

§52.21(aa) allows an alternative to unit-specific limits, for crediting emission decreases and thereby avoiding PSD major modification review for a project. The alternative is called “Plantwide Applicability Limits” (PALs). In section V of its April 15, 2008 responses to public comments, the State acknowledged that its proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits do not incorporate all the requirements for establishing a PAL.

We are objecting because the proposed Title V permit fails to comply with the above-cited PSD requirements for ensuring that the Big Stone II project will not result in significant net emission increases for SO<sub>2</sub> and NO<sub>x</sub> at the Big Stone plant. The proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits do not ensure that emission decreases specific to Big Stone I are enforceable as a practical matter at the time that actual construction of the Big Stone II project begins, nor does the proposed Title V renewal permit establish a PAL as an alternative. Our concerns about practical enforceability of the proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits are presented separately below, under Objection 3.

We are also objecting because in section 9.0, “PSD Exemption,” the language in proposed permit conditions 9.2 and 9.4, allowing the Units associated with the Big Stone II project to “forgo” a PSD review for SO<sub>2</sub> and NO<sub>x</sub>, constitutes an impermissible shield against enforcement of the PSD applicability determination rules described above.

We are aware that in the contested case proceedings on this permit, the State has expressed its opinion that the operational flexibility provisions of 40 CFR 70.6(a)(10) can be used to establish the plantwide SO<sub>2</sub> and NO<sub>x</sub> limits and thereby avoid PSD review, outside of the step-by-step procedures for evaluating PSD applicability that are laid out in §52.21(a)(2)(iv). Although we have not discussed this opinion directly with the State, we want the State to be aware that this opinion is incorrect. EPA has made clear to Title V permitting authorities over the years that Title V doesn’t allow a facility to use emission trading to avoid an applicable requirement. See “Questions and Answers on the Requirements of Operating Permits Program Regulations,” available on EPA website at:

<http://www.epa.gov/region07/programs/art/air/title5/t5memos/bbrdq&a1.pdf>.

To resolve our objection, the State must select and implement, in accordance with the PSD rules, one of the following three options:

Option 1 – Appropriate PSD netting: Establish SO<sub>2</sub> and NO<sub>x</sub> emission limits in an appropriate permit, in conformance with the above cited PSD rules. The limits for establishing creditable emission decreases at Big Stone I must:

- (i) be specific to Big Stone I,
- (ii) ensure actual emission decreases at least as great as the emission increases expected from the Big Stone II project, and

(iii) ensure that the decreases in actual emissions are enforceable as a practical matter, at and after the date that actual construction of the Big Stone II project begins.

To ensure that no significant net emission increase will occur at the source (i.e., the overall Big Stone plant) for SO<sub>2</sub> or NO<sub>x</sub>, the permit must also establish SO<sub>2</sub> and NO<sub>x</sub> emission limits that are specific to the emissions units associated with the Big Stone II project and that, when summed together, are no greater than the amount of actual emission decreases required from Big Stone I plus the PSD significance threshold.

The permit must also specify how CEMS measurements will be used and how emissions will be calculated, to show compliance with the unit-specific emission limits mentioned above:

(a) For NO<sub>x</sub>: Since all of the NO<sub>x</sub> emission decrease below the PSD “baseline” emission rate at Big Stone I is proposed to be achieved within Big Stone I itself and not downstream, the amount of that decrease can be measured by use of a NO<sub>x</sub> CEMS and flue gas flow monitor immediately downstream of Big Stone I, before its gas stream is combined with Big Stone II. Similarly, a NO<sub>x</sub> CEMS and flue gas flow monitor immediately downstream of SCR controls for Big Stone II can be used to measure the amount of controlled NO<sub>x</sub> from Big Stone II, before its gas stream is combined with Big Stone I.

