



# Registration Permit Contents, Glossary of Terms, and Other Useful Information

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

**Annual maximum controlled emissions of particulate matter** - For the purposes of this permit, the annual maximum controlled emissions of particulate matter are the maximum hourly emissions of particulate matter calculated using the control efficiencies listed in this permit, if control equipment is used, multiplied by 8760 hours per year for all emissions sources (except emission units listed in Attachment 2 of this permit) emitting particulate matter at the facility. If the 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 annual actual emissions** – For the purposes of this permit, facility-wide annual actual emissions are the total emissions generated by all emission sources (except emission units listed in Attachment 2 of this permit) at the facility over the calendar year 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.

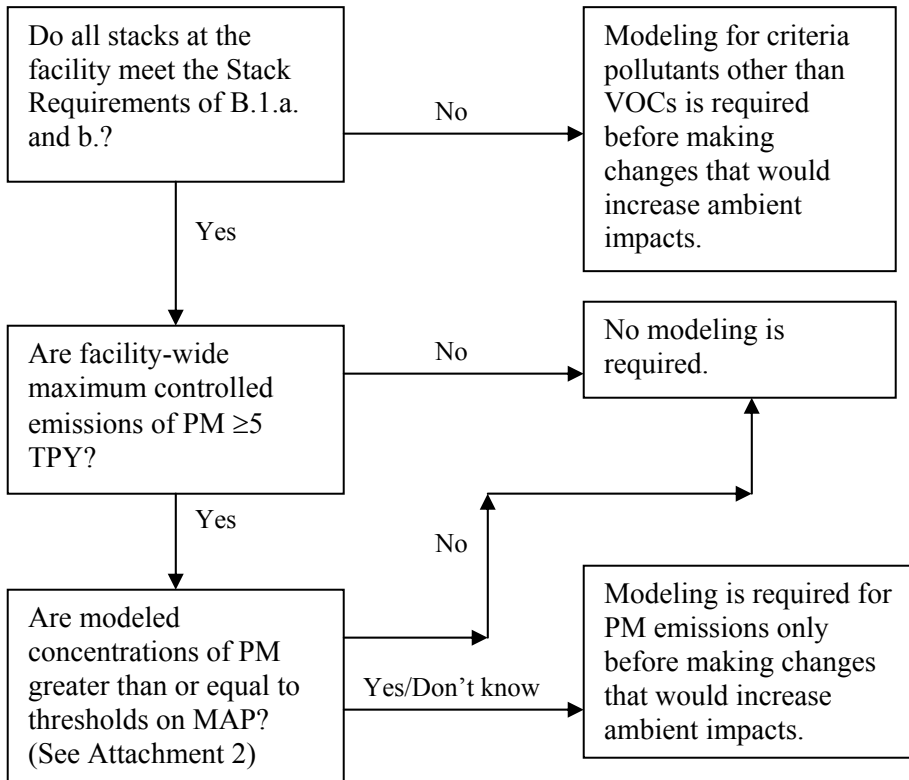
**Hazardous air pollutants or contaminants** are those regulated by s. 112(b) of the Clean Air Act and ch. NR 445, Wis. Adm. Code. Hazardous air contaminants regulated by the Clean Air Act are listed in Attachment 1 of this permit.

**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 above. 2. More than 5% of the total volume is composed of any combination of the compounds listed in group A above. 3. More than 8% of the total volume is composed of any combination of the compounds listed in group B above.

**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.

**Flow Chart for Determining Whether Modeling is Required under Section B.3 and 4. of the ROP**



**Abbreviations**

- BACT – Best Available Control Technology
- 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 particle
- PM – Particulate Matter
- PM10 – Particulate Matter less than 10 microns in diameter
- ROP – Registration Operation Permit
- RCP – Registration Construction Permit
- 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 following emission limitations in A.1. and A.2.:**

