

DATE: December 13, 2011

TO: Air Management Permit Team
Air Management Compliance Team
Kendra Fisher, LS/5
Michael Scott, LS/5

FROM: Andrew Stewart, AM/7

SUBJECT: Guidance Related to Parametric Monitoring Parameters in Permits

Attached is the finalized guidance related to parametric monitoring requirements in permits. The guidance should be implemented immediately for all operating permits that have not gone to public comment, for all new construction permit applications received, and for construction permits already under review as is reasonable.

BACKGROUND

EPA has granted petitions and Wisconsin DNR has received public comments regarding the treatment of parametric monitoring parameters and ranges in Title V permits. Wisconsin DNR has responded with this guidance related to the following three issues:

Issue #1 - Title V permits must include all applicable requirements and all requirements necessary to assure compliance with those applicable requirements. Petitioners on Title V permits have questioned the legality of including parametric monitoring information relied upon to demonstrate compliance with an applicable requirement in an off-permit document that is not subject to public review and comment.

Issue #2 - Related to Issue #1, the petitions on Title V permits have questioned the basis for parametric monitoring ranges when the preliminary determination for the operation permit has not provided an explanation of how the parametric monitoring range was established or how operation within the parametric monitoring range demonstrates compliance with an applicable requirement.

Issue #3 - Under 40 CFR 70.6(a)(3)(i)(B), where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring, the permit must include periodic monitoring sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit. Petitions on Title V permits have questioned whether a given parametric monitoring frequency, based on the requirements in ch. NR 439.055, Wis. Adm. Code, is sufficient and whether the monitoring frequency should be aligned with the time period of the applicable emission limitation.

GUIDANCE FOR ISSUE #1 – WHERE TO SPECIFY MONITORING PARAMETER RANGES

Many facilities use control equipment to comply with an applicable emission limitation for a given pollutant. For many of these emission units, the permittee uses a surrogate parameter (known as a parametric monitoring) related to the proper operation of control equipment to determine compliance status. Historically, the Wisconsin DNR has been inconsistent in relation to whether these parametric monitoring parameter ranges reside in a permit or in some other document (e.g., Malfunction Prevention and Abatement Plan). **To resolve this issue, Wisconsin DNR will place all parametric monitoring parameter ranges in either the body of the operation permit or in an attached document that is subject to public comment, such as a CAM plan.**

Going forward, Wisconsin DNR will use the revision procedures under ch. NR 407, Wis. Adm. Code, to modify a parametric monitoring range. Ch. NR 407, Wis. Adm. Code, allows for an administrative, a minor and a significant revision process. When possible, the minor revision procedures will be the preferred option for modifying parametric monitoring ranges. Under s. NR 407.12, Wis. Adm. Code, a request for a minor revision may be processed that meets the criteria under s. NR 407.12(1), Wis. Adm. Code. US EPA Region V has stated that changing a parametric monitoring range with cause does not represent a significant change to existing monitoring, reporting or recordkeeping requirements. Under the minor revision procedure, the permittee may operate under the proposed change immediately upon filing the request while Wisconsin DNR completes the revision procedures listed under s. NR 407.12(4), Wis. Adm. Code.

Some parametric monitoring ranges are derived explicitly from a construction permit. In these cases, a new construction permit or construction permit revision in conjunction with a ch. NR 407, Wis. Adm. Code, significant operation permit revision (or renewal) procedure is required. Wisconsin DNR is proposing the following new permit language and procedures to address these issues:

Operation Permits

The minor or significant revision procedures under ch. NR 407, Wis. Adm. Code, may be used to modify parametric monitoring ranges that were not established or contained in a construction permit.

The significant revision procedures under ch. NR 407, Wis. Adm. Code, must be used in conjunction with construction permit procedures to modify any parametric monitoring range established or contained in a construction permit. At the request of the applicant, Wisconsin DNR will also include the language “an alternate range may be approved by the Department using the procedures under ch. NR 407, Wis. Adm. Code” in the permit. This language allows the use of minor revision procedures for all future modifications of the parametric monitoring range.

