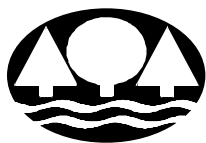


MPCA Air Quality Permits Guide

Part 3 Making Changes

Prepared by: Air Quality Staff



Minnesota Pollution Control Agency

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ACRONYMS
GLOSSARY

PREFACE TO THE GUIDE

The MPCA *Air Quality Permits Guide* is a three-part document intended to help you learn whether you need an air emission permit. If you do need one, the Guide will help you fill out an application.

Part 1: Defining Your Facility shows how to describe your equipment and quantify its emissions. After defining your facility, you may or may not need to apply for a permit.

Part 2: Determining Compliance tells you how to prepare the compliance portion of your air emission permit application.

Part 3: Making Changes **explains what air quality rules and regulations apply when making changes at your facility and how the change affects your air emission permit.**

If you have not already done so, you may find it helpful to read MPCA's booklet, *Getting Started*, as a first step. It introduces you to Minnesota's air quality permit program and offers an overview of the permit application process.

Please take your time going through each part of the Guide. Do not expect to read all three parts in one day. You will find some things that do not apply to your facility. For this reason, you probably will not need to read every section in detail.

To help you define key terms, each part of the Guide contains a **glossary** and an **acronym list**. A **case study** at the end of each part of the Guide provides examples of how a fictitious facility, Blue Ox Woodworks, completed an air emission permit application. To answer your questions for help, **phone numbers** are given in the Focus section of each part. In addition, **ordering information** is offered in the Appendix of *Part 1* should you want copies of the air quality rules and regulations.

IMPORTANT NOTE: The MPCA has tried to make the *Air Quality Permits Guide* as complete as possible, however, it is not a substitute for the rules and regulations themselves. The Guide will be revised periodically, but it will not be updated each time a specific requirement is revised or added. It is *your* responsibility to find out which requirements apply to your facility.

FOCUS OF PART 3

Part 3: Making Changes is directed primarily toward those who already have a total facility permit. If you want to make a physical or operational change to your facility, or you want to change conditions to your total facility permit, you must first determine if a permit amendment is needed. *Part 3* will tell you how to apply for the proper amendment if you have a total facility permit. *Part 3* will also tell you what to do if you do not have a total facility permit and provide direction for submitting the proper application.

If you have questions about the material covered in *Part 3*, you are welcome to call any of these numbers for help. You may also write to the MPCA for information.

| | |
|---|--|
| MPCA Air Permit Technical Advisor 1-800-MinnAir (1-800-646-6247) or (651) 282-5844 | <i>Responds to questions about rules or applying for air emissions permits</i> |
| MPCA Air Permit Document Coordinator (651) 282-5843 | <i>Can send a copy of the Air Quality Permitting Rules, application forms, fact sheets.</i> |
| MPCA Small Business Technical Assistance Program (651) 282-5847 or 1-800-657-3938 | <i>Helps business with fewer than 100 employees to understand the air quality rules and complete permit applications</i> |
| Training Registration 1-800-571-7227 | <i>Provides information on available classes and training sessions</i> |
| Air Quality Small Business Ombudsman (651) 297-8615 or 1-800-985-4247 | <i>Provides confidential assistance to small businesses; helps to resolve complaints and disputes</i> |
| Minnesota Technical Assistance Program (MnTAP) , a nonregulatory assistance program located at the University of Minnesota (612) 627-4646 or 1-800-247-0015 | <i>Assists with pollution prevention</i> |
| TTY (651) 282-5332 or 1-800-657-3864 | <i>Teletypewriter for persons with hearing impairment</i> |
| Minnesota Pollution Control Agency Air Quality Permit Technical Advisor 520 Lafayette Road St. Paul, Minnesota 55155 | <i>Mailing Address</i> |

NOTE: If you have a general permit, you may be restricted in the changes you can make. This means you cannot amend your permit. You may, however, make changes that your permit already allows or you may apply for a permit that is specific to your facility. If you have questions, contact the Permit Technical Advisor for guidance. The telephone number is listed in this Focus section.

If you have a registration permit, you can make certain changes as long as you continue to qualify for your registration permit. See the Registration Permit Handbook for more information.

1.0 INTRODUCTION

You may want to add, change or eliminate equipment or processes at your facility, or operate in a manner other than that stated in your permit. Either action can change the way state and federal rules apply to your facility or trigger new requirements. If your action will change the way the rules affect your facility, you probably will need to change or *amend* your permit.

In some cases, you will only need to notify MPCA of the action. You are also allowed to perform some actions without notifying the MPCA *and* without amending your permit.

Table 1-1 describes the procedures used by the MPCA to authorize physical and operational changes and offers sources where you may find further information.

Table 1-1
Summary of Permit Amendment Procedures

| <i>Procedure</i> | <i>Description</i> | <i>Where Is This Discussed?</i> |
|---|---|--|
| Major Amendment | Authorizes Title I modifications; changes monitoring, reporting, or recordkeeping requirements; establishes or changes case-by-case emission limitations. | Section 2.2; Minnesota Rules 7007.1500 |
| Add Control Equipment or Like Kind Replacements | Used to allow installation of air pollution control equipment, replacement of listed control equipment, or replacement of an emission unit that does not increase emissions of any regulated pollutant; no Title I modifications allowed. | Section 2.3.1; Minnesota Rules 7007.1150 |
| Insignificant Modifications | Used for insignificant activities and for small increases in emissions of criteria pollutants (below the level of minor permit amendments); no Title I modifications allowed. | Section 2.3.2; Minnesota Rules 7007.1250 |
| Minor Amendment | Used for increases in emissions of criteria pollutants (below the level of moderate permit amendments); no Title I modifications allowed. | Section 2.3.3; Minnesota Rules 7007.1450 |
| Moderate Amendment | Used for increases in emissions of criteria pollutants (above the level of minor permit amendments); no Title I modifications allowed. | Section 2.3.4; Minnesota Rules 7007.1450 |
| Administrative Amendment | Corrects typographical errors; clarifies permit language; adds or incorporates requirements; extends deadlines. | Section 2.4.2; Minnesota Rules 7007.1400 |

Table 1-2 summarizes whether an application is needed and tells you when you can begin construction and when operations can start after the change is authorized by the MPCA.

