact that the underlying, instantaneous, SIP limits on PM emissions apply at all times, including startup and shutdown. *See e.g.*, Ex. A (Permit ) § I.A.1.a.(3), I.B.1.a.(3).

Sierra Club raised this issue in its comments. *See* Ex. B at 10-18. DNR's obtuse response was to repeat what is in the permit and, it appears, to put off developing a monitoring scheme to an off-permit Malfunction, Prevention and Abatement Plan that will be developed later:

> Periodic stack testing for the boilers and ESPs is required by s. NR 439.075(2)(a) and NR 439.075(3)(b), Wis. Adm. Code. The ESP parameters are monitored continuously and recorded a minimum of once for every eight hours of operation as required by s. NR 439.055(1)(c), and 439.055(2)(b), Wis. Adm. Code. The applicable parameters are defined in the Malfunction, Prevention and Abatement Plan and are based on stack testing and operating experience. The proposed permit will require that the plan and parameters be approved in writing by the Department and the plan must include actions to be taken if parameters are measured outside the Plan range. A limit with units of pounds per million Btu heat input may seem like an instantaneous limit, however compliance may be averaged over three hours of stack testing and the emission rate may be used to show compliance with a 24 hour standard.

Ex. C. at 2-3. To the extent that DNR attempts to say that "enforceable" ESP parameter ranges will be set in the future through the Malfunction Prevention and Abatement plan that is not part of the Title V permit and not subject to notice and comment, DNR's attempt fails. The DNR must establish monitoring *in the permit*, 40 C.F.R. §§ 70.6(a)(3)(i), (c), and provide a sufficient explanation for that monitoring *in the Statement of Basis* that is available to the public for comment. 40 C.F.R. §§ 70.7(a)(5), (h)(2); *In re Premor Refining Group*, Petition Number VI-2007-02, Order at 7 (EPA Adm'r May 28, 2009) ("In all cases, the rationale for the selected monitoring requirements must be clear and documented in the permit record . 40 C.F.R. § 70.7(a)(5)."). Moreover, the public and EPA have a right to review and comment on the monitoring scheme as a part of the Title V permit. In short, DNR's attempt to punt determinations of monitoring and compliance demonstration to an off-permit "plan," at some later date, outside of the Title V permit and the public process, is unlawful. Compliance and monitoring requirements are critical to the Title V permit and cannot be left to an unspecified future data, especially through a "plan" that is no incorporated into the permit and is not subject to public and EPA notice and comment. *See e.g., Oak Creek*, supra, at 23-27 (determining that malfunction plans that define obligations under the Act must be included in the application and approved in the Title V process). The Administrator should object.

**B. PM Monitoring For The Material Handling Emission Source.**

The Permit also includes deficient monitoring for Processes 41 (coal unloading), P42 (coal transfer to storage piles), P46 (ash storage silos) and P48 (flyash handling) which is not connected to the underlying limits. For the Administrator's reference, the emission

sources, permit limits, and monitoring in the proposed permit are set forth in the table below:

| Emission Source | Permit Limit | Monitoring |
|---|---|---|
| P41 (coal unloading) | (1) The more restrictive of the following:<br>(a) E = 17.31(P) 0.16<br>where, E is the allowable emission rate in pounds per hour and P is the process weight rate in tons per hour…and<br>(b) 13.17 pounds per hour.<br>(2) The permittee may not cause, allow, or permit any materials to be handled, transported, or stored without taking precautions to prevent particulate matter from becoming airborne. Nor may the permittee allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted, or demolished without taking such precautions. | (1) The permittee shall operate a baghouse (C41) to control particulate matter emissions whenever this process is operated.<br>(2) The permittee shall operate an alarm system on the baghouse to monitor the differential pressure created by each fan which exhausts emissions from the baghouse. An alarm shall be set to alert the operator if the pressure drop is outside the range approved by the Department in writing.<br>If an alarm occurs, the permittee shall take appropriate investigative and corrective action in accordance with the procedures referenced in the Malfunction Prevention and Abatement Plan (MPAP) required for this process.<br>(3) In the event of a malfunction or failure of the continuous pressure differential alarm system, the permittee shall monitor and record the pressure drop once for every eight hours of source operation or once per day, whichever yields the greater number of measurements, and perform daily inspections of the exhaust stack to detect visible emissions when the process is operating. |
| P41 (coal unloading) | (1) 20% opacity or number 1 of the Ringlemann chart. | (1) Same as particulate matter. |
| P42 (coal transfer to storage piles) | (1) The more restrictive of the following:<br>(a) E = 17.31(P)0.16<br>where, E is the allowable emission rate in pounds per hour and P is the process weight rate in tons per hour…, and<br>(b) 0.68 pounds per hour particulate matter and 0.24 pounds per hour PM10. | (1) Each time the chemical tank used to apply chemical dust suppressants is refilled, the permittee shall record the date the chemical tank is refilled and the quantity of chemical dust suppressant added to the tank.<br>(2) Reference Test Method for Particulate Emissions: Whenever particulate matter emission testing is required by the Department, the permittee shall use U.S. EPA Method 5, 5I, or 17, including back half (Method 202), draft Dry Impinger method 202, or an alternative method approved by the Department in writing. |
| P42 (coal transfer to storage piles) | (1) 20% opacity or number 1 of the Ringlemann chart. | (1) Same as particulate matter. |
| P46 (ash storage silos) | (1) The more restrictive of the following:<br>(a) 0.20 pounds of particulate matter per 1000 pounds of gas. … and<br>(b) 0.58 pounds from each stack S46A and S46B. | (1) The permittee shall operate baghouse(s) (C46A and/or C46B) to control particulate matter emissions from this process, whenever the process operates.<br>(2) The permittee shall operate an alarm system on the baghouse to monitor the differential pressure created by each fan which exhausts emissions from the baghouse. An alarm shall be set to alert the |

