



**Air Pollution Control Permit Number: ROP-B01**

**Air Pollution Control Permit Number: RCP-B01**

## **AIR POLLUTION CONTROL TYPE B REGISTRATION OPERATION PERMIT (ROP)**

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code, the permittee granted coverage under this permit is authorized to operate a direct stationary source in conformity with the conditions herein.

**AND**

## **TYPE B REGISTRATION CONSTRUCTION PERMIT (RCP)**

Authorization to modify a source under this registration construction permit expires when the registration operation permit is issued for the emission units included in this permit. Notwithstanding the fact that authorization to modify a source expires, all conditions in this construction permit are permanent unless they are revised through revision of the registration construction permit or through issuance of a new construction permit.

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code, the owner or operator granted coverage under this permit is authorized to modify and to initially operate a stationary source in conformity with the conditions herein.

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in this permit.

Dated at Madison, Wisconsin, \_\_\_\_\_ February 23, 2016 \_\_\_\_\_

STATE OF WISCONSIN  
DEPARTMENT OF NATURAL RESOURCES  
For the Secretary

By  /s/ \_\_\_\_\_  
Kristin Hart  
Chief, Air Permits and Stationary Source Modeling Section

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## Glossary of Terms Used in This Permit and Other Useful Information

**Annual maximum controlled emissions** – For the purposes of this permit, annual maximum controlled emissions are the maximum hourly emissions calculated using the control efficiencies listed in Section G. of this permit (if control equipment is used) multiplied by 8760 hours per year for all emissions sources at the facility. Emission units listed in Attachment 1 of this permit are not included in the calculation of annual maximum controlled emissions. If an emission unit's physical design makes it impossible to operate 8760 hours per year, the annual maximum controlled emissions may be calculated taking time restrictions into account.

**Facility-wide emissions** – For the purposes of this permit, facility-wide emissions are the total emissions generated by all emission sources at the facility, except emission units listed in Attachment 1 of this permit, taking into account any reductions made by a control device or technique. When considering reductions made by a control device, only the control devices and control device efficiencies listed in this permit may be used.

**Hazardous air pollutants or contaminants** are those regulated by s. 112(b) of the Clean Air Act or ch. NR 445, Wis. Adm. Code.

**Photochemically Reactive Organic Compounds** are defined in s. NR 419.02(14), Wis. Adm. Code, as any of the following: Group A: Hydrocarbons, alcohols, aldehydes, esters, ethers or ketones, which have olefinic or cyclo-olefinic type unsaturation. Group B: Aromatic compounds with 8 or more carbon atoms to the molecule, except ethylbenzene. Group C: Ethylbenzene, toluene or ketones having branched hydrocarbon structures. Group D: A solvent or mixture of organic compounds in which any of the following conditions are met: 1. More than 20% of the total volume is composed of any combination of compounds listed in group A, B, or C. 2. More than 5% of the total volume is composed of any combination of the compounds listed in group A. 3. More than

8% of the total volume is composed of any combination of the compounds listed in group B.

**Portable source** is a facility, installation, operation or equipment that emits air pollution only while at a fixed location but is capable of being transported to a different location. A portable source is a type of direct stationary source. Examples include asphalt plants. An automobile is NOT a portable source.

**Volatile Organic Compounds** or VOC is defined in s. NR 400.02(162), Wis. Adm. Code, and means any organic compound which participates in atmospheric photochemical reactions. This includes any such organic compound other than those listed in s. NR 400.02(162), Wis. Adm. Code.

### **Abbreviations**

BACT – Best Available Control Technology

CO – Carbon Monoxide

HAP – Hazardous Air Pollutant or Contaminant

GACT – Generally Available Control Technology

LACT – Latest Available Control Technique and Operating Practices Demonstrating Best Current Technology

LAER – Lowest Achievable Emission Rate

MACT – Maximum Achievable Control Technology

MSDS – Material Safety Data Sheet

NESHAP - National Emission Standard for Hazardous Air Pollutants

NSPS – New Source Performance Standard

PHAP – Hazardous Air Pollutant emitted as a particulate

PM – Particulate Matter

PM<sub>10</sub> – Particulate Matter less than or equal to 10 microns in diameter

NO<sub>x</sub> – Oxides of Nitrogen

ROP – Registration Operation Permit

RCP – Registration Construction Permit

SO<sub>2</sub> – Sulfur Dioxide

VHAP – Hazardous Air Pollutant emitted as a vapor

VOC – Volatile Organic Compounds

Wis. Adm. Code – Wisconsin Administrative Code

Wis. Stats. – Wisconsin Statutes

## A. EMISSION LIMITATIONS

**All facilities covered by this permit must meet the emission limitations in A.1. and A.2.:**

### 1. Facility-Wide Emission Limits:

For each consecutive 12-month period, facility-wide emissions may not exceed the following:

- (a) Particulate matter, PM<sub>10</sub>, volatile organic compounds, nitrogen oxides, sulfur dioxide, carbon monoxide, and federally regulated hazardous air pollutants listed in s. 112(b) of the Clean Air Act, may not exceed 50% of any applicable major source threshold set forth in s. NR 407.02(4), Wis. Adm. Code.
- (b) Emissions of lead may not exceed 0.5 tons.

[s. 285.65(7) and (14), Wis. Stats., and s. NR 407.105(2)(b), Wis. Adm. Code]

Notes:

- The emission limits in Table 1 are expressed in units of tons per year but are complied with on consecutive 12-month basis.
- Major source thresholds vary according to the attainment status of the area in which the facility is located. If there is a change in the attainment status of the area where the facility is located for any pollutant, then the facility-wide emission limit for that pollutant will also change to 50% of the new major source threshold. Table 1 is for informational purposes only; the ton per year values may change if there is a change in the definition of a major source. These thresholds were current as of February 23, 2016.

**Table 1. Emission Limits**

<b>Pollutant</b>	<b>Emission Limits (tons per consecutive 12-month period)</b>
Particulate Matter and PM <sub>10</sub>	<ul style="list-style-type: none"> <li>• 50.0 for PM<sub>10</sub> attainment &amp; moderate nonattainment areas</li> <li>• 35.0 for serious PM<sub>10</sub> nonattainment areas</li> </ul>
Volatile Organic Compounds (VOC)	<ul style="list-style-type: none"> <li>• 50.0 for ozone attainment and basic, marginal or moderate ozone nonattainment areas</li> <li>• 25.0 for serious ozone nonattainment or areas within ozone transport regions except for any severe or extreme nonattainment area for ozone</li> <li>• 12.5 for severe ozone nonattainment areas</li> <li>• 5.0 for extreme ozone nonattainment areas</li> </ul>
Nitrogen Oxides (NO <sub>x</sub> )	<ul style="list-style-type: none"> <li>• 50.0 for ozone attainment &amp; basic, marginal or moderate ozone nonattainment areas</li> <li>• 25.0 for serious ozone nonattainment or areas within ozone transport regions except for any severe or extreme nonattainment area for ozone</li> <li>• 12.5 for severe ozone nonattainment areas</li> <li>• 5.0 for extreme ozone nonattainment areas</li> </ul>
Sulfur Dioxide(SO <sub>2</sub> )	<ul style="list-style-type: none"> <li>• 50.0</li> </ul>
Carbon Monoxide (CO)	<ul style="list-style-type: none"> <li>• 50.0 for attainment &amp; moderate carbon monoxide nonattainment areas</li> <li>• 25.0 for serious carbon monoxide nonattainment areas</li> </ul>
Lead	<ul style="list-style-type: none"> <li>• 0.5 tons/year</li> </ul>
Section 112(b) Hazardous Air Pollutants (HAPs)	<ul style="list-style-type: none"> <li>• 5.0 for any <i>single</i> HAP</li> <li>• 12.5 for a <i>combination</i> of all HAPs</li> </ul>