Table 1-2**Overview of Permit Change Process**

| Procedure | Is an Application Needed? | When Can Construction Begin? | When Can Operation Begin? |
|--|---|--|---|
| Major Amendment | Yes | Usually, after permit is issued. (See section 2.2.5 for NSPS modifications.) | After permit amendment is issued |
| Add Control Equipment or Replacements | No. However you must notify the MPCA seven working days prior to the installation or replacement. | Seven working days after the MPCA receives notice. | Seven working days after the MPCA receives notice. |
| Insignificant Modifications | No. However, you must notify the MPCA after you make four insignificant modifications during the term of one permit (or within a five-year period). | Immediately | Immediately |
| Minor Amendment | Yes | Seven days after the MPCA receives a complete application | Seven days after the MPCA receives a complete application |
| Moderate Amendment | Yes | After you receive a letter authorizing construction from the MPCA | After permit amendment is issued |
| Administrative Amendment | No. However, you must request the change in writing (MPCA also has forms available if you choose to use them.). | Not applicable | Not applicable |

1.1 Making physical and operational changes

When you add, change or eliminate equipment or a process, you make *a physical or operational change* to your facility. These kinds of changes can affect the type or quantity of pollutants emitted into the air and change how rules or permit limits apply to your facility.

Physical or operational changes that affect how rules or limits apply are *modifications*. You may be required to make changes to your permit because of modifications at your facility.

Changes to your permit are *amendments*. Amendments keep the information in your permit up-to-date. The MPCA created *major*, *moderate* and *minor* permit amendments to allow physical and operational changes at your facility.

The MPCA also set up procedures for making some types of physical or operational changes without permit amendments. Actions that require you to notify the MPCA include installing pollution control equipment. In addition, the MPCA allows you to make *insignificant modifications* without notifying the MPCA or applying for a permit amendment.

In response to some applications, the MPCA may issue an *installation and operation* (I/O) permit. An I/O permit authorizes construction or modification of a portion of the total facility. It describes only the part of the facility being changed. The MPCA may issue an I/O permit when it cannot issue a total facility permit in a timely fashion to respond to your needs.

1.2 Changing permit terms

The MPCA created *major* and *administrative* permit amendments to authorize changes to these permit terms and conditions:

- Emission limits
- Monitoring requirements
- Operation and maintenance requirements
- Performance test requirements
- Compliance schedule
- Record keeping requirements
- Reporting requirements
- Raw material usage limitations

Under specific circumstances, you may also contravene permit terms after you notify the MPCA. See Section 2.4.1 for details on contravening permit terms.

2.0 WHAT TYPE OF AMENDMENT DO YOU NEED? HOW DO YOU APPLY?

Before making a change to your facility or permit, answer three questions:

- Will the change cause your facility to cross a permitting threshold?
- Do you need a major permit amendment to make the change?
- Are there other procedures that must be followed to make the change?

2.1 Crossing permit thresholds

In some situations, you need to apply for a total facility permit *and* receive a permit authorizing you to make your change *before* making the change at your facility. This means you will need more time to prepare a proper permit application and also allow time for review by the MPCA. You must apply for a total facility permit prior to constructing your change if:

- ◆ you have not submitted a timely total facility permit application according to the application dates listed in *Part 1*, Section 9.2 of the Guide; or
- ◆ the total facility permit application date for your facility has passed, but your existing facility did not require a total facility permit on this date and now the combined emissions from your facility and your modification exceeds one of the thresholds requiring you to obtain a state permit as listed in *Part 1*, Section 5.1.3 of the Guide; or
- ◆ you have a state permit for your existing facility (i.e., you did not need a Part 70 permit), and the combined emissions from your facility and your modification now exceeds one of the thresholds for a Part 70 permit as listed in *Part 1*, Section 5.1.3 of the Guide; and the total facility permit application date for your facility has passed.

After you submit a complete application for a total facility permit, the MPCA will proceed in one of two ways. It may issue a total facility permit that includes authorization for you to make the change. However, if it appears that the time required to issue a facility permit would cause an undue economic hardship, the MPCA may issue an *installation and operation (I/O)* permit. Later, the MPCA would issue a total facility permit.

An I/O permit will *only* authorize you to make your change and contain conditions related to that change; it will not cover the entire facility.

To avoid situations where you must cross a permitting threshold, consider the following recommendations:

- ◆ Submit your total facility permit application on time.
- ◆ Plan for modifications in advance. By including *alternative operating scenarios* and *emissions trading* plans in your facility permit, you may give yourself additional flexibility in your operations. For more information on these options, see *Part 1*, Section 7.1.
- ◆ Consider pollution prevention approaches when determining how to make your desired change.
- ◆ Choose appropriate permit limitations. If you plan to accept limits and operate under a state permit, give yourself some room under the threshold. You may want to modify your source and retain your state permit status.

Figures 2-A, 2-B and 2-C can help you determine the type of permit application you must submit to the MPCA. Read Section 5.1 of *Part 1* to determine the type of total facility permit your existing facility needs. If your facility needs a Part 70 permit, follow the diagram in Figure 2-A. If a state permit is needed, see Figure 2-B. If your existing facility currently requires no total facility permit, refer to Figure 2-C.

NOTE: Conditions that restrict your potential emissions may only be considered if they are *enforceable*. This means that the conditions must be incorporated into a permit that was public noticed and reviewed by the EPA. The permit must continue to be in force, or be required by a rule (e.g., NSPS). Conditions *proposed* in a permit application not yet incorporated into a permit **cannot** be used in determining the type of permit required by your existing facility. If you have questions, contact the Permit Technical Advisor at (651)282-5844.