**1. Facility-Wide Annual Actual Emission Limits:**

The annual actual emissions of particulate matter, 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, emitted from the facility may not exceed 25% of any major source threshold set forth in s. NR 407.02(4), Wis. Adm. Code, on a calendar year basis. Annual actual emissions of lead from the facility may not exceed 0.5 tons per year on a calendar year basis. See the note and Table 1 below for the annual actual emission limits in tons per year calculated based on 25% of the major source thresholds. [s. 285.65(7) and (14), Wis. Stats., and s. NR 407.105(2)(a)1., Wis. Adm. Code]

Note: Major source thresholds vary according to the attainment status of the area in which the facility is located. Therefore, if there is a change in the attainment status of the area where the facility is located for any pollutant, then the annual actual facility-wide emission limits will also change to 25% of the new major source threshold for that pollutant. Table 1 is for informational purposes only. The ton per year numbers will change if there is a change in the definition of major source or if new nonattainment areas are created or if the attainment designations change. These thresholds were current as of April 10, 2009.

**Table 1 Emission Limits in Tons Per Year**

Pollutant	Emission Limits
Particulate Matter Emissions	<ul style="list-style-type: none"> <li>• 25 ton/year for particulate matter attainment areas</li> <li>• 17.5 ton/year for serious PM<sub>10</sub> nonattainment areas</li> </ul>
Volatile Organic Compounds (VOCs)	<ul style="list-style-type: none"> <li>• 25 ton/year for ozone attainment and basic, marginal or moderate ozone nonattainment areas</li> <li>• 12.5 ton/year for serious ozone nonattainment or areas within ozone transport regions except for any severe or extreme nonattainment area for ozone</li> <li>• 6.25 ton/year for severe ozone nonattainment areas</li> </ul>
Nitrogen Oxides	<ul style="list-style-type: none"> <li>• 25 ton/year for ozone attainment and basic, marginal or moderate ozone nonattainment areas</li> <li>• 12.5 ton/year for serious ozone nonattainment or areas within ozone transport regions except for any severe or extreme nonattainment area for ozone</li> <li>• 6.25 ton/year for severe ozone nonattainment areas</li> </ul>
Sulfur Dioxide	<ul style="list-style-type: none"> <li>• 25 ton/year</li> <li>•</li> </ul>
Carbon Monoxide	<ul style="list-style-type: none"> <li>• 25 ton/year for attainment and moderate 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>• 2.5 ton/year for any <i>single</i> pollutant</li> <li>• 6.25 ton/year for a <i>combination</i> of all pollutants</li> </ul>

## A. EMISSION LIMITATIONS

### 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, and all 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.]

### **Facilities that emit organic compounds *may* need to meet the following requirements.**

### 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. above, apply latest available control techniques and operating practices demonstrating best current technology (LACT) for the process line as described in A.4 through 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 in s. NR 422.03, Wis. Adm. Code, the owner or operator may elect to meet the emission limitations in ss. NR 422.05 to 422.155 for the process line instead of meeting a. or b., above 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

**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.]

<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 having to meet the facility-wide VOC limits in condition A.1.

<sup>2</sup> Geographic location or emission rates are not considered in determining 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

### 5. Coating Process Line LACT:

**a.** In addition to complying with A.4., LACT for a coating process line has been determined to be use of high transfer application techniques including: electrostatic spray, dip 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 5.a. above 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<sup>3</sup> of the following parameters:

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

<sup>3</sup> The levels determined in this condition must follow the requirements as described in s. NR 439.055(3), Wis. Adm. Code. In this context, the optimum levels and most efficient burner operation is intended to provide a combustion environment which reduces or minimizes the emissions of organic compounds (i.e. products of incomplete combustion). Carbon monoxide (CO) and oxygen (O<sub>2</sub>) measurements provided a surrogate for the emissions of organic compounds. Reductions of the CO concentration without excessive oxygen dilution (minimum CO emissions) usually corresponds to efficient fuel utilization and a reduction in the emissions of organic compounds.