### 2. Other Applicable Requirements:

The owner or operator shall comply with all applicable air pollution control requirements in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, all applicable New Source Performance Standards under 40 CFR Part 60 and National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63, and all other applicable federal air pollution control requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [s. 285.65(3) and (13), Wis. Stats.; 40 CFR 50 to 97]

## A. EMISSION LIMITATIONS

### Facilities that emit organic compounds *may* need to meet the requirements in A.3. through A.6:

#### 3. Organic Compound Limitations for Process Lines:

For any process line that emits organic compounds, and which is not exempt under s. NR 424.03(1), Wis. Adm. Code, the owner or operator shall meet the requirements of s. NR 424.03(2) or (3), Wis. Adm. Code, by doing one of the following:

**a.** Apply 85% control as applicable in (1) or (2) below:

(1) For a process line constructed or last modified before August 1, 1979, control photochemically reactive organic compound emissions from the process line by at least 85%.

(2) For a process line constructed or last modified on or after August 1, 1979, control volatile organic compound emissions from the process line by at least 85%.

**b.** In lieu of A.3.a. of this permit, apply latest available control techniques and operating practices demonstrating best current technology (LACT) for the process line as described in A.4. through A.6. of this permit. The LACT as described in this permit shall be followed at all times the process line is operating<sup>1</sup>.

**c.** If a surface coating or printing process line meets the specific applicability<sup>2</sup> requirements in any section from ss. NR 422.05 to 422.155, Wis. Adm. Code, but is not subject to that section based on an exemption, the owner or operator may elect to meet the emission limitations in ss. NR 422.05 to 422.155, Wis. Adm. Code, for the process line instead of meeting A.3.a. or A.3.b. of this permit, after submitting a written request to the Department and receiving approval from the Department to do so. [ss. NR 407.105(1)(c) and NR 424.03(2) and (3), Wis. Adm. Code]

### Requirements A.4. through A.6. apply to each process line for which the owner or operator elected to apply LACT under condition A.3.b:

#### 4. Emission Limitation for all Process Lines, Other Than Hot Mix Asphalt Plants Electing LACT:

**a.** The owner or operator shall limit emissions of photochemically reactive organic compounds to less than 10 tons per calendar year for each process line on which construction or modification last commenced prior to August 1, 1979; and [ss. NR 407.105(1)(c), Wis. Adm. Code, and 285.65(7), Wis. Stats.]

**b.** The owner or operator shall limit emissions of volatile organic compounds to less than 10 tons per calendar year for each process line on which construction or modification commenced on or after August 1, 1979. [ss. NR 407.105(1)(c), Wis. Adm. Code, and 285.65(7), Wis. Stats.]

**c.** By March 1 of each year, the owner or operator shall calculate the amount of photochemically reactive organic compounds or volatile organic compounds as appropriate, emitted by each process line subject to LACT, for the previous calendar year. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

#### 5. Coating Process Line LACT:

**a.** In addition to complying with A.4. of this permit, LACT for a coating process line has been determined to be use of high transfer application techniques including: electrostatic spray, dip/flow coating or low pressure spray methods such as high volume low pressure (HVLP). [ss. NR 407.105(1)(c) and NR 424.03(2)(c), Wis. Adm. Code]

**b.** The owner or operator of a coating process line subject to A.5.a. of this permit shall keep on-site plans, technical drawings or manufacturer's specifications of the coating operation that are adequate to show the coating technique that is used. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

#### 6. Department Approved LACT for Hot-Mix Asphalt Plants:

**a.** Each year, within 30 days of the onset of hot mix production, and after that point, once within 20,000 tons of every additional 100,000 tons of hot mix production, a burner check shall be performed to determine the optimum levels of the following parameters:

(1) Carbon monoxide (CO) and oxygen (O<sub>2</sub>) levels in the drum, using a portable combustion analyzer,

<sup>1</sup> These limits are necessary to ensure that 85% control is technologically infeasible allowing the option to comply with LACT. These emission caps apply only to the process line and do not excuse the facility from meeting the facility-wide VOC limits in condition A.1.

<sup>2</sup> Geographic location/emission rates are not used to determine if a process line meets the specific applicability requirements. The intention is to allow facilities that are in the same industrial group as those for which the section was written to use the conditions in that section.

## A. EMISSION LIMITATIONS

corresponding to burner operation in the most efficient manner, where the test port is located in the drum between the burner and the hot mix asphalt line, at the knock-out box, or in the duct-work after the drum;

- (2) Draft pressure levels at the front of the drum to assure the most efficient burner operation, measured by means of a pressure gauge (i.e., photohelic gauge) or other type of controller that controls a variable damper located in front of or behind the induced draft fan;
- (3) The following liquid fuel viscosity and gaseous fuel pressure and fuel feed conditions:
  - (i) Liquid fuel temperature for each liquid fuel;
  - (ii) Pump pressure for each liquid fuel; and
  - (iii) Gaseous fuel pressure.

b. The hot mix asphalt plant shall undergo a minimum of one burner check annually unless a written waiver is obtained from the Department.

c. The owner or operator shall perform weekly inspections to ensure that the plant drum has tightly sealing drum end seals and duct work which keep air in-leakage to a minimum.

d. The owner or operator shall maintain records of the optimum levels of the parameters in Condition A.6.a. of this permit.

e. The owner or operator shall maintain records of the burner checks and weekly inspections required under Conditions A.6.b. and A.6.c. of this permit. These records shall include the date of each action.

[ss. NR 407.105(1)(c) and NR 424.03(2)(c), Wis. Adm. Code]

## B. STACK AND AIR QUALITY ANALYSIS REQUIREMENTS

**Stacks venting emission units listed in Attachment 1 and stacks that serve exclusively as general building ventilation need not meet the stack requirements, be included in any air quality analyses, or be included in the calculation of maximum controlled emissions under this section.**

### 1. Stack Requirements for Stacks Emitting Particulate Matter, Sulfur Dioxide, Nitrogen Oxides, Carbon Monoxide, and Lead.<sup>3</sup>:

Except as provided in B.2. of this permit, the following requirements apply to all stacks at the facility except those serving emissions units listed in Attachment 1 and stacks serving exclusively as general building ventilation:

a. Stack vented emissions shall be exhausted upwards from unobstructed discharge points that are within 10 degrees of vertical. [s. NR 407.105(2)(a)2, Wis. Adm. Code]

b. Stacks shall be taller than any building that influences the dispersion of emissions from the stack. A building is considered to influence the dispersion of emissions from a stack if it is located within a circle around the building, the radius of which is 5 times the height of the building. [s. NR 407.105(2)(a)3, Wis. Adm. Code]

### 2. Alternative to Stack Requirements:

In lieu of meeting the stack requirements of B.1. of this permit, the owner or operator may demonstrate, through an air quality analysis such as a dispersion modeling analysis, that the facility's emissions will not cause or exacerbate a violation of an ambient air quality standard for the following pollutants: PM<sub>10</sub>, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead. [s. NR 407.105(2)(a)4, Wis. Adm. Code]

<sup>3</sup> The stack and modeling requirements for hazardous air contaminants are in ch. NR 445, Wis. Adm. Code. All facilities covered by this permit must meet the applicable requirements of ch. NR 445, Wis. Adm. Code, in addition to the requirements of this section.