Figure 2-A

Existing Source is Required to Have a Part 70 Permit and Wishes to Make a Change

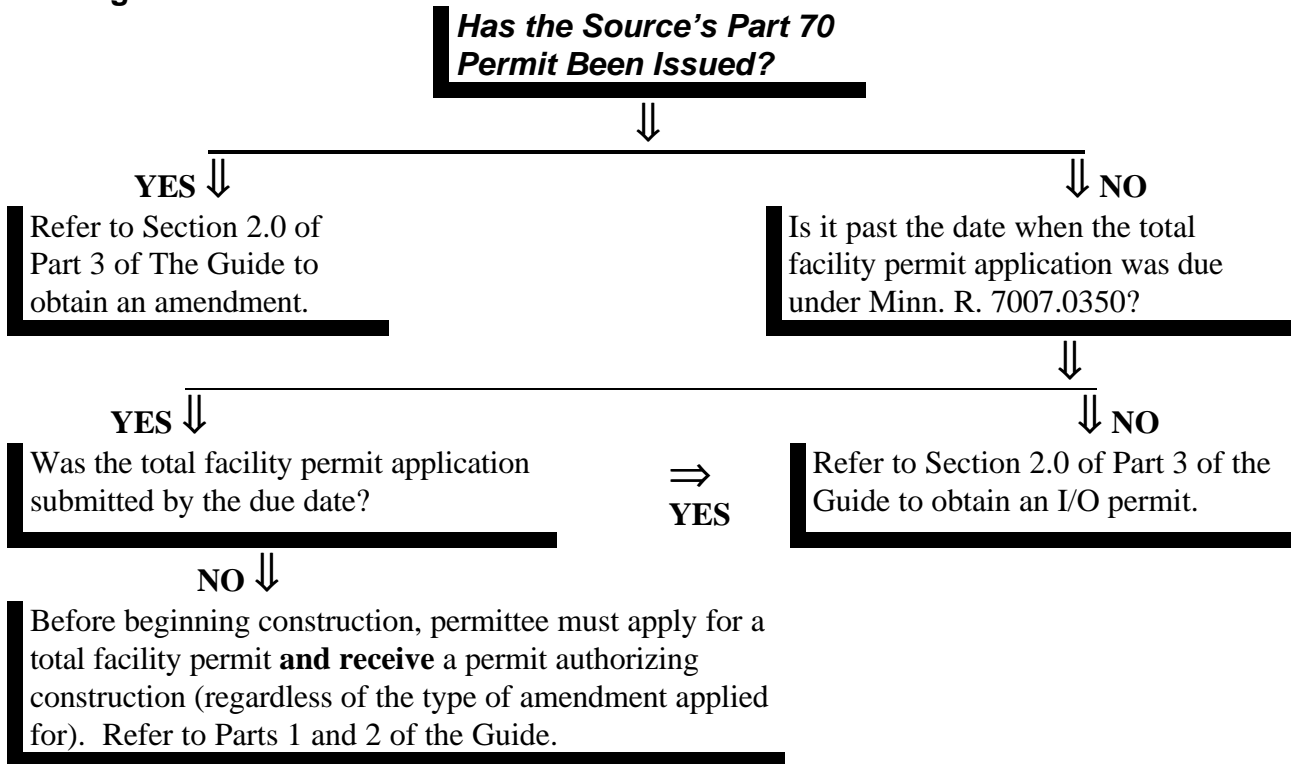
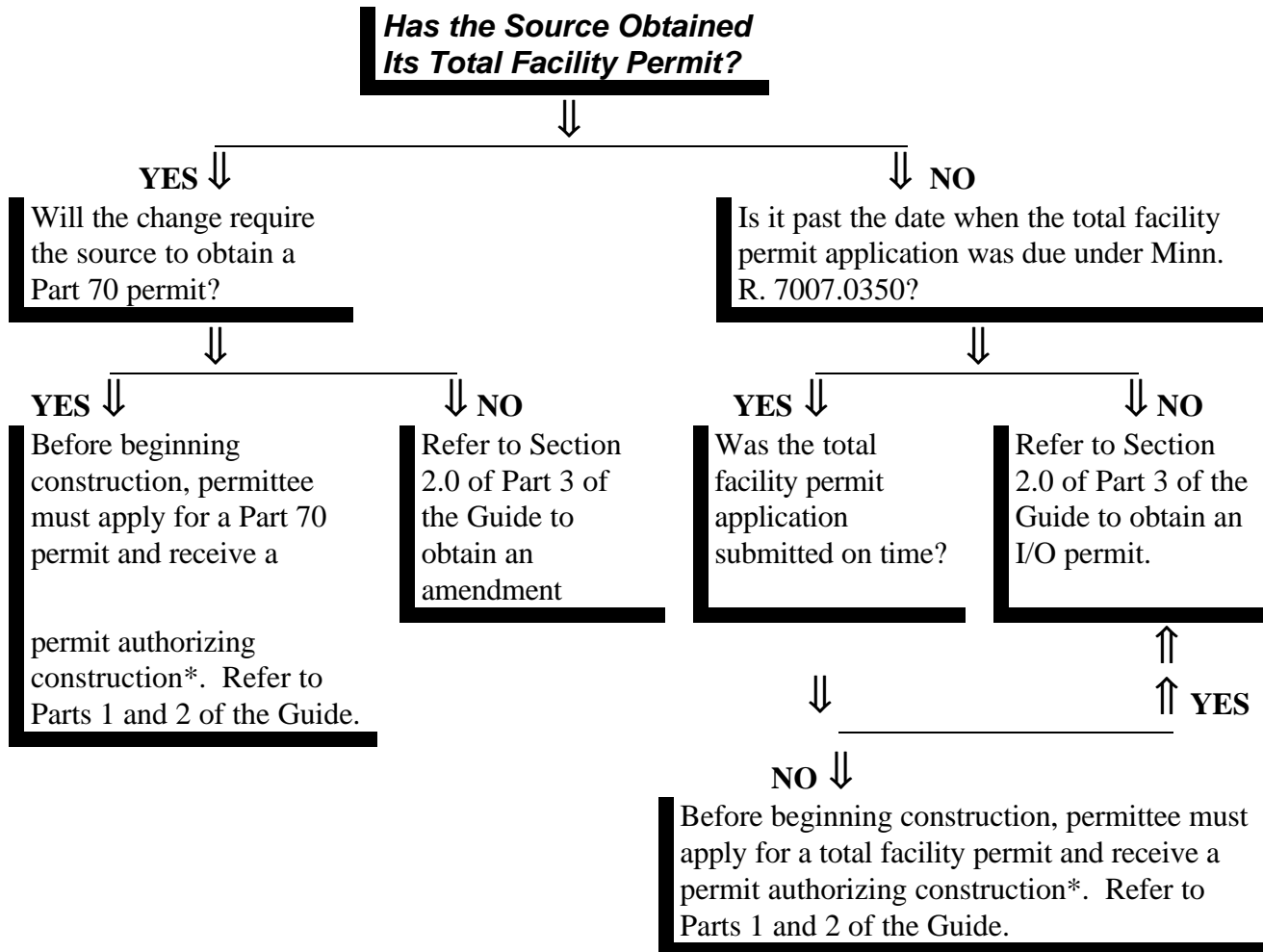