(b) For SO<sub>2</sub>: With regard to determining the amount of creditable SO<sub>2</sub> emission decrease from Big Stone I, as well as the amount of controlled SO<sub>2</sub> from Big Stone II, we consider it possible to impose and effectively enforce unit-specific emission limits at both Units. During the contested case hearings on the draft Big Stone PSD and Title V permits, Otter Tail Power Company explained how SO<sub>2</sub> can be measured from each Unit. (Contested Case Hearing Transcript (Transcript), pages 620-635.) Similarly, the State made it clear that it is feasible to measure SO<sub>2</sub> from each Unit individually (Transcript, pages 64-65.) We have independently looked into this matter and, consistent with the State’s and Company’s explanations during the hearings, consider it possible to establish a required amount of SO<sub>2</sub> emission decrease below the PSD “baseline” emission rate that is specific to Big Stone I, and to specify a workable methodology for demonstrating compliance through use of properly located CEMS. We also consider it possible to specify a workable methodology for demonstrating compliance with an SO<sub>2</sub> emission limit specific to Big Stone II.

**OR**

Option 2 – Establish Plantwide Applicability Limit: Establish plantwide SO<sub>2</sub> and NO<sub>x</sub> emission limits that satisfy all applicable provisions in §52.21(aa) for establishing a PAL in an appropriate permit. Below are some regulatory provisions that have not been satisfied by the currently proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits for the Big Stone plant, but must be satisfied, if those limits are to serve as PALs. This is not necessarily an exhaustive list of provisions that have not been satisfied.

- (i) PALs must be based on baseline actual emissions and other amounts specified. (§52.21(aa)(2)(i) and §52.21(aa)(6)(i)) The regulations also specify how emissions from newly constructed units are calculated. (§52.21(aa)(6)(ii)). The proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits for Big Stone are not set at the emission level specified in §52.21(aa)(6)(i).
- (ii) Each PAL shall have a PAL effective period of ten years. (§52.21(aa)(4)(i)(f)). The proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits for Big Stone do not have any specified effective period.
- (iii) The PAL permit must contain the calculation procedures that the major stationary source owner or operator shall use to convert the monitoring system data to monthly emissions and annual emissions based on a 12-month rolling total as required by §52.21(aa)(13)(i). (§52.21(aa)(7)(vi)) The proposed Title V permit for Big Stone does not specify any such calculation procedures for demonstrating compliance with the proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits.
- (iv) A source owner or operator must record and report maximum potential emissions without considering enforceable emission limitations or operational restrictions for an emissions unit during any period of time that there is no monitoring data, unless another method for determining emissions during such periods is specified in the PAL permit. (§52.21(aa)(12)(vii)) The proposed Title V permit for Big Stone does not include this requirement in regard to the proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits.
- (v) All data used to validate the PAL must be re-validated through performance testing or other scientifically valid means approved by the Administrator. Such testing must occur at least once every 5 years after issuance of the PAL. (§52.21(aa)(12)(ix)) The proposed Title V permit for Big Stone does not specify any such re-validation in regard to the proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits.
- (vi) The PAL permit shall require an owner or operator to retain annual certifications of compliance pursuant to title V, and the data relied on in certifying compliance, for the duration of the PAL effective period plus five years. (§52.21(aa)(13)(ii)(b)) The proposed Title V permit for Big Stone does not include this requirement in regard to the proposed plantwide SO<sub>2</sub> and NO<sub>x</sub> limits.
- (vii) The PAL shall be established in a PAL permit that meets the public participation requirements in §52.21(aa)(5). (§52.21(aa)(4)(i)(b)) The Administrator shall provide the public with notice of the proposed approval of a PAL permit and at least a 30-day period for submittal of public comment. (§52.21(aa)(5)) The proposed Title V permit for Big Stone has not been identified to the public as a proposed PAL permit.