Construction Permits - New Emission Units

Unless requested by the permittee, Wisconsin DNR will not place parametric monitoring ranges in future construction permits. The construction permit will establish the authority for Wisconsin DNR to require a parametric monitoring range and the method for modifying the parametric monitoring range. The construction permit will require the permittee to submit the parametric monitoring range in order to complete the operation permit application for the new emission unit. Under this scenario, the issuance of an operation permit including the new emission unit would be delayed until Wisconsin DNR receives the parametric monitoring range. Example 1, on the following page, contains draft language to use in a construction permit for new units that have no established parametric monitoring range.

Construction Permits - Existing Emission Units

For existing emission units that are being modified and which already have a parametric monitoring range specified in a previous construction permit, at the request of the permittee Wisconsin DNR may use a new

construction permit or a construction permit revision in conjunction with the issuance of an operation permit revision or renewal, to replace the existing parametric monitoring range language with alternate language. Example 1, below, contains draft language to use when an existing emission unit is being modified and the parametric monitoring range is expected to change. Example 2, on the following page, contains draft language to use when an existing emission unit is being modified and the parametric monitoring range is not expected to change.

Example 1 – Construction Permit Language for New Units and for Existing Units for Which the Parametric Monitoring Range is Expected to Change.^{1,2}

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping And Monitoring Requirements
1. Particulate matter emissions	(1) 2.31 pounds per hour. [ss. NR 415.05(1)(m), NR 404.08(2), Wis. Adm. Code and s. 285.65(3), Wis. Stats.]	(1) The baghouse shall be in operation at all times when P44 is operating. [s. NR 407.09(4)(a), Wis. Adm. Code] (2) The permittee shall maintain the pressure drop across each baghouse within a range established as required under I.ZZZ.5.(a)(5). Upon issuance of the operation permit, an alternate range may be approved by the Department using the procedures under ch. NR 407, Wis. Adm. Code. [s. 285.65(3), Wis. Stats. and s. NR 439.055(1)(b), Wis. Adm. Code] (3) The permittee shall perform an internal inspection of the baghouse once every calendar year to ensure that the control equipment is operating properly. The time interval between inspections may not be closer than 6 months. These inspections shall include, but not be limited to inspections and maintenance/ repair (as necessary) of: (a) valves, hatches, dampers, and gaskets for signs of air infiltration; and (b) bag condition, tension, and signs of clean side dust deposits. [s. NR 407.09(4)(a)1., Wis. Adm. Code]	(1) <u>Reference Test Method for Particulate Matter Emissions:</u> Whenever compliance emission testing is required, US EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including backhalf (Method 202) shall be used to demonstrate compliance. [s. NR 439.06(1), Wis. Adm. Code] (2) The permittee shall record the pressure drop across the baghouse once every 8 hours of operation or once per day the source is operated whichever yields the greater number of measurements. [ss. NR 439.055(2)(b)1. and NR 407.09(4)(a), Wis. Adm. Code] (3) The permittee shall keep records of: (a) the date, time, and initials of the person performing the inspections required by condition 1.b.(3); (b) a list of the items inspected; and (c) any maintenance or repairs performed as a result of these inspections. [ss. NR 439.04(1)(d) and NR 407.09(4)(a), Wis. Adm. Code]

5. Construction Permit Transitional Language.		
a. Limitations:		
<p>...</p> <p>(4) Emission Stack Testing. The permittee shall conduct a compliance emission stack test of new emission unit(s) Process P01 for particulate matter emissions (including backhalf) and visible emissions within 90 days of the date this emission unit becomes operational.</p> <p>(a) If compliance emission test(s) cannot be conducted within the time frames specified, the permit holder may request and the Department may approve, in writing, an extension of time to conduct the test(s).</p> <p>(b) All testing shall be performed with the emissions unit operating at capacity or as close to capacity as practicable and in accordance with approved procedures. If operation at capacity is not feasible, the source shall operate at a capacity level which is approved by the Department in writing.</p> <p>(c) The Department shall be informed at least 20 working days prior to any stack testing so a Department representative can witness the testing. At the time of notification, a compliance emission test plan shall also be submitted to the Department for approval. When approved in writing, an equivalent test method may be substituted for the reference test method. [s. NR 439.07, Wis. Adm. Code]</p> <p>(5) Control Device Parametric Monitoring Parameters. Within 60 days of completion of the compliance testing required in I.ZZZ.5.a.(4), the permittee shall propose to the Department, for review and approval, the operating range for the pressure drop across each baghouse, in inches of water, related to the operation of Processes P01. [s. 285.65(3)&(10), Wis. Stats.]</p> <p>...</p>		
b. Compliance Demonstration:		c. Test Methods, Recordkeeping, and Monitoring:
<p>...</p> <p>(4) Submittal of Compliance Testing Information and Other Updates. The permittee shall submit to the Department any updates of the permit application. Updates are required if</p>		None Applicable.