## B. STACK AND AIR QUALITY ANALYSIS REQUIREMENTS

**The air quality analysis requirements in B.3. and B.4. apply when making changes at your facility after the facility is covered under this ROP. See Attachment 2 for a flow-chart summarizing the air quality analysis requirements under this section.**

**3. Air Quality Analysis Requirements for Changes at Facilities that Meet the Stack Requirements in B.1. Above:**

- a.** Except as provided in B.3.b. of this permit, the owner or operator shall demonstrate through an air quality analysis such as an air dispersion modeling analysis that the facility's emissions will not cause or exacerbate a violation of any ambient air quality standard prior to making any of the following changes at the facility:
- (1) Adding a new stack or emissions unit that will emit PM<sub>10</sub>, nitrogen oxides or sulfur dioxide.
  - (2) Making changes to an existing stack that may increase its ambient impact of PM<sub>10</sub>, nitrogen oxides or sulfur dioxide emissions.
  - (3) Making physical or operational changes that will increase the maximum controlled emission rate of PM<sub>10</sub>, nitrogen oxides or sulfur dioxide.
- b.** An air quality analysis is not required when making a change under B.3.a. in the following cases:
- (1) Analysis of PM<sub>10</sub> is not required if facility-wide annual maximum controlled emissions of PM<sub>10</sub> after the change will be less than 5 tons per year.
  - (2) Analysis of sulfur dioxide is not required if facility-wide annual maximum controlled emissions of sulfur dioxide after the change will be less than 25 tons per year.
  - (3) Analysis of nitrogen dioxide is not required if facility-wide annual maximum controlled emissions of nitrogen oxides after the change will be less than 25 tons per year.

[s. NR 407.05(1)(c), Wis. Adm. Code]

**4. Air Quality Analysis Requirements for Changes at Facilities that Provided an Air Quality Analysis Under B.2. of this Permit:**

- a.** Prior to making a change described under B.4.b. of this permit, the owner or operator shall demonstrate, through an air quality analysis such as an air dispersion modeling analysis, that the facility's emissions will not cause or exacerbate a violation of an ambient air quality standard for the following pollutants: PM<sub>10</sub>, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead.
- b.** An air quality analysis is required prior to making any of the following changes at the facility:
- (1) Adding a new stack or emissions unit that will emit PM<sub>10</sub>, sulfur dioxide, nitrogen oxides, carbon monoxide, or lead.
  - (2) Making changes to an existing stack that may result in an increase in the ambient impact of PM<sub>10</sub>, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead emissions.
  - (3) Making physical or operational changes that will increase the maximum controlled emission rate of PM<sub>10</sub>, sulfur dioxide, nitrogen oxides, carbon monoxide, or lead.

[s. NR 407.05(1)(c), Wis. Adm. Code]

## C. PROHIBITIONS

**Changes at your facility that result in any of the following will make your facility ineligible to remain covered under this Registration Permit. You will need to apply for and receive a different type of permit before doing any of the following activities.**

- 1.** The owner or operator may not add or change emission units or operations so the facility would be considered an affected source under ch. NR 409, Wis. Adm. Code, a municipal solid waste combustion source under s. NR 500.03(86), Wis. Adm. Code, or an infectious waste combustion source. [s. NR 407.105(3)(a), Wis. Adm. Code]
- 2.** The owner or operator may not add or change emission units, operations, or stacks so that they cause or exacerbate a violation of an ambient air quality standard or increment. [s. NR 407.105(3)(c), Wis. Adm. Code]
- 3.** Except as allowed in sections H. and I. of this permit, the owner or operator may not add or change emission

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units or operations so that the emission unit or facility would become subject to a standard or regulation under s. 111 of the Act (New Source Performance Standards) or s. 112 of the Act (National Emission Standards for Hazardous Air Pollutant). [s. NR 407.105(3)(b), Wis. Adm. Code]

**4.** The owner or operator may not add or change emission units or operations so that the emissions of HAPs regulated under ch. NR 445, Wis. Adm. Code, require a case-by-case BACT or LAER determination. [s. NR 407.105(4)(b), Wis. Adm. Code]

**5.** The owner or operator may not make a change that results in the facility being classified as a major source under ss. NR 405 or NR 408, Wis. Adm. Code or requires the source to obtain a Part 70 permit. [s. NR 407.105(2)(b), Wis. Adm. Code, and s. 285.65(7), Wis. Stats.]

## D. COMPLIANCE DEMONSTRATION REQUIREMENTS

### All facilities need to meet the compliance demonstration requirement in D.1. and D.2.:

#### 1. Facility-Wide Emissions Calculations:

Within 30 days after the end of each month, the owner or operator shall calculate and record facility-wide emissions of particulate matter, PM<sub>10</sub>, volatile organic compounds, sulfur dioxide, nitrogen oxides, carbon monoxide, lead, each federally regulated hazardous air pollutant, and all federally regulated hazardous air pollutants combined, emitted by the facility in the previous month and in the previous consecutive 12-month period as follows:

- a.** All emissions from the facility shall be included in the calculation except emissions from emissions units listed in Attachment 1;
- b.** Emissions shall be calculated using the methods specified in Attachment 3;
- c.** If the facility uses a control device, the control efficiencies listed in Section G. of this permit shall be used to calculate facility-wide emissions. Only control devices listed in this permit or specifically required in an applicable air pollution requirement may be considered in calculating the facility-wide emissions. Where the control efficiency listed in this permit and the control efficiency required in an applicable requirement differ, the higher control efficiency may be used to calculate facility-wide emissions.
- d.** Alternate Control Efficiency: A control efficiency higher than that listed in Section G. of this permit or required by an applicable requirement may be used in the emission calculations in the following cases:
  - (1)** For thermal and catalytic oxidizers, the facility has demonstrated the higher control efficiency through a Department approved stack test performed within the last 5 years or as required in s. NR 439.075, Wis. Adm. Code, and the permittee maintains the temperature of the oxidizer at or above the temperature measured during the stack test; or
  - (2)** For wall/overspray filters, the filter is guaranteed by the manufacturer to meet the higher control efficiency, the permittee maintains and operates the filter as specified by the manufacturer, and the permittee maintains manufacturer's documentation which specifies the guaranteed control efficiency.
- e.** Work practices and pollution prevention techniques that reduce emissions are not considered control devices for the purposes of this permit. These practices and techniques may be considered when calculating the facility-wide emissions as long as such reductions are quantifiable<sup>4</sup>.

[s. NR 407.105(1)(c), Wis. Adm. Code.]

#### 2. Other Applicable Requirements:

The owner or operator shall ensure that appropriate methods for demonstrating compliance are in place and followed for all other requirements applicable to this facility in ch. 285, Wis. Stats., and chs. NR 400 to NR 499, Wis. Adm. Code, all applicable New Source Performance Standards under 40 CFR Part 60 and National

<sup>4</sup> Work practices that reduce emissions include techniques such as applying water to dust piles or road ways, the practice of keeping containers of organic compounds or used rags covered and other pollution prevention techniques.