Figure 2-B

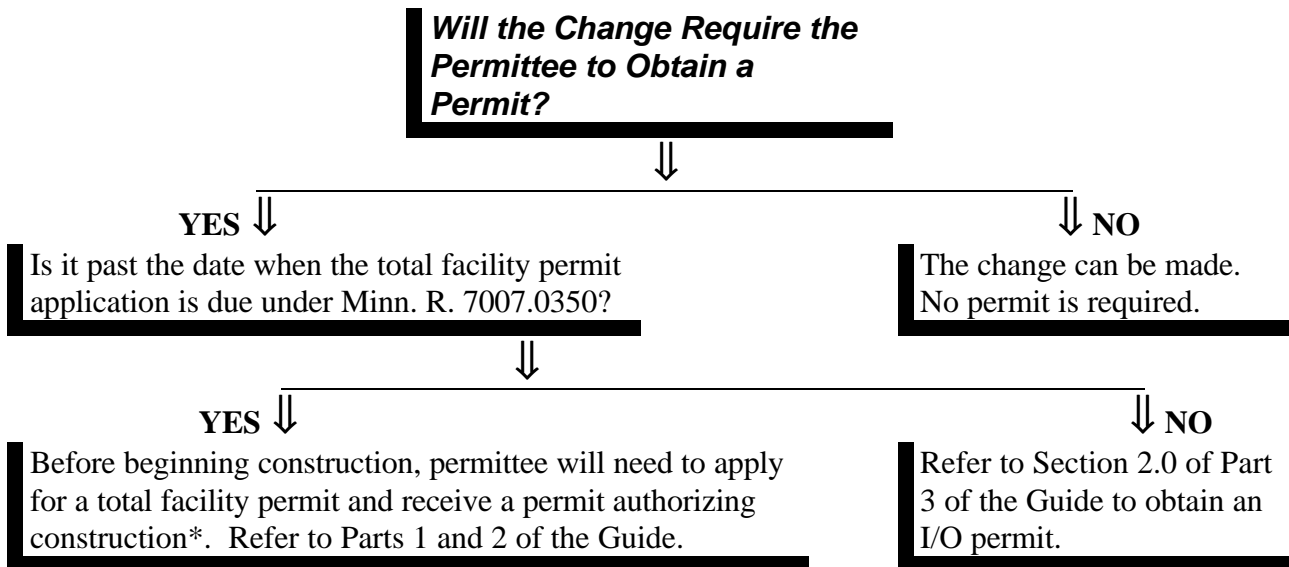
Existing Source is Required to Have a State Permit and Wishes to Make a Change



* Regardless of the type of amendment that might otherwise be applicable.

Figure 2-C

Existing Source is Not Required to Have a Permit Under Minn. R. ch. 7007 and Wishes to Make a Change



* Regardless of the type of amendment that might otherwise be applicable.

2.2 Major permit amendments

All Title I modifications require major permit amendments. Title I regulations come from Title I of the federal Clean Air Act. They include the New Source Review (NSR) regulations (Prevention of Significant Deterioration and nonattainment area review), the New Source Performance Standards (NSPSs), and the National Emission Standards for Hazardous Air Pollutants (NESHAPs). If your change would be a modification under any of these regulations, you are making a Title I modification.

Even though some Title I modifications cause no emission increase or lead to a decrease in emissions, they still require major permit amendments.

2.2.1 New Source Review (NSR)

The federal New Source Review (NSR) program protects good air quality where it exists and improves air quality where it is poor. NSR is a *pre-construction review* program. If you trigger NSR, you must examine how your planned project will affect air quality and other environmental factors *before* starting construction or making modifications.

NSR includes two regulations. The *nonattainment area regulation* applies to the release of criteria pollutants that contribute to the nonattainment status of an area. It seeks to improve the

air quality in these areas whenever facilities are built or expanded. The *Prevention of Significant Deterioration (PSD) regulation* applies to releases of pollutants not causing an area to be in nonattainment. PSD preserves good air quality while allowing expansion or new construction to occur.

To understand the following discussion in Section 2.2.1.1, it will be important to understand the concept of potential to emit (PTE). Your facility's PTE describes the maximum possible emissions it can emit, taking physical limitations and certain legal restraints into consideration. To calculate PTE, you typically determine the maximum hourly emission rate (based on design capacity) and multiply this number by 8,760 hours (the number of hours in one year). The result is the PTE. It is usually expressed in units of tons of pollutant per year. For more information, see Section 5.0 in *Part 1*.

NOTE: When determining New Source Review applicability, you need to look at the "net emissions increase." For more information on how to calculate this, see the Training Manual from the MPCA's Modifications Workshop. This is also discussed briefly in the following sections.

2.2.1.1 Nonattainment area review

The EPA classifies geographic areas as attainment or nonattainment areas. If ambient air quality standards are violated, or if dispersion modeling predicts a violation, the EPA classifies the area as a nonattainment area for the pollutant causing the violation.

An area that is classified as nonattainment for one or more pollutants may be an attainment area for the remaining criteria pollutants. Facilities located in this area must do their part to clean up the air. As part of this clean-up effort, the EPA developed nonattainment area review. (Check *Part 1*, Section 6.1.1 for a discussion of nonattainment areas.)

Facilities that have a PTE above 100 tons per year of a nonattainment pollutant are considered to be major sources of that pollutant. Other facilities are defined as minor sources for nonattainment review.

You must perform a nonattainment area review if:

- you are constructing a new facility with a PTE for the nonattainment pollutant(s) that exceeds 100 tons per year; or
- you are making a modification to a minor facility that will increase the emissions of the nonattainment pollutant(s) by more than 100 tons per year; or

- your facility is a major source for a nonattainment pollutant and you plan a change that will increase the emissions of that pollutant by more than the level listed in Table 2-1 (next page).

To calculate the emissions increase at a major source, first calculate the increase in emissions from the modification itself. Some modifications will also affect the emissions of units not being directly modified. You must include the PTE of the units indirectly affected in the PTE for the modification. In particular, note equipment that will have increased capacity utilization because of the modification.