- (viii) As part of a permit application requesting a PAL, the owner or operator is required to submit certain specific information described in §52.21(aa)(3)(i) through (iii). (§52.21(aa)(3)) The Company has not submitted a permit application requesting a PAL.
- (ix) *PAL permit* means the major NSR permit, the minor NSR permit, or the State operating permit under a program that is approved into the State Implementation Plan, or the title V permit issued by the Administrator that establishes a PAL for a major stationary source. (§52.21(aa)(2)(ix)) The proposed Title V permit for Big Stone does not establish a PAL and therefore is not a PAL permit.

**OR**

Option 3 – Conduct PSD major modification review and revise PSD permit: Conduct a PSD major modification review for SO<sub>2</sub> and NO<sub>x</sub> from the Big Stone II project and revise the PSD permit and statement of basis accordingly. In mentioning this option, we do not want to discourage the State from requiring a scrubber that would control the SO<sub>2</sub> emissions from both the existing Big Stone I unit and the proposed Big Stone II unit. We recognize such an arrangement would likely yield the greatest SO<sub>2</sub> emission decrease source-wide and would likely be the most cost-effective approach for controlling source-wide SO<sub>2</sub>.

To resolve our objection mentioned above on the impermissible enforcement shield language in conditions 9.2 and 9.4, the State must remove that language from the permit.

**Objection #3 -- Inadequate compliance provisions**

Section 9 of the proposed Title V renewal permit, titled “PSD Exemption,” includes, among other things, a plantwide SO<sub>2</sub> emission limit at condition 9.2 and a plantwide NO<sub>x</sub> emission limit at condition 9.4. Section 11, titled “Hazardous Air Pollutant Emission Limits,” includes, among other things, emission limits for various HAPs at conditions 11.3 through 11.5, and a requirement for coal analysis for fluoride content and chloride content at condition 11.7. Related permit condition 7.12 includes requirements to measure HF and HCl.

This is the EPA’s first opportunity to review Section 11 of the proposed permit. Section 11 was not in the draft Title V permit and is being created for the first time in the proposed Title V renewal permit. No public notice or public comment period was provided for the addition of Section 11 to the permit.

The State’s January 2008 draft Title V renewal permit included permit provisions that provided for mercury allowances and contained no other provisions for HAPs. (Draft Title V permit, Section 6.6.) In sharp contrast, Section 11 of the proposed Title V permit contains a fundamentally different approach, which is to limit the source’s potential to emit (PTE) for HAPs. Section 11, adopted by South Dakota’s Board of Minerals and the Environment, contains proposed PTE provisions that are intended to enable the source to avoid “major source” status for

HAPs and thereby avoid case-by-case MACT review which would otherwise be required by 40 CFR 63.40-63.44.

Section 11 contains provisions that are not a logical outgrowth of what the State proposed in the draft Title V permit. EPA and the public were deprived of notice and opportunity to comment on the provisions. PTE is a critical factor in determining the applicability of major source permit requirements. As indicated in Section 11, the State's reason for including the proposed provisions is to limit the PTE of this source for HAPs, such that it will not be a "major source" of air emissions for MACT purposes, as the case-by-case MACT provisions of section 112 of the Clean Air Act apply only to major HAP sources.

The permit record for the draft Title V renewal permit gave no indication that such an approach might ultimately be included in the proposed permit. It is for these reasons that we are expressing concern about the lack of a new public review period for any new PTE limits. We recommend re-noticing. The re-notice should clearly state that the permitting action includes PTE limits to avoid the application of the section 112 case-by-case MACT requirements, and the statement of basis should fully discuss the bases for any proposed limits. (40 CFR 70.7(a) and (h)). The State's process should include a new 30-day comment period for the public. This notice is necessary to finally determine whether the conditions proposed in Section 11 are appropriate to apply to this facility and whether the permit does so in an appropriate manner.