## D. COMPLIANCE DEMONSTRATION REQUIREMENTS

Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63, and all other applicable federal air pollution requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [s. NR 407.105(1)(c), Wis. Adm. Code, 40 CFR 50 to 97]

**Facilities that need to use a control device to meet any applicable emission limit must meet the compliance demonstration requirements in D.3.:**

**3.** If the owner or operator must use a control device to meet a facility-wide emission limit in A.1. of this permit, or any other applicable emission limitation in ch. 285, Wis. Stats., and chs. NR 400-499, Wis. Adm. Code, or any other applicable federal air pollution requirement in the Clean Air Act (42 USC 7401 to 7671q and 40 CFR parts 50 to 97), then the following requirements shall be met:

- a. The control device shall be listed in Section G. of this permit or otherwise specifically required by an applicable air pollution requirement.
- b. The control device shall meet, at a minimum, the control efficiency listed in Section G. of this permit for the device or the control efficiency required in an applicable air pollution requirement, whichever is higher.
- c. The control device shall be used at all times the emission unit is operating except as allowed by an applicable emission limitation.
- d. A facility opting to use an alternative control efficiency as allowed under D.1.d. must meet the applicable requirements in D.1.d.(1) or (2) and verify that it can continue to meet that control efficiency by performing a Department approved stack test within 5 years of the date of the previous stack test. If tests are not performed every 5 years, the control efficiencies in Section G., or a control efficiency required in an applicable air pollution requirement, shall be used in emissions calculations.

[s. NR 407.105(1)(c), Wis. Adm. Code]

## E. RECORDKEEPING AND MONITORING REQUIREMENTS

**All facilities must follow the requirements in E.1. through E.5:**

**1. Records of Facility-Wide Consecutive 12-Month Emissions:**

The owner or operator shall maintain records of facility-wide emissions for each consecutive 12-month period as required in D.1. of this permit. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

**2. Recordkeeping and Monitoring Requirements for all Other Applicable Requirements:**

The owner or operator shall conduct monitoring and maintain records sufficient to demonstrate compliance with other applicable requirements in ch. 285, Wis. Stats., chs. NR 400 to NR 499, Wis. Adm. Code, all applicable New Source Performance Standards under 40 CFR Part 60 and National Emission Standards for Hazardous Air Pollutants under 40 CFR Part 63, and other applicable federal air pollution requirements in the Clean Air Act (42 USC 7401 to 7671q) and 40 CFR parts 50 to 97. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code, 40 CFR 50 to 97]

**3. Records of Stack Parameters:**

The owner or operator of a facility shall keep and maintain on site technical drawings, blueprints or equivalent records that describe or illustrate the physical stack parameters of each stack. Stacks that only vent emissions from emissions units listed in Attachment 1, and stacks serving exclusively as general building ventilation, do not need to meet this requirement. [s. 285.65(3), Wis. Stats.]

**4. Air Quality Analysis Records:**

If the owner or operator demonstrated eligibility for this permit through an air quality analysis or if the owner or operator subsequently performed an air quality analysis under B.3 or B.4. of this permit, the owner or operator shall maintain on site records of the following:

- a. Modeling input files used in any air dispersion modeling analyses and the output files sufficient to show the results of the modeling analyses. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]
- b. If required to perform an air quality analysis under B.3. or B.4. of this permit, the owner or operator shall

<b>E. RECORDKEEPING AND MONITORING REQUIREMENTS</b>
also maintain records describing the change that was made and the start date of the construction or modification. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]
<p><b>5. <u>Records Retention:</u></b>                  The owner or operator shall keep on site all records required by this permit for at least five years, unless a longer time period is required under any other condition of this permit or by statute or rule. [ss. NR 407.105(1)(c), NR 439.04(1)(d), and NR 439.04(2), Wis. Adm. Code]</p>
<b>The monitoring and recordkeeping requirements in E.6. through E.8. apply to facilities that must use a control device in order to meet any limit in this permit:</b>
<p><b>6. <u>Air Pollution Control Device Monitoring:</u></b>                  If a source at the facility is equipped with an air pollution control device, the owner or operator shall monitor the operation of the control device to ensure that it is operating properly. The parameters to be monitored and the frequency of monitoring are contained in Table 2. of this permit. If a control device is not listed in Table 2. of this permit, the owner or operator shall monitor the device as recommended by the control device manufacturer or where manufacturer’s recommendations are not available, in a manner consistent with safety and good air pollution control practices for minimizing emissions. [ss. 285.65(3), Wis. Stats., and NR 406.17(1)(c) and NR 439.055, Wis. Adm. Code]</p>
<p><b>7. <u>Air Pollution Control Device Operational Parameter Ranges:</u></b>                  The owner or operator shall maintain a list of the proper control device parameter ranges for each control device at the facility. These ranges shall be based on the control device manufacturer’s recommendations or where manufacturer’s recommendations are not available, determined in a manner consistent with safety and good air pollution control practices for minimizing emissions. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]</p>
<p><b>8. <u>Air Pollution Control Device Monitoring Records:</u></b>                  For each control device used to meet any applicable emission limit, the owner or operator shall record the appropriate control device parameters at the frequency specified in Table 2. of this permit. If the facility operates a type of control device that is not listed below in Table 2., then the owner or operator shall keep records of control device parameters which demonstrate the proper operation of the device per the manufacturer’s specifications or where manufacturer’s specifications are not available, in a manner consistent with safety and good air pollution control practices for minimizing emissions. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]</p>

<b>Table 2. Control Device Monitoring Parameters</b>		
<b>If you operate this control device:</b>	<b>You must monitor this parameter:</b>	<b>At this frequency, or more often:</b>
Centrifugal collector (cyclone)	Pressure drop	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Multiple cyclone w/out flyash reinjection	Pressure drop	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Multiple cyclone with flyash reinjection	Pressure drop	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Wet cyclone separator	Pressure drop and water flow rate	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Wall filter, including paint overspray filters and rotary drum filters	Pressure drop <b>or</b> Condition of filter including alignment, saturation and tears/holes	Pressure drop: once every 8 hours of source operation or once per day, whichever yields the greater number of measurements  Filter condition: once before every day of operation

<b>Table 2. Control Device Monitoring Parameters</b>		
<b>If you operate this control device:</b>	<b>You must monitor this parameter:</b>	<b>At this frequency, or more often:</b>
Fabric filter and HEPA filter, including baghouses and cartridge collectors	Pressure drop <b>or</b> Output of bag leak detection system	Pressure drop: once every 8 hours of source operation or once per day, whichever yields the greater number of measurements Bag leak detection system: once per day of operation
Spray towers	Pressure drop and water flow rate	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Venturi scrubber	Pressure drop and scrubber liquor flow rate	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Condensation scrubber (packed bed)	Pressure drop and scrubber liquor flow rate	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Impingement plate scrubber	Pressure drop and scrubber liquor flow rate	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Electrostatic precipitator	Primary and secondary voltage; primary and secondary current; and sparking rate, in sparks per minute	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Thermal oxidizer	Temperature in the combustion chamber	Once every 15 minutes
Catalytic oxidizer	Temperature in the inlet to the catalytic bed; and catalyst bed reactivity	Once every 15 minutes
Condenser	Condenser outlet gas temperature	Once every 15 minutes
Flaring or direct combustor	Presence of flame	Continuous
Bio-filter	Bed temperature, moisture content	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements
Carbon adsorption	Pressure drop, VOC concentration at outlet	Once every 8 hours of source operation or once per day, whichever yields the greater number of measurements