## **B. STACK AND MODELING REQUIREMENTS**

### **1. Stack Requirements for stacks emitting particulate matter sulfur dioxide, nitrogen oxides, carbon monoxide, and lead:<sup>4</sup>:**

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

- a.** Stack vented emissions from a facility covered by this permit shall be exhausted from unobstructed discharge points that are within 10 degrees of vertical. [s. NR 407.105(2)(a)2, Wis. Adm. Code.]
- b.** Stacks at a facility covered by this permit 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 requirements of B.1. the owner or operator may instead demonstrate through air dispersion modeling that emissions from all of the facility's stacks, except those stacks serving emissions units listed in Attachment 1, and stacks serving exclusively as general building ventilation, do not and will not cause or exacerbate a violation of an air quality standard for the following air contaminants emitted by the facility: particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide and lead. [s. NR 407.105(2)(a)4, Wis. Adm. Code.]

### **The modeling requirements in B. 3. and B.4. only apply when making changes at your facility after your facility is covered under this ROP.**

### **3. Modeling requirements for changes at facilities that meet the stack requirements in B.1.:**

- a.** Except as provided in B.3.b., the owner or operator shall demonstrate through an air dispersion modeling analysis that the facility's emissions will not cause or exacerbate a violation of the particulate matter standard prior to making any of the following changes at the facility:
  - (1)** Adding a new stack or emissions unit that will emit particulate matter.
  - (2)** Making physical changes to an existing stack that would allow for an increase in the ambient impact of particulate matter.
  - (3)** Making operational changes that would increase the maximum controlled emission rate of particulate matter.
- b.** Modeling is not required prior to making a change under B.3.a., if either of the following conditions are met:
  - (1)** The facility-wide maximum controlled emissions of particulate matter will be less than 5 tons per year.
  - (2)** Previous modeling showed ambient air concentrations of particulate matter at levels that were lower than the modeling thresholds in Attachment 2.

<sup>4</sup> The stack and modeling requirements for hazardous air contaminants are contained 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 MODELING REQUIREMENTS

### Notes:

- The modeling thresholds on the map in Attachment 2 may be updated in the future. Updates to the modeling threshold map will be posted at <http://dnr.wi.gov/air/permits/streamlining/regpermits.html>
- Stacks venting emission units listed in Attachment 1 and stacks that serve exclusively as general building ventilation need not be included in any required modeling analyses.

### 4. Modeling requirements for changes at facilities that conducted air dispersion modeling, as required in B.2.:

- a.** Prior to making a change described under B.4.b., the owner or operator shall demonstrate through 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: particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, and lead.
- b.** Modeling is required prior to making any of the following changes at the facility:
- (1) Adding a new stack or emissions unit that will emit one of the listed pollutants.
  - (2) Making physical changes to an existing stack that would allow for an increase in the ambient impact of one of the listed pollutants.
  - (3) Making operational changes that would increase the maximum controlled emission rate of one of the listed pollutants.

Note: Stacks venting emission units listed in Attachment 1 and stacks that serve exclusively as general building ventilation need not be included in any required modeling analyses.

## 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 that 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, demonstrated as required in condition B.3 and B.4. [s. NR 407.105(3)(c), Wis. Adm. Code.]
- 3.** Except as allowed in section H. of this permit, the owner or operator may not add or change emission 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 to a MACT standard under s. 112 of the Act.<sup>5</sup> [s. NR 407.105(3)(d), 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.]

<sup>5</sup>Standards under s. 112 that require control to a level considered Generally Available Control Technology (GACT) are allowed under the permit. See Section H.



## D. COMPLIANCE DEMONSTRATION REQUIREMENTS

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

#### 1. Facility-wide Annual Actual Emission Calculations:

By March 1<sup>st</sup> of each year, the owner or operator shall calculate the facility-wide annual actual emissions of particulate matter, 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 calendar year. Emissions shall be calculated as follows:

- a. All emissions from the facility shall be included in the calculation except emissions from emissions units listed in Attachment 1.
- b. If the facility uses a control device to reduce emissions, the control efficiencies listed in Section G of this permit shall be used to calculate annual actual 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 annual actual emissions. Where the control efficiencies listed in the permit and the specific control efficiencies required in an applicable requirement differ, the higher control efficiency may be used to calculate annual actual emissions.
- c. 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 annual actual emissions as long as such reductions are quantifiable<sup>6</sup>.
- d. Facility-wide annual actual emissions shall be calculated using the actual operating schedule, actual amounts of raw materials used or products produced, or actual amounts of fuels burned during the calendar year. [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, and all 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.]