We are also objecting because permit conditions 9.2, 9.4, 11.3, 11.4 and 11.5 fail to comply with 40 CFR 70.6(c)(1), and the corresponding State rule at ARSD 74:36:05:16.01(14), which requires Title V permits to include compliance certification, testing, monitoring, reporting and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. Furthermore, we are objecting because permit conditions 7.12, 11.3, 11.4 and 11.5 fail to comply with 40 CFR 70.6(a)(3)(i)(B), and the corresponding State rule at ARSD 74:36:05:16.01(9)(b), which requires Title V permits to include periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit. Below is a detailed explanation for our objection and discussion.

Note: If the State decides to resolve our objection #1 above by replacing permit conditions 9.2 and 9.4 with unit-specific emission limits for SO<sub>2</sub> and NO<sub>x</sub>, or by establishing PALs for SO<sub>2</sub> and NO<sub>x</sub>, then our objection below on those permit conditions would become moot.

Condition 9.2 (Plantwide sulfur dioxide limit): This condition specifies a plantwide SO<sub>2</sub> limit of 13,278 tons per rolling 12-month period. The condition does not say where the CEMSs are to be located for measuring the emissions, nor the calculation methodology for adding up the CEMS measurements from multiple locations and converting the measurements into tons of emissions per rolling 12-month period. Condition 8.4 requires CEMSs for SO<sub>2</sub> and flue gas flow "on Unit #1" and "on Unit #13," but does not say where the CEMSs and flue gas flow monitors are to be located. The permit therefore does not comply with §70.6(c)(1) because it cannot assure compliance with the plantwide SO<sub>2</sub> limit.

To resolve our objection, the permit must make it clear where each CEMS for SO<sub>2</sub> is to be located. This must include a CEMS to measure the uncontrolled SO<sub>2</sub> emissions from Big Stone I at all times when those emissions are not being routed to the common scrubber for Big Stone I and II. If any partial bypassing of the scrubber is planned to be allowed for Big Stone I, through any separate bypass stack, the permit must also make it clear that all SO<sub>2</sub> emissions from Big Stone I must still be measured at all times by a CEMS. The permit must also include a specific calculation methodology for adding up the CEMS measurements from multiple locations and converting the measurements into tons of emissions per rolling 12-month period.

Condition 9.4 (Plantwide nitrogen oxide limit): This condition specifies a plantwide NO<sub>x</sub> limit of 16,448 tons per rolling 12-month period. The condition does not say where the CEMSs are to be located for measuring the emissions, nor the calculation methodology for adding up the CEMS measurements from multiple locations and converting the measurements into tons of emissions per rolling 12-month period. Condition 8.4 requires CEMSs for NO<sub>x</sub> “on Unit #1” and “on Unit #13,” but does not say where the CEMSs are to be located. The permit therefore does not comply with §70.6(c)(1) because it cannot assure compliance with the plantwide NO<sub>x</sub> limit.

To resolve our objection, the permit must make it clear where each CEMS for NO<sub>x</sub> is to be located. The permit must also include a specific calculation methodology for adding up the CEMS measurements from multiple locations and converting the measurements into tons of emissions per rolling 12-month period.

Conditions 11.3 and 11.4 (Unit #13 emission limits for HF and HCl): These conditions specify emission limits of 2.17 pounds per hour (lb/hr) for HF and 2.17 lb/hr for HCl. These conditions fail to specify a test method and test frequency. The conditions cross-reference section 7.0 of the permit for stack testing requirements, but section 7.0 (at condition 7.12) does not specify a test method or test frequency for HF or HCl. Condition 7.12 only requires an initial performance test within 180 days after initial startup of Unit #13. (See discussion below on Condition 7.12.) The required monitoring in conditions 11.3 and 11.4 therefore fails to comply with 40 CFR 70.6(c)(1) because it fails to assure compliance with these emission limits.

To resolve our objection, the State must revise conditions 11.3 and 11.4 to specify Method 13A or 13B for HF and Method 26 for HCl, unless a technically valid reason is presented in the permit record as to why some other method should be specified instead. These permit conditions must also require periodic emission tests. Alternatively, these conditions may cross-reference Condition 7.12 for test methods and test frequency, in which case Condition 7.12 must specify the test methods and test frequency. A one-time test would not be sufficient. The State must develop periodic monitoring requirements that assure compliance with the permit conditions and explain why the proposed requirements will, in fact, assure compliance. See related discussion on periodic monitoring below.