¹ This example assumes the source will be required to perform compliance testing as part of the construction permit.

² The example language does not require the parametric monitoring range be established solely on the range observed during performance testing.

<p>any changes that occur which are not specified or described in the plans and specifications dated 2/03/2009. The updates shall be made within 60 days of the date of the change. Other information to be submitted shall include the notification requirements and stack tests results. [s. NR 439.04(1)(d), Wis. Adm. Code]</p> <p>...</p>	
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--

Example 2 – Construction Permit Language for Existing Units for Which the Parametric Monitoring Range is Not Expected to Change

Pollutant	a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping And Monitoring Requirements
1. Particulate matter emissions	(1) 2.31 pounds per hour. [ss. NR 415.05(1)(m), NR 404.08(2), Wis. Adm. Code and s. 285.65(3), Wis. Stats.]	<p>(1) The baghouse shall be in operation at all times when P44 is operating. [s. NR 407.09(4)(a), Wis. Adm. Code]</p> <p>(2) The permittee shall maintain the pressure drop across each baghouse within the range contained in the current operation permit. An alternate range may be approved by the Department using the procedures under ch. NR 407, Wis. Adm. Code. [s. 285.65(3), Wis. Stats. and s. NR 439.055(1)(b), Wis. Adm. Code]</p> <p>(3) The permittee shall perform an internal inspection of the baghouse once every calendar year to ensure that the control equipment is operating properly. The time interval between inspections may not be closer than 6 months. These inspections shall include, but not be limited to inspections and maintenance/ repair (as necessary) of:</p> <p>(a) valves, hatches, dampers, and gaskets for signs of air infiltration; and</p> <p>(b) bag condition, tension, and signs of clean side dust deposits.</p> <p>[s. NR 407.09(4)(a)1., Wis. Adm. Code]</p>	<p>(1) <u>Reference Test Method for Particulate Matter Emissions</u>: Whenever compliance emission testing is required, US EPA Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H or 17 including backhalf (Method 202) shall be used to demonstrate compliance. [s. NR 439.06(1), Wis. Adm. Code]</p> <p>(2) The permittee shall record the pressure drop across the baghouse once every 8 hours of operation or once per day the source is operated whichever yields the greater number of measurements. [ss. NR 439.055(2)(b)1. and NR 407.09(4)(a), Wis. Adm. Code]</p> <p>(3) The permittee shall keep records of:</p> <p>(a) the date, time, and initials of the person performing the inspections required by condition 1.b.(3);</p> <p>(b) a list of the items inspected; and</p> <p>(c) any maintenance or repairs performed as a result of these inspections.</p> <p>[ss. NR 439.04(1)(d) and NR 407.09(4)(a), Wis. Adm. Code]</p>

GUIDANCE FOR ISSUE #2 – JUSTIFICATION FOR MONITORING PARAMETER RANGES

Typically, parametric monitoring ranges are derived from compliance testing, manufacturer's recommendations, historic operating data or other sources. However, the permit preliminary determination may not explain the derivation of the parametric monitoring range. **To resolve this issue, Wisconsin DNR will require the permittee to provide written justification of any parametric monitoring range.**

While Wisconsin DNR has not established separate guidance related to what would constitute adequate written justification, the following information should be part of any justification:

- A written description of how the selected parametric parameter is a reasonable indicator of the proper operation of the applicable control equipment
- A written description of how the parametric monitoring range was established, including what source or combination of sources were used.
- Supporting documentation, including test reports or executive summaries, representative historic operating data, manufacturer's documentation, etc.

Wisconsin DNR will review the justification provided by the permittee. If the basis of the justification appears to be valid, Wisconsin DNR will include the justification in the preliminary determination supporting the revised or renewed operation permit.