| | | |
|---|---|---|
| | | operator if the pressure drop is outside the range approved by the Department in writing. If an alarm occurs, the permittee shall take appropriate investigative and corrective action in accordance with the procedures referenced in the Malfunction Prevention and Abatement Plan required for this process.<br>(3) In the event of a malfunction or failure of the continuous pressure differential alarm system, the permittee shall monitor and record the pressure drop once for every eight hours of source operation or once per day, whichever yields the greater number of measurements, and perform daily inspections of the exhaust stack to detect visible emissions when the process is operating. |
| P46 (ash storage silos) | (1) 20% opacity or number 1 of the Ringlemann chart. | (1) Same as particulate matter. |
| P48 (flyash handling) | (1) The more restrictive of the following:<br>(a) 0.20 pounds of particulate matter per 1000 pounds of gas… and<br>(b) 1.6 pounds per hour | (1) The permittee shall duct the emissions generated by Process P48 to a baghouse<br>(2) The baghouse (C48) shall be in operation and controlling particulate matter emissions at all times that Process P48 is in operation.<br>(3) The permittee shall operate an alarm system on the baghouse to monitor the differential pressure created by each fan which exhausts emissions from the baghouse. An alarm shall be set to alert the operator if the pressure drop is outside the range approved by the Department in writing. If an alarm occurs, the permittee shall take appropriate investigative and corrective action in accordance with the procedures referenced in the Malfunction Prevention and Abatement Plan required for this process.<br>(4) In the event of a malfunction or failure of the continuous pressure differential alarm system, the permittee shall monitor and record the pressure drop once for every eight hours of source operation or once per day, whichever yields the greater number of measurements, and perform daily inspections of the exhaust stack to detect visible emissions when the process is operating. |
| P48 (flyash handling) | (1) 20% opacity or number 1 on the Ringlemann chart. | (1) The particulate matter emission compliance demonstration requirements listed in L.1.b. shall be used to demonstrate compliance with the visible emissions limitation. |

As shown in this table, the Permit's monitoring for PM emissions from the material handling is indirect, relying on (1) an alarm system on the baghouse, which is set to an

undefined pressure drop range; (2) a requirement to record "any corrective action taken as a result of a differential pressure alarm"; and (3) recording pressure drop when the alarm system malfunctions. Note, however, that the monitoring for P42 appears to require only that, *if* chemical suppressants are used, the permittee monitors and records when the chemical suppressant tank is refilled. There is no requirement that suppressants actually *be used*, nor that applications of suppressants (if used) are monitored and record, but only that if they are used the permittee monitor the rate at which *the storage tank is refilled*.[5]

The monitoring in the permit for these emission sources fails to meet the minimum requirements of 40 C.F.R. § 70.6(a)(3)(B) and 70.6(c). The PM limit for P41, P46 and P48 are expressed as maximum hourly emission rates. The monitoring appears to assume (but does not expressly say) that if emissions are directed to a baghouse, and the baghouse is functioning properly, the emissions will be below the applicable pound-per-hour limit. The factual basis of this presumed assumption is not in the permit record. Additionally, it is unclear how a baghouse alarm set to an unspecified baghouse pressure drop ensures that *either* the baghouse is functioning properly *or* that the emission limit is being met.

Furthermore, the permit requires no monitoring of visible emissions from these emission points. Instead, it appears to assume that the monitoring for PM will ensure compliance with the visible emission standard. There is no basis for this assumption in the record and DNR provides no explanation.