Condition 11.5 (Unit-wide HAP limit for Unit #13): This condition specifies unit-wide HAP emission limits of 9.5 tons of a single HAP and 23.8 tons of a combination of HAPs, from permitted units and fugitive sources, per 12-month rolling period. The condition requires HAP

emissions (other than mercury) to be based on some unspecified method (the most recent stack performance test, mass balance, emission factors, or other approved method of calculating HAP emissions). Additionally, no test frequency is specified. Related condition 11.8 states that Unit #13 is exempt from a case-by-case MACT determination based on the operational and HAP emission limits in this permit. The permit does not indicate if emissions during periods of startup, shutdown or malfunctions were considered when establishing the proposed limit and, if so, how those emissions were estimated to assure the source would be below major source levels.

The proposed monitoring in condition 11.5 fails to comply with 40 CFR 70.6(c)(1) because it fails to assure compliance with emission limits, in the following respects:

- The condition fails to indicate how the permittee must demonstrate that it is maintaining emissions at a level below the major source thresholds in section 112, both on an individual HAP basis (i.e., <10 tons per year individual HAP) and on a total HAP basis (i.e., <25 tons per year total HAP).
- The condition fails to indicate if emissions during periods of startup, shutdown or malfunctions are to be included in demonstrating compliance.

To resolve our objection, the State must provide in its analysis of the permit application such detail as is necessary to confirm the <10 tpy and <25 tpy status requested by the permittee. The State must explain how it established the potential to emit HAP for Unit #13. The State must then revise condition 11.5 to include the following:

- A requirement specifying how the permittee must demonstrate compliance with the emission limit of 9.5 tons per rolling 12-month period for the identified acid gas HAP.
- A requirement specifying how the permittee must demonstrate compliance with the total HAP limit of 23.8 tons per rolling 12-month period, or, alternatively, the State must include an explanation of why monitoring and reporting of HAP emissions above what is required for acid gas and mercury HAP is not necessary to assure compliance with the limit.
- Where emission measurements are to be required, the required method for measurement and the required frequency of measurement must be specified. A one-time test would not be sufficient. As mentioned above, the State must develop periodic monitoring requirements that assure compliance with the permit conditions and explain why the proposed requirements will, in fact, assure compliance.
- The State must include a discussion of how emissions during periods of startup, shutdown or malfunctions were considered in establishing the potential to emit HAP for Unit #13, and if periods of startup, shutdown or malfunctions were not considered, the State must explain how the source will comply with the potential to emit limitation if such events occur in any 12-month period.

Condition 7.12 (Initial performance tests for HAPs): This condition only requires an initial performance test at Unit #13 for HF and HCl, within 180 days after initial startup of Unit #13. No subsequent tests are required. This condition fails to comply with 40 CFR 70.6(a)(3)(i)(B) because it fails to require periodic testing. To resolve our objection, the State must revise the condition to specify a test frequency and provide a basis for why that frequency will assure compliance.

Condition 11.7 (Unit #13 coal analysis). This condition requires the permittee to determine the fluoride content and the chloride content by weight in the coal, on a weekly basis. The condition does not say what is to be done with the data, nor does it specify any limits on fluoride or chloride content in coal. We do not object to the inclusion of a condition in the permit to require determination of fluoride and chloride content in coal, but if the condition is intended to support the enforceability of the HAP limits, or to otherwise support exempting Unit #13 from case-by-case MACT review, the condition must indicate what is to be done with the coal data. For example, if it is the State's intent that the data be used to develop a correlation between HAP content in the coal and actual HAP emissions, using emission test data, to show compliance with the HAP emission limits in condition 11.5, this should be indicated in condition 11.7, and the condition should be cross-referenced by condition 11.5.