### Facilities that need to use a control device to meet any applicable emission limit must meet the following compliance demonstration requirements

3. If the owner or operator must use a control device to meet the facility-wide annual actual emissions limit in A.1., 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 for the device or the specific control efficiency required in the 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 the applicable emission limitation. [s. NR 407.105(1)(c), Wis. Adm. Code.]

<sup>6</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.

## **E. RECORDKEEPING AND MONITORING REQUIREMENTS**

### **All facilities must follow the requirements in E.1. through E.3.**

#### **1. Records to Calculate Annual Actual Emissions:**

The owner or operator shall maintain records sufficient to calculate facility-wide annual actual emissions for the previous calendar year as required in Condition D.1. [ss. NR 407.105(1)(c) and 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., and chs. NR 400 to NR 499, Wis. Adm. Code, and 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.]

#### **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. Modeling Records:**

If the owner or operator demonstrated eligibility for this permit through an air quality modeling analysis or if the owner or operator subsequently performed an air quality modeling analysis as required 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 the modeling analyses and the output files sufficient to show the results of all required modeling analyses. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code.]
- b.** If required to model under Section B.3. or 4. of this permit, the owner or operator shall 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.]

#### **5. Records Retention:**

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.]

### **The monitoring and recordkeeping requirements below apply to facilities that must use a control device in order to meet any limit in this permit.**

#### **6. Air Pollution Control Device Monitoring:**

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 are contained in E.8. of this permit. If a control device is not listed in E.8. of this permit, the owner or operator shall monitor the device as recommended by the control device manufacturer or based on good engineering practice. [ss. 285.65(3), Wis. Stats and NR 406.17(1)(c) and NR 439.055, Wis. Adm. Code]

**E. RECORDKEEPING AND MONITORING REQUIREMENTS**

**7. Air Pollution Control Device Operational Parameter Ranges:**

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 good engineering practice as established by operational history. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code.]

**8. Air Pollution Control Device Monitoring Records:**

For each control device used to meet any applicable emission limit, the owner or operator shall monitor and record the appropriate control device parameters at the frequency specified in s. NR 439.055(2), Wis. Adm. Code. If the facility operates a type of control device that is not listed below, 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. [ss. NR 407.105(1)(c) and NR 439.04(1)(d), Wis. Adm. Code.]

**Table 2. Control Device Parameters**

<b>If you operate this control device:</b>	<b>You must monitor this parameter:</b>
Centrifugal Collector (cyclone)	Pressure drop
Multiple cyclone w/out flyash reinjection	Pressure drop
Multiple cyclone with flyash reinjection	Pressure drop
Wet cyclone separator	Pressure drop and water flow rate
Wall filters (including paint overspray filters and rotary drum filters)	Pressure drop  <b>OR</b> Condition of filter including alignment, saturation and tears/holes
Fabric filters and HEPA filters (e.g., baghouse, cartridge collectors)	Pressure drop
Spray towers	Pressure drop and water flow rate
Venturi scrubber	Pressure drop and scrubber liquor flow rate
Condensation scrubber (packed bed)	Pressure drop and scrubber liquor flow rate
Impingement plate scrubber	Pressure drop and scrubber liquor flow rate
Electrostatic precipitators	Primary and secondary voltage, in volts; primary and secondary current, in amps; and sparking rate, in sparks per minute
Thermal oxidizers	Temperature in the combustion chamber
Catalytic oxidizers	Temperature in the inlet to the catalytic bed; and Catalyst bed reactivity
Condenser	Condenser outlet gas temperature
Flaring or direct combustor	Temperature indicating presence of flame
Biofilter	Bed temperature, moisture content
Carbon Adsorption	Pressure drop, VOC concentration at outlet

## F. REPORTING AND NOTIFICATION REQUIREMENTS

**All facilities covered by this permit must meet the reporting and notification requirements in F.1 and F.2.**

### 1. Annual Summary of Monitoring, and Certification of Compliance

By **March 1** of each year after the first full year of coverage, 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 St, PO Box 7921, Madison, WI 53707.