Sierra Club commented on these monitoring deficiencies. Ex. B at 18-19. DNR's response was:

> The monitoring for the baghouses meets the applicable requirements in s. NR 439.055(2)(b), Wis. Adm. Code. The monitoring and recordkeeping for the fugitive sources of coal dust meet the applicable requirements in s. NR 445.10, Wis. Adm. Code. The requirement to maintain compliance with particulate matter limits through use of the fugitive dust control plan is acceptable to DNR.

[5] As Sierra Club noted in its comments, even if the permittee was required to use chemical suppressants, monitoring when the storage tank is refilled is like trying to monitor a car's speed from minute to minute by watching how often its gas tank is refilled.

Ex. C at 3. DNR statement is non sequitur. Sierra Club's comment did not involve NR 445.10[6] and did not assert that monitoring baghouses fails to meet the requirement in NR 439.055(2)(b). Rather, Sierra Club's comment was that the monitoring does not meet the requirements of Title V, including 40 C.F.R. §§ 70.6(a)(3)(B) and (c). Additionally, Sierra Club commented that DNR failed to explain how the permit's monitoring provisions ensure continuous compliance. 40 C.F.R. § 70.7(a)(5) (requiring the statement of basis to set forth the legal and factual basis for permit conditions). In short, DNR did not respond to the substance of Sierra Club's comments and still has not included sufficient monitoring in the permit.

To summarize:

- The Permit fails to include sufficient monitoring for PM emissions from the boilers and from the material handling equipment.
- DNR has not explained how, or even if, operating the ESP on the boilers and merely monitoring ESP parameters every eight hours ensures compliance with the instantaneous PM limits applicable to the boilers.
- DNR has not explained how, or if, compliance with the PM limits for the boilers is assured during startup and shutdown, when the permit does not require the ESP to be operated. There are no facts in the record to support such a conclusion.
- To the extent that DNR relies on ESP parameters, it fails to establish explicit parameter ranges, which are necessary to make the parametric monitoring meaningful and enforceable.
- To the extent DNR relies on a pressure drop alarm, without a specified pressure drop triggering that alarm, and relies on monitoring how often chemical tanks are refilled, DNR has not explained how that monitoring assures compliance with PM limits expressed in pounds-per-hour, and the facts do not support the conclusion.
- The DNR has not explained, nor supported with facts, how compliance with monitoring for PM assures compliance with visible emission standards.

The permit fails to satisfy the Act and the Administrator should object.

[6] Wis. Admin. Code § NR 445.10 is a state-only coal dust standard that was not mentioned in Sierra Club's comments.

## Conclusion

For the foregoing reasons, the permit fails to meet federal requirements in numerous ways. These deficiencies require that the Administrator object to issuance of the permit pursuant to 40 C.F.R. § 70.8(c)(1). Each of the issues raised by Sierra Club in this petition result in a deficient permit. Most of the deficiencies result in unlawful emissions of air pollutants that negatively affect the health and welfare of Sierra Club members. Others result in illegal monitoring and reporting that make it difficult for Sierra Club to monitor and enforce air pollution limits applicable to the plant.

Dated this 25th day of June, 2009.

Attorneys for Sierra Club
MCGILLIVAY WESTERBERG & BENDER LLC

David C. Bender

## CERTIFICATE OF SERVICE

STATE OF WISCONSIN )
) ss
COUNTY OF DANE )

I make this statement under oath and based on personal knowledge. On this day I caused to be served upon the following persons a copy of Sierra Club's Petition to the United States Environmental Protection Agency regarding the Pulliam Power Plant, Permit No. 405031990-P20

To Administrator Jackson via electronic mail to: jackson.lisa@epa.gov

And via Certified Mail, Return Receipt Requested to:

Lisa Jackson
US EPA Administrator
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Matthew Frank
Wisconsin Dept. of Natural Resources Secretary
101 S Webster St
PO Box 7921
Madison, WI 53707-7921

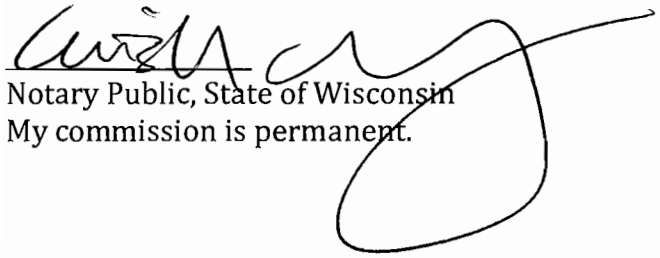
Wisconsin Public Service Corporation - JP Pulliam Plant
1530 Bylsby Ave,
Green Bay, WI 54303

Wisconsin Public Service Corporation
P.O. Box 19001
Green Bay, WI 54307-9001

Dated : June 25, 2009.

David C. Bender

Signed and sworn to before me
This 25th day of June, 2009.



Notary Public, State of Wisconsin
My commission is permanent.