For example, consider a coating process limited by the size of an oven. If a new, larger oven replaces the existing oven, the coating process could run at a higher capacity. The PTE of the modification is the PTE of the entire coating process, not just the PTE of the oven. (In this example, a *bottleneck* is eliminated. For details on bottlenecks, see Section 5.1 in *Part 1*.)

When calculating the emissions increase for Title I, you can use pollution control efficiencies if the control equipment rule applies. For Title I purposes, the control equipment rule can only apply if the emission unit has a total enclosure, or where 100% of the emissions are captured. See Minn. R. 7007.1200, subp. 2, for further information.

If the emissions increase for the nonattainment pollutant to be released due to the modification itself is smaller than the levels listed in Table 2-1, your change is a ***minor modification*** for nonattainment review. If you are not subject to nonattainment area review, you do not need a major amendment under this program.

If the emission increase for the nonattainment pollutant to be released due to the modification exceeds the level listed in Table 2-1, you may be making a major modification. However, if you have made enforceable changes in the last five years that reduced the amount of the nonattainment pollutant you emit, you must first perform *emissions netting*. For more information on emissions netting and other New Source Review topics, see the *New Source Review Workshop Manual (Draft)*. Appendix 2-A in *Part 1* explains where to get this book.

**Table 2-1
NSR Emission Increase Thresholds for Major Modifications at Major Sources**

| Pollutant | Emission Increase Threshold (tons per year) |
|--|--|
| Carbon monoxide (CO) | 100 |
| Nitrogen oxides (NO _X) | 40 |
| Sulfur dioxide (SO ₂) | 40 |
| Particulate matter (PM) | 25 |
| Particulate matter (PM ₁₀) | 15 |
| Ozone (measured as emissions of volatile organic compounds, or VOCs) | 40 |
| Lead (Pb) | 0.6 |
| Fluorides | 3 |
| Sulfuric acid mist | 7 |
| Total reduced sulfur (including H ₂ S) | 10 |
| Municipal waste combustor (MWC) organics | 3.5 x 10 ⁻⁶ |
| MWC metals | 15 |
| MWC acid gases | 40 |
| Municipal solid waste landfill gases | 50 |
| Ozone depleting substances | 100 |

If your emissions of the nonattainment pollutant exceed the threshold in Table 2-1 (even after emissions netting), you may want to restrict the emissions of your modification by accepting permit limitations. This option is discussed later in Section 2.2.1.3 and in *Part 1*, Section 5.3.2.

Nonattainment area review applies only to the nonattainment pollutant. During the pre-construction review of a major modification in a nonattainment area, you must complete each of the following steps:

- Determine the Lowest Achievable Emission Rate (LAER).
- Acquire emission offsets. (You must convince *other* facilities to reduce their emissions of the nonattainment pollutant.)
- Demonstrate progress toward attainment.
- Certify compliance at all other facilities that you own or operate in the state.

- Assess visibility impacts in Class I areas (see *Part 1*, Section 6.1.3).

Nonattainment area review requires knowledge of emission control technologies, modeling and NSR regulations.

2.2.1.2 *Prevention of Significant Deterioration review*

Prevention of Significant Deterioration (PSD) review applies to projects that may cause major increases of pollutants for which the area is *not* classified as nonattainment. (Remember: An area that is nonattainment for one or more pollutants can still be an attainment area for the other pollutants.) The permit limitations set during a PSD review are generally less restrictive than those set in a nonattainment area review. However, a PSD review requires the same type of expertise needed to prepare an application and the review process remains long.

Your facility is a major source under PSD if the emissions of any criteria pollutant from your facility exceed 250 tons per year. However, you will also be a major source if the emissions of a criteria pollutant exceed 100 tons per year and your facility is one of the 28 types listed in Table 6-2 in *Part 1*. If your facility is not a major PSD source, it is a minor PSD source. For more information, see Section 6.1.3 in *Part 1*.

You must perform a PSD review if:

- You are constructing a **new major source**. This applies if you have no existing facility and you plan to construct a facility that would be a major source or if you move an existing major source. It also applies if your facility is a minor source under PSD and the PTE from your modification alone exceeds the applicable PSD major source threshold (100 tons per year if the source is listed in Table 6-2 of *Part 1*; otherwise, 250 tons per year).
- You are making a **major modification** to a major source. To make a major modification, your facility must be a major source prior to the modification. In addition, the potential emissions increase must exceed the thresholds listed in Table 2-1.

For example, suppose that the Blue Ox Woodworks facility has potential emissions of 300 tons of volatile organic compounds per year. Because it emits more than 250 tons per year of a criteria pollutant, the Blue Ox facility is a major source. If the operator of Blue Ox wants to add a new diesel generator with potential emissions of 90 tons of nitrogen oxides per year, the owner would need to prepare a Prevention of Significant Deterioration application, unless pre-construction review could be avoided. (The 90 tons per year of nitrogen oxides exceeds the emissions increase threshold of 40 tons per year from Table 2-1.)

To determine if you are subject to PSD review, first calculate the potential emissions increase

from the modification. Make sure that you include the emissions from all units that are affected by the modification, both directly and indirectly. (Refer to the discussion in Section 2.2.1.1 regarding nonattainment area review.) If the emissions increase resulting from the modification falls below the levels listed in Table 2-1, your change is a *minor modification*. This means you are not subject to PSD review.

However, if the emissions increase resulting from the modification exceeds any level listed in Table 2-1, you must perform emissions netting. (See the *New Source Review Workshop Manual [Draft]*. Appendix 2-A in *Part 1* explains where to get this book.)

To avoid PSD review, you may choose to restrict your emissions by accepting enforceable permit conditions. This will be discussed in Section 2.2.1.3.