- a. The report submission under this condition shall meet the requirements of s. NR 439.03(1)(b) and (c), Wis. Adm. Code.:
- b. The report shall be certified by a responsible official as to the truth, accuracy and completeness of the report.
- 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), and NR 439.03(1)(b) and (c), Wis. Adm. Code.]

### 2. Air Emission Inventory Report:

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 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.]

**Additional reporting for facilities that changed ownership or did air quality modeling prior to making changes during the past 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 model under B.3. or 4. of this permit:

If required to model 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. the following information associated with operational changes at the facility:

- a. A brief description of the change which caused the need to perform modeling under B.3. or B.4.<sup>7</sup>
- b. The results of air quality modeling required under B.3. or B.4. 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.]

Note:

- This requirement does not apply to changes at emission units that emit exclusively volatile organic compounds, to emissions units listed in Attachment 1 or to stacks serving exclusively as general building ventilation.

<sup>7</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.

**F. REPORTING AND NOTIFICATION REQUIREMENTS**

**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 follows *before* making these changes:**

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

If the owner or operator plans to make a change at the facility that will result in the facility no longer being eligible for this permit:

- a.** Before making the change, the owner or operator shall submit to the Department an application for a construction permit, unless the change is exempt under ch. NR 405, 406 and 408.
- b.** Before making the change, the owner or operator shall request in writing that coverage under this registration permit be revoked upon issuance of any required air permit, and submit to the Department an application for a different type of permit if required.
- c.** The owner or operator may not make the change until any required air pollution control construction and/or operation permit(s) are obtained.

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

**Additional reporting requirements for 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.]

## G. AIR POLLUTION CONTROL DEVICE REQUIREMENTS

**Table 3. Air Pollution Control Device Efficiencies**

Control Device	Control Efficiency (Total Enclosure) <sup>8</sup>			Control Efficiency (Hood)		
	PM	PM <sub>10</sub> and PHAP	VOC and VHAP	PM	PM <sub>10</sub> and PHAP	VOC and VHAP
Low efficiency cyclone <sup>9</sup>	40%	20%	-	32%	16%	-
Medium efficiency cyclone <sup>9</sup>	60%	40%	-	48%	32%	-
High efficiency cyclone <sup>9</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 filters (including paint overspray filters and rotary drum filters)	95%	95%	-	76%	76%	-
Fabric filters and HEPA (e.g., baghouse, 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%
Biofilter	-	-	80%	-	-	64%
Adsorber (activated carbon systems, carbon adsorption, solvent recovery)	-	-	85%	-	-	68%

**Table 4. Cyclone Efficiency Table**

(see Diagram 1. on next page for cyclone dimension nomenclature)

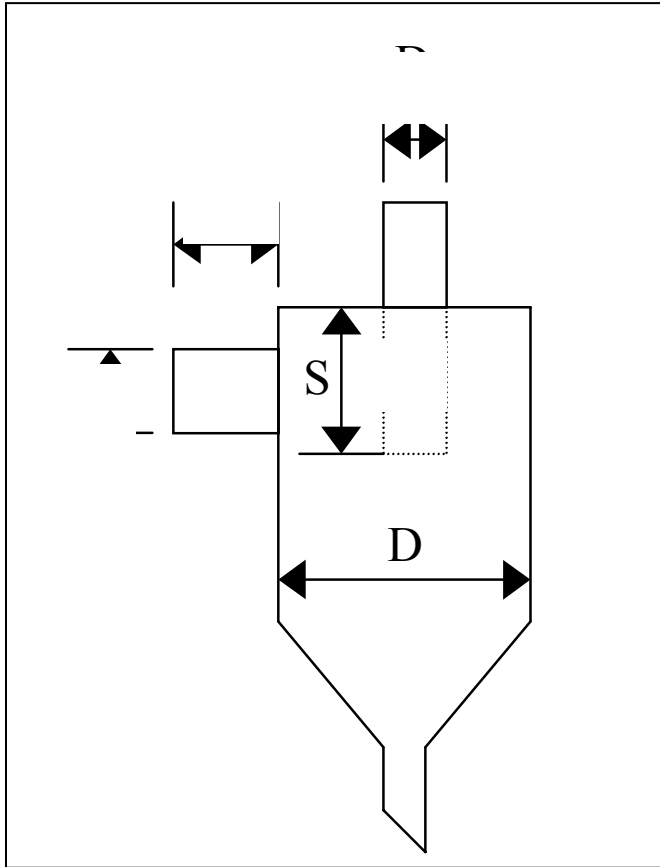
Ratio Dimensions	High Efficiency	Medium Efficiency	Low Efficiency
Height of inlet, H/D	≤0.44	>0.44 and <0.8	≥0.8
Width of inlet, W/D	≤0.2	>0.2 and <0.375	≥0.375
Diameter of gas exit, D <sub>e</sub> /D	≤0.4	>0.4 and <0.75	≥0.75
Length of vortex finder, S/D	≤0.5	>0.5 and <0.875	≥0.875