<b>F. REPORTING AND NOTIFICATION REQUIREMENTS</b>
<b>All facilities covered by this permit must meet the reporting &amp; notification requirements in F.1 and F.2:</b>
<p><b>1. Annual Summary of Monitoring and Certification of Compliance</b>                      By <b>March 1</b> of each year, the owner or operator shall submit an annual summary of monitoring and a compliance certification to the Wisconsin Department of Natural Resources, Bureau of Air Management, Compliance and Enforcement Section, 101 S. Webster Street, P.O. Box 7921, Madison, WI 53707.</p> <ul style="list-style-type: none"> <li>a. The report submission under this condition shall meet the requirements of s. NR 439.03(1)(b) and (c), Wis. Adm. Code.</li> <li>b. The report shall be certified by a responsible official as to the truth, accuracy and completeness of the report.</li> <li>c. The time period to be addressed by the report is the January 1 to December 31 period that precedes the report. [ss. NR 407.105(1)(c), NR 438.03 and NR 439.03(1)(b) and (c), Wis. Adm. Code]</li> </ul>
<p><b>2. Air Emission Inventory Report:</b>                      By March 1 of each year, the owner or operator shall submit an air emission inventory report of annual actual emissions or throughput information in accordance with ch. NR 438, Wis. Adm. Code. If facility emissions are below the reporting thresholds in ch. NR 438, Wis. Adm. Code, the facility may submit, in lieu of a full inventory</p>

## F. REPORTING AND NOTIFICATION REQUIREMENTS

report, notification and documentation that its emissions are below reporting thresholds. [ss. NR 407.105(1)(c) and NR 438.03(1)(c), Wis. Adm. Code]

### The reporting requirements in F.3. and F.4 apply to facilities that changed ownership or performed an air quality analysis prior to making a change during the previous year:

#### 3. Change of Ownership or Control:

The Bureau of Air Management shall be notified of a change of ownership or control of a facility covered by this permit within 30 calendar days after the change. The notification shall specify a date for the transfer of permit responsibility, coverage and liability. [s. NR 407.105(1)(c), Wis. Adm. Code]

#### 4. Reporting requirement for facilities required to provide an air quality analysis under B.3. or B.4. of this permit:

If required to perform an air quality analysis prior to making changes under B.3 or B.4. of this permit, the owner or operator shall submit with the annual certification required in F.1. of this permit the following information associated with operational changes at the facility:

- a. A brief description of the change which caused the need for an analysis under B.3. or B.4. of this permit.<sup>5</sup>
- b. The results of any air quality modeling performed under B.3. or B.4. of this permit, including the modeled concentrations, the background concentration, and the total concentrations. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code]

### Facilities that want to change operations in such a way that they'll no longer be eligible for this permit must notify the Department as required in F.5. before making these changes:

#### 5. Changes Rendering Your Facility Ineligible for This Permit:

Prior to making any change at the facility that would result in the facility no longer being eligible for this permit, the owner or operator shall:

- a. Request in writing to the Department that coverage under this registration permit be revoked;
- b. Submit an application for a construction permit to the Department, unless the change is exempt under chs. NR 405, 406 and 408, Wis. Adm. Code;
- c. Submit an application for an operation permit to the Department, unless the facility is exempt under ch. NR 407, Wis. Adm. Code;
- d. Obtain a construction permit, unless the change is exempt under chs. NR 405, 406 and 408, Wis. Adm. Code.

[s. NR 407.105(6)(a) and (e), Wis. Adm. Code]

### The reporting requirements in F.6. apply to portable sources:

#### 6. Relocation Requirements:

- a. The owner or operator of a portable source covered by this registration permit shall provide written notice to the Department at least 20 days prior to relocation. Relocation may occur if the Department does not object to the relocation.
- b. If a portable source relocates to a location with a different emission threshold in condition A.1. for any pollutant during any calendar year, the owner or operator shall calculate the amount of emissions that occurred at the previous location and the amount of emissions that occurred at the new location. The owner or operator shall compare those emission rates to the appropriate thresholds in condition A.1. of this permit. If the emission rate of any pollutant at the new location is greater than its emission limit, the owner or operation shall apply for a different type of operation permit within 30 days of identifying the exceedance.
- c. The portable source in its new location shall meet all applicable emission limitations and visibility requirements in the Department's rules and may not violate an air quality standard.

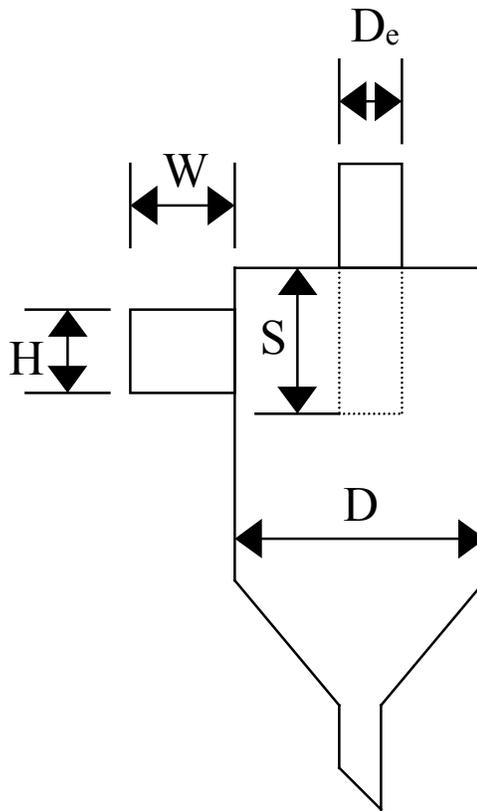
[s. 285.60(5), Wis. Stats.]

<sup>5</sup> Examples include, but are not limited to, addition or modifications of processes, adding or changing a raw material, or changes to pollution control devices, stack heights diameters, and other stack parameters, stack locations, and building heights.

<b>G. AIR POLLUTION CONTROL DEVICE EFFICIENCY</b>						
<b>Control Device</b>	<b>Control Efficiency For Total Enclosures</b>			<b>Control Efficiency For Hoods</b>		
	<b>PM</b>	<b>PM<sub>10</sub>/PHAP</b>	<b>VOC/VHAP</b>	<b>PM</b>	<b>PM<sub>10</sub>/PHAP</b>	<b>VOC/VHAP</b>
Low efficiency cyclone <sup>6</sup>	40%	20%	-	32%	16%	-
Medium efficiency cyclone <sup>6</sup>	60%	40%	-	48%	32%	-
High efficiency cyclone <sup>6</sup>	80%	60%	-	64%	48%	-
Multiple cyclone w/out flyash reinjection	80%	60%	-	64%	48%	-
Multiple cyclone with fly ash reinjection	50%	38%	-	40%	30%	-
Wet cyclone separator	50%	38%	-	40%	30%	-
Wall filter, including paint overspray filters and rotary drum filters	95%	95%	-	76%	76%	-
Fabric filter and HEPA filter, including baghouses and cartridge collectors	98%	92%	-	78%	73%	-
Spray towers	80%	80%	70%	64%	64%	56%
Venturi scrubber	90%	85%	-	72%	68%	-
Condensation scrubber (packed bed)	90%	90%	-	72%	72%	-
Impingement plate scrubber	75%	75%	-	60%	60%	-
Electrostatic precipitators	95%	95%	-	76%	76%	-
Thermal oxidizers	-	-	95%	-	-	76%
Catalytic oxidizers	-	-	95%	-	-	76%
Condenser	-	-	70%	-	-	56%
Flaring or direct combustor	-	-	98%	-	-	78%
Bio-filter	-	-	80%	-	-	64%
Adsorber (activated carbon, carbon adsorption)			85%			68%