If you cannot or choose not to avoid Prevention of Significant Deterioration review, your permit application must include each of the following elements:

- *Best Available Control Technology (BACT) determination* – a process to select a technology that achieves a maximum reduction in pollutants by taking into account energy, environmental and economic impacts. This process is done on a case-by-case basis since BACT changes from facility to facility.
- *Air quality analysis* – an evaluation of the potential affect of the construction or modification on the air quality of the local area. This analysis demonstrates that the ambient air quality standards and allowed increases in ambient concentrations will not be violated.
- *Additional impacts analysis* – an assessment of the air, ground and water pollution caused by the proposed project on soils, vegetation and visibility. This includes how secondary impacts (e.g., increases in the work force, housing and related industry) will affect the local area.
- *Class I area impact analysis* – a prediction of the possible effects of the project on visibility in national parks and wilderness areas.
- *Additional pre-construction reviews* – the Great Lakes States Air Permitting Agreement, the Minnesota Environmental Quality Board’s environmental review, and the MPCA’s air toxics review all require additional review of the project’s environmental impacts. See Section 3.0 for more information on these programs.

By completing these elements of the review, you will show that your project will not cause adverse impacts on the environment.

For more information on netting and other aspects of New Source Review, consult *the New Source Review Workshop Manual (Draft)*. Appendix 2-A of Part 1 explains where to get this book.

2.2.1.3 *Accepting Enforceable Permit Conditions*

If, after performing emissions netting, your net emissions increase from any pollutant exceeds a threshold in Table 2-1, you may still avoid New Source Review. You can do this by accepting permit limits on your modification. Follow these steps:

- (1) Identify parts of the modification you can restrict. For example, suppose you want to add a new boiler to your facility, but its potential emissions exceed a threshold in Table 2-1. Because few boilers need to operate continuously, you could limit the amount of fuel burned. This would limit your annual allowable emissions, but it probably would not affect your daily boiler operations.
- (2) Propose a method for making the limitation enforceable. (Review *Part 1*, Section 5.3.2.1, for discussions on proposing and complying with enforceable conditions.) In the case of the boiler, you could keep daily records on fuel consumption and on fuel composition. If the MPCA and the EPA decide that your proposed method is sufficient and enforceable, the conditions will be written into your permit amendment.

You must comply with the conditions in the permit, so make sure that you can abide by them. To relax these limitations (i.e., emit more), you will be required to perform New Source Review.
- (3) Finally, make sure you properly avoided New Source Review. Return to your emission calculations. If the allowable emissions from the modification are less than the emission increase thresholds listed in Table 2-1, your change is a ***synthetic minor modification***. Synthetic minor modifications require major permit amendments.

You may also accept limitations on the emissions from other parts of your facility. This means you have to accept permit limits so that the total facility, including the modification, is not a major source. In most cases, your existing facility's actual emissions must never have exceeded the major source thresholds defined in this section.

To examine the enforceability of your permit conditions, the MPCA and EPA will review your major permit amendment. You must receive a major permit amendment to avoid New Source Review.

To illustrate the idea of placing restrictions on your facility, suppose that the Blue Ox

Woodworks facility had a PTE of 300 tons of volatile organic compounds (VOCs) per year, making it a major source. Now Blue Ox wants to propose a modification with a PTE of 48 tons of volatile organic compound emissions per year. Without any limits, Blue Ox would be adding a major modification to a major source (i.e., emissions greater than the emission increase threshold; in this case, 40 tons of volatile organic compounds per year). New Source Review would be required and the permitting process would be long and probably costly.

However, because Blue Ox's actual emissions from its existing facility have never exceeded 250 tons of VOCs per year in an attainment area, Blue Ox may accept permit conditions that limit the PTE for the entire facility (after the modification) to 248 tons of VOCs per year. The modification would require a major permit amendment, but would not require New Source Review. Blue Ox would become a synthetic minor source.

2.2.2 New Source Performance Standards (NSPSs)

New Source Performance Standards (NSPSs) apply to specific categories of processes or equipment. NSPSs improve air quality by requiring new or modified equipment to meet emission standards for one or more criteria pollutant. Each NSPS describes the equipment or process that it applies to, the emission standard or work practice that must be followed, and the date when the standard applies. For a complete listing of New Source Performance Standards, refer to Requirements Form GI-09(D).

You make an NSPS modification when you make a change to an emission unit *not* currently covered by an NSPS rule that causes the unit to *become* subject to an NSPS. This occurs when an emission unit would otherwise be subject to an NSPS, but was installed prior to the proposal of the NSPS. If a change to that unit increases emissions, the emission unit becomes subject to the NSPS.

To determine if your change increases emissions covered by an NSPS, calculate the emission rates of the pollutants before and after making the change. Compare the maximum hourly emission rates. If the emission rate after the change is greater than the emission rate prior to the change, the change is a modification.

For example, suppose a facility wishes to increase the rated capacity of a fuel oil-fired boiler constructed and installed in 1985 by replacing the burner in order to achieve an increased rate from 15 million Btu per hour to 22 million Btu per hour. The unit is not subject to an NSPS (40 CFR 60, Subpart Dc), because it was installed prior to the date Subpart Dc was proposed. To determine if this change is an NSPS modification, the owner must see if the change causes an increase in the maximum hourly emission rate of any pollutant covered by an NSPS limit.

In the NSPS, there is a sulfur dioxide (SO₂) limit applying to boilers that burn distillate oil. The example boiler burns distillate oil, so the owner must determine if this change will cause an increase in SO₂ emissions. The maximum hourly SO₂ emission rate from the “unmodified” boiler is 7.7 pounds per hour. The owner calculated the maximum hourly emission rate (ER) of sulfur dioxide after the change as follows:

| | |
|---|--|
| Maximum allowable sulfur content (from the NSPS) | 0.5% |
| Btu content of distillate fuel oil | 140,000 Btu per gallon |
| Rated heat input after change | 22 x 10 ⁶ Btu per hour |
| AP-42 emission factor | 144 X S pounds per 1000 gallons of fuel oil where S equals 0.5% |

$$ER = 22 \times 10^6 \text{ Btu/hr} \times (1/140,000 \text{ Btu per gallon}) \times ((144) \times (0.5) / 1000 \text{ gallons.})$$

$$= 11.3 \text{ pounds per hour}$$

Because this change increases sulfur dioxide emissions, this is a NSPS modification and the boiler is now subject to NSPS. This and all other NSPS modifications are Title I modifications. They require major permit amendments.

2.2.3 National Emission Standards for Hazardous Air Pollutants (NESHAPs)

The NESHAPs regulations restrict emissions of Hazardous Air Pollutants or HAPs. (Table A of Requirements Form GI-09(A) contains a list of the HAPs.) Part 61 NESHAPs limit the emissions of specific HAPs from a specific process or type of equipment or facility. To see if Part 61 NESHAPs applies to the equipment you plan to install or change, review Section 6.1.2 in *Part 1*.