Operations Permits – Existing Sources

For sources in existing operations permits, the permittee will be required to provide justification for the parametric monitoring ranges as follows:

- Upon application for revision of an operation permit for the sources affected by the revision.
- Upon application for renewal of an operation permit for all sources.
- Upon the request of Wisconsin DNR, such as for complaint or enforcement investigations.

Construction Permits – New or Modified Sources

For new sources in which the parametric monitoring range is not yet established or for modified sources for which the parametric monitoring range is expected to change after construction is complete, the permittee will provide written justification of the selected parametric monitoring range to complete the operation permit application. This justification will be included in the preliminary determination supporting the operation permit. The operation permit will not be processed until this information is received.

Construction Permits – Modified Sources

For a modified source in which the parametric monitoring range is not expected to change, the permittee will provide written justification of the selected parametric monitoring range with the construction permit or construction permit revision application. This justification will be included in the preliminary determination supporting the construction permit and the operation permit revision or renewal.

GUIDANCE FOR ISSUE #3 – APPROPRIATE MONITORING FREQUENCY

Typically, when parametric monitoring is used to demonstrate ongoing compliance, the monitoring and recordkeeping requirements specified in ch. NR 439.055, Wis. Adm. Code, are used. In recent years, petitions on Title V permits have questioned whether a given parametric monitoring frequency, based on the requirements ch. NR 439.055, Wis. Adm. Code, is sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the emission limitations as required under 40 CFR 70.6(a)(3)(i)(B) and s. NR 407.09(1)(c)1.b., Wis. Adm. Code.

In recent petition responses, US EPA has stated that the use of a "three prong approach" for Title V sources, when viewed as a whole, is adequate to satisfy the requirements of 40 CFR 70.6(a)(3)(i)(B). As illustrated by US EPA, the three prong approach consists of:

1. Performance testing to demonstrate that the specified limit is being met.
2. Operation and maintenance of the control device to ensure that it continues to operate properly.
3. A Compliance Assurance Monitoring (CAM) plan to provide a mechanism for assessing the performance of a control device on an ongoing basis.

To resolve this issue, the Wisconsin DNR will implement versions of the three prong approach, depending on the source type (i.e., Title V source subject to CAM, Title V source not subject to CAM, synthetic minor capped at or above 80 tons per year (SM80), synthetic minor capped at less than 80 tons per year (SM), and minor). The preliminary determination for the operation permit will include a Monitoring section that will describe how the three prong approach will ensure compliance for a given emission unit based on the information supplied by the permittee as discussed below. Note that the number of "prongs" is not relevant to ensure compliance, as much as the operation permit and preliminary determination provide a consistent and justifiable approach to reviewing and establishing monitoring to meet the requirements of 40 CFR 70.6(a)(3)(i)(B) as applicable.

Title V Source – Pollutant Specific Emission Unit (PSEU) subject to 40 CFR Part 64

Emission units at a Title V major source that are subject to CAM will follow the three prong approach as described by US EPA. The three prongs include:

- Initial compliance testing and recurring compliance testing (minimum once every 5 years)
- Listing of operation and maintenance requirements necessary to ensure proper operation
- Preparation and implementation of a CAM plan

For these sources, compliance testing will be performed on a recurring basis; at a minimum of once every 5 years. Many sources that may be affected by this requirement are already required to perform biennial testing under ch. NR 439.075, Wis. Adm. Code.³

As part of the three prong approach, the permittee will provide the Wisconsin DNR with relevant operation and maintenance requirements to ensure proper operation of an applicable control device for placement in the operation permit as enforceable requirements or in a plan that is public noticed with the draft permit. If the operation permit already includes operation and maintenance requirements necessary to ensure proper operation of an applicable control device, the permittee will review these requirements with Wisconsin DNR, and supplement them as necessary. This information may be provided with the CAM plan required below.

³ This requirement would still allow an emission source to waive one biennial test as allowed under s. NR 439.075(4), Wis. Adm. Code.