If one or more of the "ratio dimensions," as listed in Table 4, are in a different efficiency category (high, medium, low), then the lowest efficiency category shall be applied.

<sup>8</sup> VHAP = Volatile hazardous air pollutant, PHAP = Particulate hazardous air pollutant.

<sup>9</sup> See Table 4, below, to identify level of efficiency for cyclones.

**Diagram 1. Cyclone Dimension Nomenclature**



## **H. ALLOWABLE NEW SOURCE PERFORMANCE STANDARDS and NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS**

1. Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (s. NR 440.207, Wis. Adm. Code).
2. Standards of Performance for Hot Mix Asphalt Facilities (s. NR 440.25, Wis. Adm. Code).
3. 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. 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. 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. Standards of Performance for Grain Elevators (s. NR 440.47, Wis. Adm. Code).
7. Standards of Performance for Surface Coating of Metal Furniture (s. NR 440.48, Wis. Adm. Code).
8. Standards of Performance for Industrial Surface Coating: Large Appliances (s. NR 440.57, Wis. Adm. Code).
9. Standards of Performance for Petroleum Dry Cleaners (s. NR 440.68, Wis. Adm. Code).
10. Standards of Performance for Nonmetallic Mineral Processors (s. NR 440.688, Wis. Adm. Code).
11. 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 or National Emission Standards for Hazardous Air Pollutants (also known as Maximum Achievable Control Technology (MACT) Standard), where the facility or process is only subject to recordkeeping or notification requirements of that standard. [s. 285.65(3), Stats.]
13. National Emission Standards for Hazardous Air Pollutants for Area Sources controlled to a level considered to be Generally Available Control Technology Standards or GACT in 40 CFR Part 63. The following list is updated as EPA finalizes the standards:
  - Oil and Natural Gas Production - Subpart HH - National Emission Standards for Oil & Natural Gas Production
  - Stationary Internal Combustion Engines - Subpart ZZZZ - National Emission Standards for Reciprocating Internal Combustion Engines