You make a modification under the Part 61 NESHAPs when:

- the change will increase emissions of a hazardous air pollutant described in the applicable NESHAP; or
- the change will increase the emissions of any other hazardous air pollutant regulated in Part 61.

To determine if emissions have increased, compare the hourly emission rates at maximum capacity before and after the modification. If the emission rate after the change is greater than the emission rate prior to the change, the change is a modification. (This comparison is identical to the method used for New Source Performance Standards.)

Section 112(g)(2)(B) of Title III of the 1990 Clean Air Act Amendments requires the U.S. EPA to develop a preconstruction program for construction and reconstruction of major sources of HAPs. This requirement includes the installation and operation of maximum achievable control technology (MACT). To meet this mandate, the EPA amended the federal rule, 40 CFR Part 63, Subpart B -- Requirements for Control Technology, addition sections 63.40 through 63.44. This establishes minimum requirements and procedures facilities are to follow to meet the Section 112(g)(2)(B) requirement.

To implement the Section 112(g)(2)(B) rule at the state level, the MPCA revised Minn. R. ch. 7007. All other states are also required to implement the rule. The MPCA's goal is to meet minimum federal requirements with a user-friendly rule.

The requirements of this rule do not apply to research and development facilities as defined in federal and state rules. Also, your facility is not subject to this rule if the facility:

- only operates emission units already subject to a promulgated MACT standard;
- only operates emission units/sources that have been specifically delisted from EPA's source category list;
- only operates emission units classified as electric utility steam generating units;
- is a municipal waste combustor; or
- has a potential to emit less than 10 tons per year of a single HAP and less than 25 tons per year of combined HAPs, or is classified as a non-major (synthetic minor or area) HAP source.

If your facility does not fit under any of the above and you have plans to construct or reconstruct a major HAP source, then your facility is subject to this rule. Definitions of "construct" and "reconstruct" as used here are as follows:

"Construct a major source" means:

- 1) to fabricate, erect, or install at any greenfield site a stationary source or group of stationary sources located within a contiguous area and under common control and which emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs, or
- 2) to fabricate, erect, or install at any developed site a new process or production unit which in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs, with an exception outlined in the rule.

“Reconstruct a major source” means the replacement of components at an existing process or production unit that in and of itself emits or has the potential to emit 10 tons per year of any HAP or 25 tons per year of any combination of HAPs whenever:

- 1) the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable process or production unit; and
- 2) it is technically and economically feasible for the reconstructed major source to meet the applicable MACT emission limitation for new sources established under the rule.

Your facility must submit a preconstruction permit application which includes a case-by-case MACT determination. Before commencement of construction or reconstruction of a major source of HAPs, the MPCA must review and issue a construction permit under the major amendment process.

2.2.4 Changing permit terms and conditions

Apply for a major permit amendment when you want to do any of the following:

- Relax existing monitoring, reporting or record keeping requirements. (To relax a permit term is to make it less stringent.)
- Establish or change a permit condition designed to avoid a requirement that would otherwise apply. (For example, if you accept permit limitations to avoid a Part 70 permit or to avoid New Source review, you are establishing a permit condition designed to avoid a requirement that would otherwise apply.)
- Establish or amend a permit condition based on factors specific to your facility. (This may include emission limits based on ambient air modeling using data describing your facility.)

Check Section 1.2 for a list of changes that can be authorized with an administrative amendment. The application requirements for administrative amendments are less rigorous and the process to issue your permit will move more quickly.

2.2.5 Revising conditions in Administrative Orders

To ensure that the air quality in nonattainment areas is improving, the MPCA has issued *Administrative Orders* to about 25 facilities. The Administrative Orders for these facilities contain emission limits and other conditions. The Orders are included in Minnesota’s State Implementation Plan (see Part 1, Section 6.1.1.1).

These conditions are usually duplicated in the facility’s permit. To change something in an Administrative Order, you must apply for a major amendment to your permit *in addition* to

applying for an amendment to the Administrative Order. The MPCA will process both amendments at the same time.

2.2.6 Applying for a major permit amendment

To apply for a major permit amendment, you must provide the same type of information required for a total facility permit application. (See *Part 1*, Section 9.0.) If you already have a valid total facility permit, the application for your amendment only needs to include information on the new or modified emission units.

Your application must include a completed modification forms package. To make sure that you have the latest version, write or call the MPCA's Permit Document Coordinator. The address and telephone number are listed in the Focus section of *Part 3*.

To review the instructions on calculating PTE and on determining which rules and regulations apply to your facility, refer to *Parts 1 and 2*. *Parts 1 and 2* also provide guidance on forms cited in the modification form.

For nearly all major permit amendments, you must wait until the MPCA issues your permit amendment before you start construction on your change. Section 9.3 in *Part 1* describes the MPCA's processing procedures.

For changes that are modifications under New Source Performance Standards (NSPS) *only*, the MPCA offers a short cut. The MPCA will grant construction approval within 60 days of receiving your complete application. Immediately upon receiving this approval, you can start construction. However, you cannot begin operation of the NSPS emission unit until the MPCA issues your permit amendment. Review Minnesota Rule 7007.1500, Subpart 3a, if you plan to modify or reconstruct an emission unit that will be governed by the New Source Performance Standards regulation.

The MPCA will process your application for a major amendment in the same way it processes applications for a total facility permit. The MPCA has a maximum of 18 months to process a major permit amendment.

Be aware that a Title I modification may also trigger an *environmental review*. This requires you to study the environmental impacts of the proposed project in detail. Environmental reviews are discussed in *Part 3*, Section 4.0 and *Part 1*, Section 6.2.2.

2.3 Procedures for making other modifications

If you decide that the change is *not* a Title I modification, you need to know the size of the emissions increase from your modification. You may calculate this by comparing the emissions before and after your modification using the *permit rule method*. (The permit rule method is described in Minnesota Rules part 7007.1200.) In this method, you:

- (1) Determine the hourly emission rate of all of your facility's emission units at their maximum physical capacity *before* the modification.
- (2) Calculate the hourly emission rate of all emission units at your facility *after* the modification.
- (3) Subtract the "before" number from the "after" number.
- (4) Repeat this calculation for each criteria pollutant. (The criteria pollutants are CO, NO_x, SO₂, VOCs, PM₁₀, and Pb.)