<b>Table 3. Cyclone Efficiency</b>			
<ul style="list-style-type: none"> <li>To determine a cyclone’s efficiency level, calculate each of the “ratio dimensions” listed in the table below and determine which efficiency level (i.e, high, medium or low) it corresponds with. If one or more ratio dimensions fall into a different cyclone efficiency level then the lowest efficiency level should be used.</li> <li>See Diagram 1. below for cyclone dimension nomenclature.</li> </ul>			
<b>Ratio Dimensions</b>	<b>High Efficiency</b>	<b>Medium Efficiency</b>	<b>Low Efficiency</b>
Height of inlet, H/D	≤0.44	>0.44 and <0.8	≥0.8
Width of inlet, W/D	≤0.2	>0.2 and <0.375	≥0.375
Diameter of gas exit, D <sub>e</sub> /D	≤0.4	>0.4 and <0.75	≥0.75
Length of vortex finder, S/D	≤0.5	>0.5 and <0.875	≥0.875

<sup>6</sup> See Table 3. to determine a cyclone’s efficiency level for purposes of this permit.

**Diagram 1. Cyclone Dimension Nomenclature**

## H. ALLOWABLE NEW SOURCE PERFORMANCE STANDARDS (NSPS)

**Sources covered under this permit may not be subject to any NSPS, other than those listed below.**

1. 40 CFR part 60, subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (s. NR 440.207, Wis. Adm. Code).
2. 40 CFR part 60, subpart I - Standards of Performance for Hot Mix Asphalt Facilities (s. NR 440.25, Wis. Adm. Code).
3. 40 CFR part 60, subpart K - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After June 11, 1973 and Prior to May 19, 1978 (s. NR 440.27, Wis. Adm. Code).
4. 40 CFR part 60, subpart Ka - Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction or Modification Commenced After May 18, 1978 and Prior to July 23, 1984 (s. NR 440.28, Wis. Adm. Code).
5. 40 CFR part 60, subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Storage Vessels) for Which Construction, Reconstruction or Modification Commenced After July 23, 1984 (s. NR 440.285, Wis. Adm. Code).
6. 40 CFR part 60, subpart DD - Standards of Performance for Grain Elevators (s. NR 440.47, Wis. Adm. Code).
7. 40 CFR part 60, subpart EE - Standards of Performance for Surface Coating of Metal Furniture (s. NR 440.48, Wis. Adm. Code).
8. 40 CFR part 60, subpart SS - Standards of Performance for Industrial Surface Coating: Large Appliances (s.

## H. ALLOWABLE NEW SOURCE PERFORMANCE STANDARDS (NSPS)

### Sources covered under this permit may not be subject to any NSPS, other than those listed below.

- NR 440.57, Wis. Adm. Code).
9. 40 CFR part 60, subpart JJJ - Standards of Performance for Petroleum Dry Cleaners (s. NR 440.68, Wis. Adm. Code).
  10. 40 CFR part 60, subpart OOO - Standards of Performance for Nonmetallic Mineral Processors (s. NR 440.688, Wis. Adm. Code).
  11. 40 CFR part 60, subpart TTT - Standards of Performance for Industrial Surface Coating of Plastic Parts for Business Machines (s. NR 440.72, Wis. Adm. Code).
  12. Any New Source Performance Standard where the facility or process is only subject to recordkeeping or notification requirements of that standard.
  13. 40 CFR part 60, subpart JJJJ - Standards of Performance for spark ignition internal combustion engines – allowed only for the owner/operator of manufacturer-certified affected engines.
  14. 40 CFR part 60, subpart IIII - Standards of Performance for compression ignition internal combustion engines – allowed only for the owner/ operator of manufacturer certified affected engines that are 2007 model year or later with displacements less than 30 liters per cylinder.

## I. ALLOWABLE NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)

### Sources covered under this permit may not be subject to any NESHAP other than those listed below.

1. 40 CFR part 63, subpart N - National Emission Standards for chromium emissions from hard and decorative chromium electroplating and chromium anodizing tanks – allowed only for units that are area sources or located at area sources and which are any of the following:
  - Any decorative chromium electroplating operation or chromium anodizing operation that uses fume suppressants as an emission reduction technology.
  - Any decorative chromium electroplating operation that uses a trivalent chromium bath that incorporates a wetting agent as a bath ingredient.
2. Any New Source Performance Standard or National Emissions Standards for Hazardous Air Pollutants where the facility or process is only subject to recordkeeping or notification requirements of that standard.
3. Any National Emission Standard for Hazardous Air Pollutants for Area Sources under Section 112(d)(5)<sup>7</sup> or (r) of the Clean Air Act that does not require the source to obtain a Part 70 permit. This includes:
  - 40 CFR 63, Subpart HH – Oil and Natural Gas Production
  - 40 CFR 63, Subpart ZZZZ – Reciprocating internal Combustion Engines
  - 40 CFR 63, Subpart WWWW – Hospitals: Ethylene Oxide Sterilizers
  - 40 CFR 63, Subpart YYYYY – Electric Arc Furnace Steelmaking Facilities
  - 40 CFR 63, Subpart ZZZZZ – Iron and Steel Foundries
  - 40 CFR 63, Subpart BBBB (6B) – Gasoline Distribution Bulk Terminals, Bulk Plants and Pipeline Facilities
  - 40 CFR 63, Subpart CCCCC (6C) – Gasoline Dispensing Facilities
  - 40 CFR 63, Subpart DDDDD (6D) – Polyvinyl Chloride and Copolymers Production

<sup>7</sup> Sec. 112(d)(5) of the Clean Air Act refers to National Emissions Standards for Hazardous Air Pollutants (NESHAP) for area sources, commonly referred to as Generally Available Control Technology (GACT) standards.

## **I. ALLOWABLE NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP)**

**Sources covered under this permit may not be subject to any NESHAP other than those listed below.**

- 40 CFR 63, Subpart EEEEEEE (6E) – Primary Copper Smelting
- 40 CFR 63, Subpart FFFFFFF (6F) – Secondary Copper Smelting
- 40 CFR 63, Subpart GGGGGG (6G)– Primary Nonferrous Metals – Zinc, Cadmium and Beryllium
- 40 CFR 63, Subpart HHHHHH (6H) – Paint Stripping and Miscellaneous Surface Coating Operations
- 40 CFR 63, Subpart JJJJJJ (6J) – Industrial, Commercial and Institutional Boilers
- 40 CFR 63, Subpart LLLLLL (6L)– Acrylic/Modacrylic Fiber
- 40 CFR 63, Subpart MMMMMM (6M)– Carbon Black Production
- 40 CFR 63, Subpart NNNNNN (6N) – Chromium Compounds
- 40 CFR 63, Subpart OOOOOO (6-O)– Flexible Polyurethane Foam Production and Fabrication
- 40 CFR 63, Subpart PPPPPP (6P) – Lead Acid Battery Manufacturing
- 40 CFR 63, Subpart QQQQQQ (6Q) – Wood Preserving
- 40 CFR 63, Subpart RRRRRR (6R) – Clay Ceramics Manufacturing
- 40 CFR 63, Subpart TTTTTT (6T) – Secondary Nonferrous Metals Processing (Brass, Bronze, Magnesium and Zinc)
- 40 CFR 63, Subpart WWWWWW (6W) – Plating and Polishing Operations
- 40 CFR 63, Subpart XXXXXX (6X) – Metal Fabrication and Finishing Source Nine Categories
- 40 CFR 63, Subpart YYYYYY (6Y) – Ferroalloys Production
- 40 CFR 63, Subpart ZZZZZZ (6Z) – Nonferrous Foundries: Aluminum, Copper and Other
- 40 CFR 63, Subpart BBBBBBB (7B)– Chemical Preparations Industry
- 40 CFR 63, Subpart EEEEEEE (7E) – Gold Mine Ore Processing and Production