## **H. ALLOWABLE NEW SOURCE PERFORMANCE STANDARDS and NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS**

- Hospital Sterilizers - Subpart WWWW—National Emission Standards for Hospital Ethylene Oxide Sterilization
- Gasoline Distribution Stage I - Subpart BBBB—National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Distribution Bulk Terminals, Bulk Plants, Pipeline Facilities, and Gasoline Dispensing Facilities
- Primary Nonferrous Metal Production – Zinc, Cadmium, and Beryllium - Subpart GGGGG - National Emission Standards for Hazardous Air Pollutants for Area Sources: Primary Nonferrous Metals: Zinc, Cadmium, and Beryllium
- Primary Copper Smelting - Subpart EEEEE - National Emission Standards for Hazardous Air Pollutants for Area Sources: Primary Copper Smelting,
- Polyvinyl Chloride and Copolymers Production - Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Area Sources: Polyvinyl Chloride and Copolymers Production,
- Secondary Copper Smelting Subpart FFFFF - National Emission Standards for Hazardous Air Pollutants for Area Sources: Secondary Copper Smelting
- Carbon Black Production - Subpart MMMMM—National Emission Standards for Hazardous Air Pollutants for Carbon Black Production Area Sources
- Acrylic Fibers/Modacrylic Fibers Production - Subpart LLLLL—National Emission Standards for Hazardous Air Pollutants for Acrylic and Modacrylic Fibers Production Area Sources
- Flexible Polyurethane Foam Production - Subpart OOOOO—National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources
- Lead Acid Battery Manufacturing - Subpart PPPPP—National Emission Standards for Hazardous Air Pollutants for Lead Acid Battery Manufacturing Area Sources
- Wood Preserving - Subpart QQQQQ—National Emission Standards for Hazardous Air Pollutants for Wood Preserving Area Sources
- Chemical Manufacturing: Chromium Compounds - Subpart NNNNN—National Emission Standards for Hazardous Air Pollutants for Chemical Manufacturing Area Sources: Chromium Compounds
- Flexible Polyurethane Foam Fabrication Operations - Subpart OOOOO—National Emission Standards for Hazardous Air Pollutants for Flexible Polyurethane Foam Production and Fabrication Area Sources

## **H. ALLOWABLE NEW SOURCE PERFORMANCE STANDARDS and NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS**

- Paint Stripping Operations and Miscellaneous Surface Coating Operations - Subpart HHHHHH - National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources
- Auto Body Refinishing - Subpart HHHHHH - National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources
- Clay Ceramics Manufacturing - Subpart RRRRRR—National Emission Standards for Hazardous Air Pollutants for Clay Ceramics Manufacturing Area Sources
- Iron Foundries - Subpart ZZZZZ—National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources
- Plastic Parts and Products (Surface Coating) - Subpart HHHHHH - National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources
- Pressed and Blown Glass Manufacturing - Subpart SSSSS—National Emission Standards for Hazardous Air Pollutants for Glass Manufacturing Area Sources
- Secondary Nonferrous Metals - Subpart TTTTTT—National Emission Standards for Hazardous Air Pollutants for Secondary Nonferrous Metals Processing Area Sources
- Steel Foundries - Subpart ZZZZZ—National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources
- Plating and Polishing Operations – Subpart WWWWWW - National Emission Standards for Hazardous Air Pollutants Area Source Standards for Plating and Polishing Operations
- Nine Metal Fabrication and Finishing Source Categories – Subpart XXXXXX - National Emission Standards for Hazardous Air Pollutants: Area Source Standards for Nine Metal Fabrication and Finishing Source Categories including
  - Electrical and Electronic Equipment Finishing Operations
  - Fabricated Metal Products
  - Fabricated Plate Work (Boiler Shops)
  - Fabricated Structural Metal Manufacturing
  - Heating Equipment, except Electric
  - Industrial Machinery and Equipment Finishing Operations
  - Iron and Steel Forging
  - Primary Metal Products Manufacturing; and
  - Valves and Pipe Fittings.