As part of CAM, the permittee will provide justification of the monitoring approach. This justification will address the following: (1) the applicability of existing monitoring equipment and procedures; (2) the ability of the monitoring to account for process and control device operational variability; (3) the reliability and latitude built into the control technology; (4) the level of actual emissions relative to the compliance limitations; and (5) why the monitoring range is appropriate to reflect the proper operation of the control device. Based upon item 2. and 3., the permittee shall provide the monitoring and recordkeeping frequency for any parametric monitoring parameter that they believe is sufficient to yield reliable data to demonstrate proper operation. At a minimum, the proposed monitoring and recordkeeping frequencies must meet the requirements under ch. NR 439.055, Wis. Adm. Code, and 40 CFR Part 64. Wisconsin DNR will review the CAM justification provided by the permittee. If the basis of the justification is valid, Wisconsin DNR will include the justification in the preliminary determination supporting the operation permit.

SM80 Minor Sources or a Title V Source – PSEU not subject to 40 CFR Part 64

Emission units at synthetic minor sources capped at or above 80% of the major source threshold or PSEUs at a Title V source that are not subject to CAM will follow a modified three prong approach. The three prongs include:

- Initial compliance test, if appropriate, and recurring compliance test, if appropriate
- Requirement to use control device at all times the process is in operation and listing of operation and maintenance requirements necessary to ensure proper operation
- CAM-like justification of monitoring frequency

Typically, an initial compliance test will be performed for an emission unit equipped with a control device. For these sources, a recurring compliance test may also be appropriate. If the permit writer does not believe an initial or recurring compliance test is required, the permit writer will document the reasoning behind these decisions in the preliminary determination to the operation permit.

As part of the three prong approach, the permittee will provide Wisconsin DNR with relevant operation and maintenance requirements to ensure proper operation of an applicable control device for placement in the operation permit as enforceable requirements or a plan containing the requirements to be public noticed with the draft permit. If the operation permit already includes operation and maintenance requirements necessary to ensure proper operation of an applicable control device, the permittee will review these requirements with Wisconsin DNR, and supplement them as necessary. This information may be provided as outlined below.

While these emission units are not subject to the requirements of 40 CFR part 64, and are not required to prepare a CAM plan, the information contained in a CAM plan provides adequate justification of the monitoring approach. As such, Wisconsin DNR will require the permittee prepare a CAM-like justification of their monitoring approach. This justification will address the following: (1) the applicability of existing monitoring equipment and procedures; (2) the ability of the monitoring to account for process and control device operational variability; (3) the reliability and latitude built into the control technology; (4) the level of actual emissions relative to the compliance limitations; and (5) why the monitoring range is appropriate to reflect the proper operation of the control device. Based upon item 2. and 3., the permittee shall provide the monitoring and recordkeeping frequency for any parametric monitoring parameter that they believe is sufficient to yield reliable data to demonstrate proper operation. At a minimum, the proposed monitoring and recordkeeping frequencies must meet the requirements under ch. NR 439.055, Wis. Adm. Code, or 40 CFR Part 64. Wisconsin DNR will review the justification provided by the permittee. If the basis of the justification is valid, Wisconsin DNR will include the justification in the preliminary determination supporting the operation permit.

SM and Minor Sources

Emission units at natural minors or synthetic minor sources capped at less than 80% of the major source threshold will follow a modified three prong approach. Typically, these facilities do not have the same technical expertise as the Title V sources or complex control equipment. The three prongs for these facilities include:

- Initial compliance test, if appropriate, and recurring compliance test, if appropriate
- Requirement to use control device at all times the process is in operation and listing of operation and maintenance requirements necessary to ensure proper operation
- Ch. NR 439.055 monitoring frequency, at a minimum

Typically, an initial compliance test will be performed for an emission unit equipped with a control device. For these sources, a recurring compliance test may also be appropriate. If the permit writer does not believe an initial or recurring compliance test is required, the permit writer will document the reasoning behind these decisions in the preliminary determination to the operation permit.

As part of the three prong approach, the permittee will review operation and maintenance requirements for the control device with Wisconsin DNR. Depending on the technical sophistication of the facility, Wisconsin DNR may also provide operation and maintenance requirements based on similar control equipment at other facilities.

These sources will follow, at a minimum, the monitoring frequency listed under ch. NR 439.055, Wis. Adm. Code. However, this guidance document does not preclude a permit writer or permittee from requesting more frequent monitoring and recordkeeping as necessary to ensure proper operation of the control equipment. Typically, minor sources use control equipment that do not have automated parameter recording. Increasing the monitoring frequency for minor sources may create a significant administrative burden.