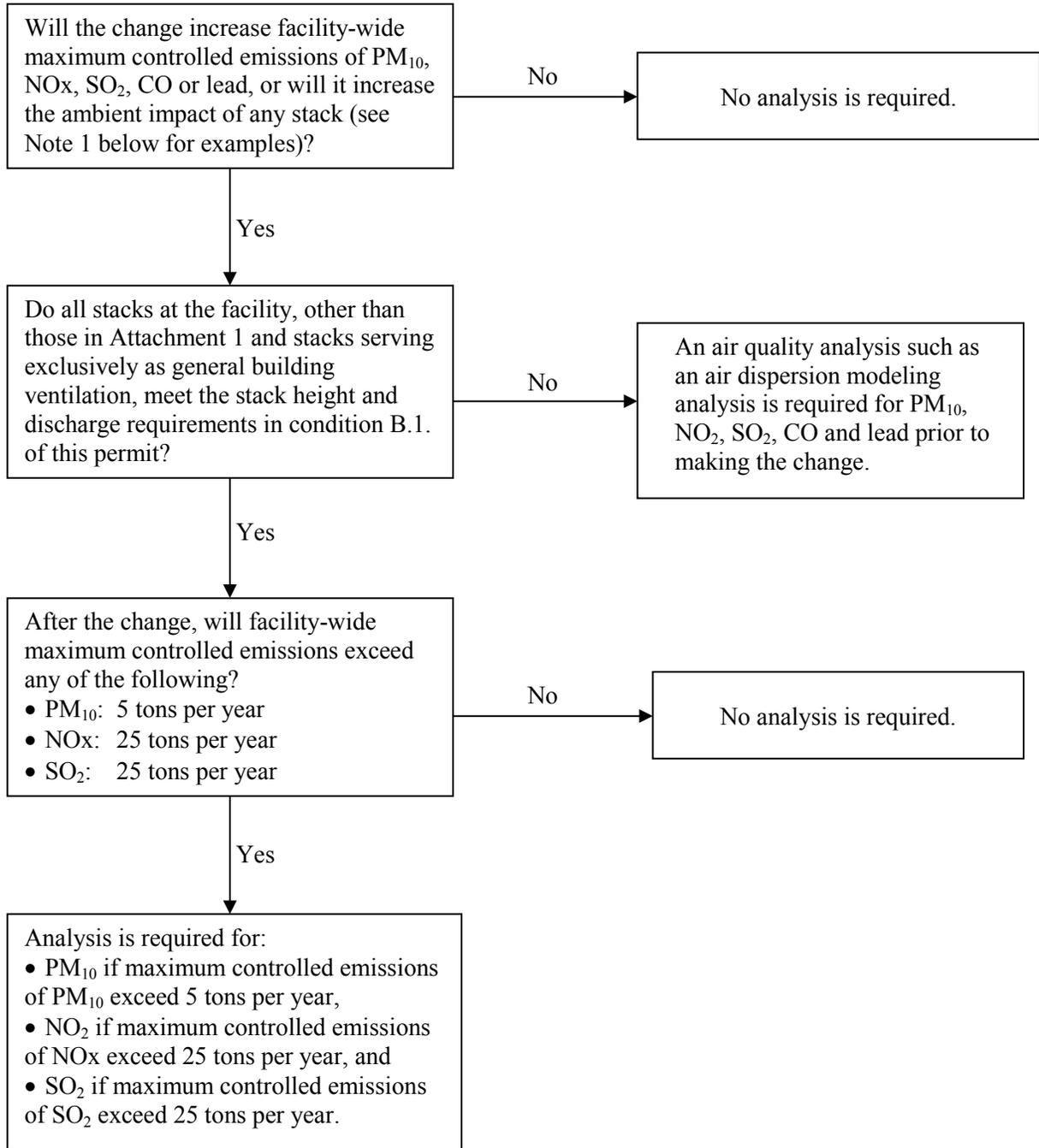
## **J. CONSTRUCTION OR MODIFICATION UNDER THIS REGISTRATION OPERATION PERMIT**

**1.** No construction permit is required prior to commencing construction, reconstruction, replacement, relocation or modification of a stationary source if the facility is covered under this registration operation permit and the construction, reconstruction, replacement, relocation or modification will not result in the facility violating any term or condition of this registration operation permit. [s. NR 407.105(5)(a), Wis. Adm. Code]

**ATTACHMENT 1**  
**EMISSION UNITS NOT SUBJECT TO CERTAIN**  
**REGISTRATION PERMIT REQUIREMENTS**

1. Convenience space heating units with heat input capacity of less than 5 million Btu per hour that burn gaseous fuels, liquid fuels or wood.
2. Convenience water heating.
3. Maintenance of grounds, equipment and buildings, including lawn care, pest control, grinding, cutting, welding, painting, woodworking, general repairs and cleaning, but not including use of organic compounds as clean-up solvents.
4. Boiler, turbine, generator, heating and air conditioning maintenance.
5. Pollution control equipment maintenance.
6. Internal combustion engines used for warehousing and material transport, forklifts and courier vehicles, front end loaders, graders and trucks, carts and maintenance trucks.
7. Fire control equipment.
8. Janitorial activities.
9. Office activities.
10. Fuel oil storage tanks with a capacity of 10,000 gallons or less.
11. Stockpiled contaminated soils.
12. Demineralization and oxygen scavenging of water for boilers.
13. Purging of natural gas lines.
14. Any emission unit, operation, or activity that has, for each air contaminant, maximum controlled emissions that are less than the level specified in Table 3 of ch. NR 407, Wis. Adm. Code. Multiple emissions units, operations, or activities that perform identical or similar functions shall be combined for the purposes of this determination.
15. If the maximum controlled emissions of any air contaminants listed in Table 3 of ch. NR 407, Wis. Adm. Code, from all emission units, operations or activities at a facility are less than 5 times the level specified in Table 3 of ch. NR 407, Wis. Adm. Code, for those air contaminants, any emission unit operation or activity that emits only those air contaminants.

**ATTACHMENT 2  
FLOW CHART TO DETERMINE WHEN AN AIR QUALITY ANALYSIS IS  
REQUIRED WHEN MAKING CHANGES AT A FACILITY**



Note 1: Examples of changes that increase the ambient impact of a stack include but are not limited to decreasing the stack height, increasing the stack diameter, installing a rainhat or other stack obstruction, and changing the discharge direction (e.g., vertical to horizontal/downward or horizontal to downward).

## **ATTACHMENT 3**

### **EMISSION CALCULATION METHODOLOGY**

#### **Calculation of Emissions.**

The permittee shall calculate the monthly and consecutive 12-month emissions for each emissions unit at the facility other than those emission units listed in Attachment 1, and the total for the entire facility. Similar emissions units may be aggregated for emission calculation purposes. Fugitive dust emissions must be included in the emission calculations only if the stationary source is in a category listed in s. NR 407.02(4)(b), Wis. Adm. Code.