**H. ALLOWABLE NEW SOURCE PERFORMANCE STANDARDS and NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS**

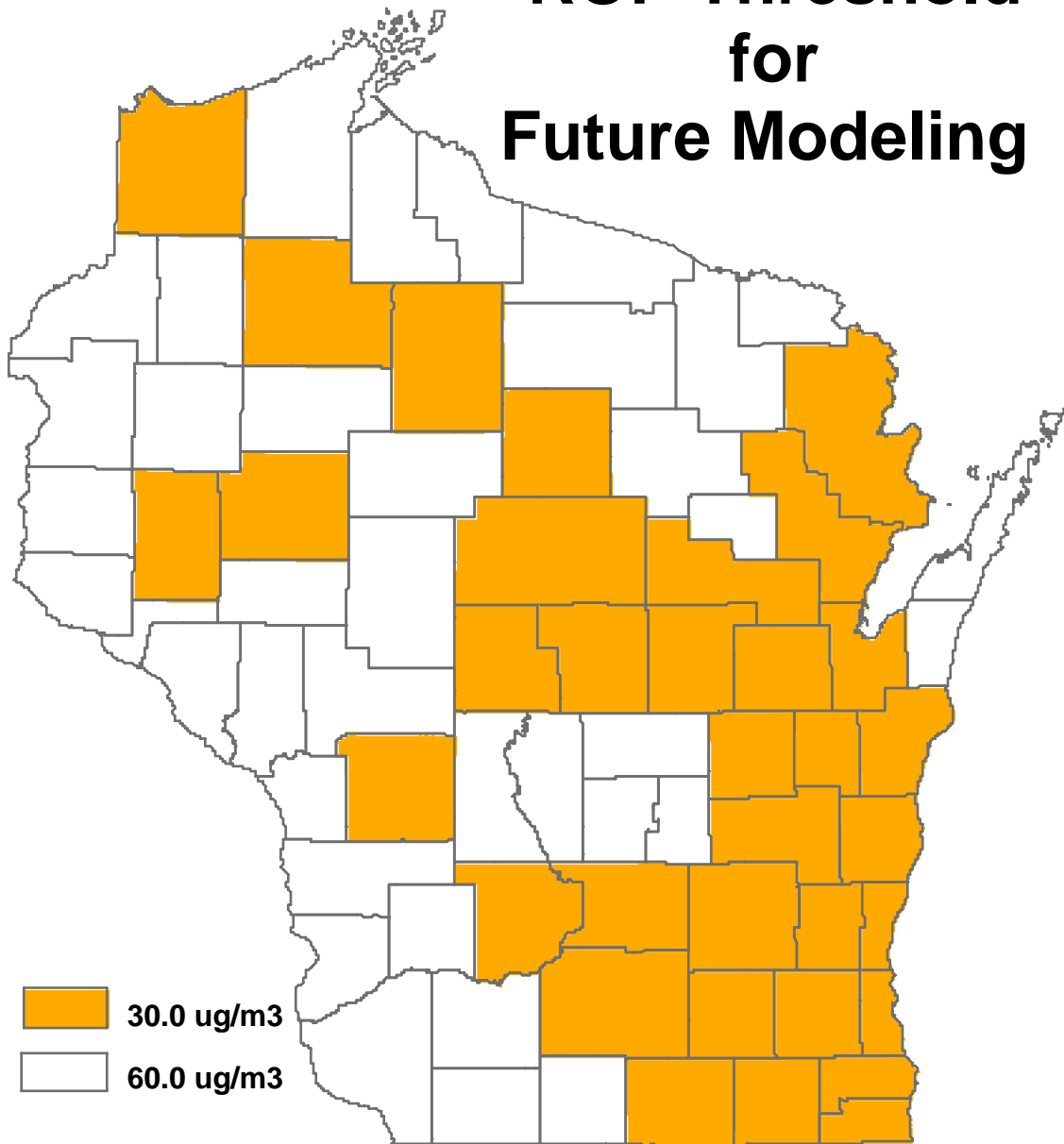
- 14.** National Emission Standards for chromium emissions from hard and decorative chromium electroplating and chromium anodizing tanks (40 CFR Part 63 subpart N) – allowed only for units that are area source or located at area sources and which are any of the following:
- Any decorative chromium electroplating 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
- 15.** Standards of Performance for spark ignition internal combustion engines (40 CFR part 60 subpart JJJ) – allowed only for the owner/operator of manufacturer-certified affected engines.
- 16.** Standards of Performance for compression ignition internal combustion engines (40 CFR part 60 subpart IIII) – 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.

**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, for those air contaminants, any emission unit operation or activity that emits only those air contaminants.

**ATTACHMENT 2**  
**Particulate Matter Modeling Threshold Concentrations by County**  
This map is current up to the date specified below and may be updated periodically.  
Updates will be posted at <http://dnr.wi.gov/air/permits/streamlining/regpermits.html>

# ROP Threshold for Future Modeling



**Updated**  
**08/15/2006**