In the first month after coverage under this permit, the consecutive 12-month emissions shall be the emissions for that first month. After the second month, the consecutive 12-month emissions shall be the sum of the emissions for the previous two months. After the third month, the consecutive 12-month emissions shall be the sum of the emissions for the previous three months. This procedure shall be followed through the 12<sup>th</sup> month. From the 13<sup>th</sup> month and beyond, the consecutive 12-month emissions shall be the total emissions from the previous 12 consecutive months.

#### **Hierarchy of Emission Calculation Methods:**

Emissions shall be calculated according to the following hierarchy: The permittee shall calculate emissions using Method A, if that data is available. If Method A is not available, the permittee shall calculate emissions using Method B, if that data is available. If Methods A and B are not available, the permittee shall calculate emissions as follows:

- For VOC and hazardous air pollutants emitted as a vapor (VHAP), Method C shall be used,
- For SO<sub>2</sub>, Method D or E shall be used,
- For PM, PM<sub>10</sub>, NO<sub>x</sub>, CO, lead, and hazardous air pollutants emitted as a particulate (PHAP), Method D shall be used.

To prevent double counting of emissions, the permittee must use one calculation method for each pollutant emitted from each emissions unit at the facility.

#### **Calculation Methods:**

##### **Method A**

Emissions data collected through use of a continuous emission monitor (CEM) that complies with 1. to 3. below:

1. The CEM has been certified by the Department;
2. The CEM data have not been rejected by the Department or EPA due to failure by the owner or operator to comply with all requirements of s. NR 439.09(6), Wis. Adm. Code, all applicable permit conditions, and any other applicable state or federal laws pertaining to CEM operation;
3. The permittee maintains records that include an explanation of how the emissions were calculated based on the CEM data. In calculating actual emissions, the permittee must use the rated capacity of the flow unless the CEM provides actual data on the flow rate. For periods when the CEM is down and the emission unit is operating, the CEM data shall be substituted with emission data calculated using data obtained from the CEM. The CEM must have recorded data for at least 90 percent of the hours the emission unit was operated for the calendar year. The substitute CEM data must be representative of emission unit operation and, if applicable, of the control equipment operation during the period of CEM downtime. If substitute CEM data meeting these conditions is not available, emissions during periods of CEM downtime shall be calculated using performance test data as specified in Method B, or if that information is unavailable, emission factors as specified in Method D or E.

## ATTACHMENT 3 EMISSION CALCULATION METHODOLOGY

### Method B

Emission factors from performance tests may be used for the calculation of emissions, provided that:

1. The emissions unit is either an uncontrolled unit (for the tested pollutant) or is equipped with air pollution control equipment that meets the compliance demonstration, monitoring and recordkeeping requirements in conditions D.3., E.6., E.7. and E.8.;
2. The performance tests met all the requirements of ss. NR 439.06 and NR 439.07, Wis. Adm. Code, and all other applicable state rules and federal regulations governing performance tests, and have been deemed to be valid tests by the Department; and
3. The permittee that uses an emission factor developed from a performance test shall use that emission factor in conjunction with calculation Method D.

### Method C

A material balance method may be used to calculate emissions of VOC emissions and hazardous air pollutants emitted as a vapor (VHAP). The owner or operator of a stationary source that uses material balance to calculate emissions shall determine emissions (E) using the equation below.

$$E = (a - b - c) \times (1 - CE)$$

Where,

*E* = Actual emissions of VOC/VHAP;

*a* = The amount of VOC/VHAP entering the process;

*b* = The amount of VOC/VHAP incorporated permanently into the product. This includes VOC/VHAP chemically transformed in production. It does not include latent VOC/VHAP remaining in the product that will at some time be released to the atmosphere. An explanation of this calculation must also be maintained at the facility;

*c* = the amount of VOC/VHAP, if any, leaving the process as waste and properly disposed of on-site or off-site or recycled, or otherwise not incorporated into the product and not emitted to the air; and

*CE* = Control efficiency (percent expressed as a decimal fraction of 1.00) determined according to section G. of this permit, from a department approved stack test performed within the last 5 years, or where specifically required in an applicable air pollution requirement.

### Method D

Calculations of emissions may be based on the facility's actual operating parameters, and use the following equation:

$$E = OP \times EF_U \times (1 - CE)$$

Where,

*E* = Actual emissions in pounds per month;

*OP* = Operating parameter as required by the uncontrolled emission factor (hours of operation or units produced);

*EF<sub>U</sub>* = Uncontrolled emission factor (pounds of pollutant per hour of operation or units produced) as defined below; and

*CE* = Control efficiency (percent expressed as a decimal fraction of 1.00) determined according to section G. of this permit, from a department approved stack test performed within the last 5 years, or where specifically required in an applicable air pollution requirement.

“Emission Factor” means the most accurate and representative emission data available from one of the following sources:

## ATTACHMENT 3 EMISSION CALCULATION METHODOLOGY

1. The Compilation of Air Pollutant Emission Factors (AP-42), Volume I, Fifth Edition, United States Environmental Protection Agency, available at the EPA Internet site <http://www.epa.gov/ttn/chief/ap32/>. Where more than one emission factor is listed in AP-42, the permittee shall use best engineering judgment as described in 4. below, to determine the most appropriate factor to use.
2. The WebFIRE online database, United States Environmental Protection Agency, available at the EPA Internet site <http://cfpub.epa.gov/webfire/>. Where more than one emission factor is listed in AP-42, the permittee shall use best engineering judgment as described in 4. below, to determine the most appropriate factor to use.
3. An emission factor developed or approved by the Department and derived from the following sources:
  - Other EPA publications including, but not limited to, Locating and Estimating documents, Control Technology Center documents, the preamble and background information documents for New Source Performance Standards or National Emission Standards for Hazardous Air Pollutants;
  - Other EPA databases and computer programs;
  - Engineering publications;
  - Performance test data from the same or a similar emission unit at the same or a similar facility;
  - Manufacturer's performance tests;
  - Emission data developed by the permittee using the best engineering judgment criteria listed in 4., below; or
  - The General Reporting Protocol for the voluntary reporting program of the Climate Registry.
4. An emission factor developed or approved by the Department using best engineering judgment and based on one or more of the following considerations:
  - The precision and accuracy of the data;
  - The design and operational similarity between the emission units tested and the emission units to which the emission factor is to be applied;
  - The number of emission units tested in developing the emission factor under consideration;
  - The availability of emission data of equal or greater quality;
  - The emission unit operating conditions under which the tests were conducted; and
  - The data analysis procedures.

### Method E

Emissions of sulfur dioxide may be calculated by measuring the sulfur content of the fuel and assuming that all of the sulfur in the fuel is oxidized to sulfur dioxide. The sulfur content of each batch of fuel received must be measured by an independent laboratory using ASTM methods or verified by vendor certification. The sulfur dioxide actual emissions shall be determined for each batch of fuel received by using the following equation:

$$SO_2 = (\%S / 100) \times (F / 2,000) \times 2$$

Where,

$SO_2$  = Sulfur dioxide emissions from a batch of fuel in tons;

$\%S$  = Weight percent sulfur in the fuel being burned;

$F$  = Amount of fuel burned by weight in pounds;

2,000 = Pounds per ton; and

2 =  $64/32$  = Pounds of sulfur dioxide per pound of sulfur in one pound-mole.

The total sulfur dioxide emissions for the year shall be the sum total of the individual batch totals.