Be sure to consider the effect of process bottlenecks on the emissions, both before and after making the change. Include any physical limitations and existing permit conditions in your calculations. (Review *Part I*'s description of emissions calculations in Section 4.0. In particular, note the discussion of bottlenecks, physical limitations and enforceable conditions.)

Include all emission changes from a project. Do not break up a project into smaller, related changes. If you separate a larger project into smaller pieces, you will be violating state and possibly federal rules.

The MPCA also uses the permit rule method to determine what type of procedure you must follow to make your change.

2.3.1 Control equipment/replacements

If you are installing pollution control equipment, replacing listed control equipment, or replacing an existing unit with a new, similar unit, you may not need a permit amendment. Since the use of pollution control equipment improves air quality, the MPCA developed a procedure to expedite its installation and replacement. This same procedure was extended to specific types of other equipment replacement.

However, be aware of the restrictions. First, the change must not be a Title I modification or otherwise require a major amendment (e.g., proposing a change to monitoring requirements in your permit). (Be sure to examine if New Source Review applies to the installation.. Also remember that a new unit may trigger a New Source Performance Standard that did not apply to the old unit.) Second, the new equipment must not increase emissions of any criteria air

pollutant or any hazardous air pollutant. To determine if the change causes an increase in emissions, use the permit rule method.

Notify the MPCA *before* you make your change. Your notice must describe your planned change. Seven working days after the MPCA receives your notice, you may begin to install or replace the equipment *at your own risk* (i.e., if the MPCA determines that your proposed change requires a major amendment, but you've already made the change under this rule provision, you would be subject to enforcement action for failing to obtain the required permit amendment).

The MPCA may determine that your change triggers new monitoring, record keeping or reporting requirements. If so, the MPCA will develop a permit amendment to include the new requirements in your permit. The installation and operation of the equipment cannot violate your permit.

2.3.2 Insignificant modifications

If your change causes only a small increase in rate of emissions, it may be an insignificant modification. Two types of changes qualify as insignificant modifications. The first type refers to the construction or installation of the insignificant activities listed in *Part 1*, Appendices 1-A and 1-B. The second type includes those changes that increase emissions by amounts less than the minor amendment emission increase thresholds. Column A of Table 2-2 contains these thresholds.

Table 2-2
Emission Thresholds For Minor and Moderate Amendments

| Pollutant | Emission Increase Thresholds (lb/hr) | |
|------------------|---|--|
| | Column A Minor Amendments ¹ | Column B Moderate Amendments ² |
| NO _x | 2.28 | 9.13 |
| SO ₂ | 2.28 | 9.13 |
| VOCs | 2.28 | 9.13 |
| PM ₁₀ | 0.855 | 3.42 |
| CO | 5.70 | 22.80 |
| Lead | 0.025 | 0.11 |

¹ Modifications that have emissions above this level are not insignificant modifications.

² Modifications that have emissions above this level cannot receive a minor amendment.

You may make an insignificant modification without notifying the MPCA. Be sure to keep records that describe the modification and the date of the change. Also, for activities listed in Appendix 1-B in *Part 1*, calculate and record the emissions. You will need to list these activities in your next permit application.

Each insignificant modification must be an independent activity, not part of a larger project. To ensure that a project is not broken down into smaller insignificant modifications, the MPCA developed a reporting requirement. If you make four or more insignificant modifications within a five-year period, you must add the emission increases (for each pollutant) from all the modifications. Compare the totals to the moderate amendment emission increase thresholds listed in Column B of Table 2-2. If one or more pollutant total exceeds a threshold, you must notify the MPCA within seven days of beginning construction on the most recent modification. In your notice, certify that the individual modifications were not part of a single project. For specific information, see Minnesota Rules 7007.1250, Subpart 4.

2.3.3 *Minor permit amendments*

Changes too large to be insignificant modifications, and that do not need a major permit amendment, require a minor or moderate permit amendment. To determine which amendment you need, refer to the increase in emissions calculated using the permit rule method. An example of how to calculate the increase in emissions follows.

Phyllis is considering adding another diesel generator with a diesel fuel consumption capacity of 5 gallons per hour. Before doing so, she wants to know what type of amendment is needed. She already looked at the NSPS, NESHAP and NSR rules; this change will not be a Title I modification. She then calculated the increase in hourly emissions that would come from adding the diesel generator. The following chart summarizes her findings:

| | PM ₁₀ | SO ₂ | NO _x | VOC | CO |
|--|------------------|-----------------|-----------------|------|-------|
| Maximum hourly increase (pounds per hour) | 0.16 | 0.16 | 2.32 | 0.16 | 0.51 |
| Insignificant modification threshold (pounds per hour) | 0.855 | 2.28 | 2.28 | 2.28 | 5.70 |
| Minor modification threshold (pounds per hour) | 3.42 | 9.13 | 9.13 | 9.13 | 22.80 |

The maximum hourly increase in NO_x is greater than the insignificant modification threshold, but less than the minor modification threshold. Phyllis can apply for a minor amendment to install the additional diesel generator. Phyllis also noted that the increase in NO_x emissions (in

tons per year) will not increase potential emissions to a point where she would need a Part 70 permit for the total facility.

If the emission rate falls between the minor amendment and moderate amendment emission increase thresholds (those listed in Columns A and B of Table 2-2), apply for a minor modification. Your application must detail your proposed change using Modification Form MOD-01. Describe the modification, quantify the emissions increase, and identify any new regulatory requirements that may apply due to the modification. Your application must also include two certifications by a responsible official stating that:

- the proposed amendment is not for a modification which should be permitted as a major amendment; and
- the change is not part of a larger project which, taken as a whole, would require a major amendment.

Application requirements for a Part 70 source differs somewhat from those for a state source. In particular, if you are amending a Part 70 permit, your application needs to include your suggested draft language for the permit amendment.

You may make your planned change seven working days after the MPCA receives the application. Operate the modified equipment as you proposed in your application. If you do not comply with the terms of your application, the MPCA may take enforcement action against you. The permit shield does not apply to minor permit amendments.

Although you may begin to construct and operate your modification soon after applying for your minor amendment, the MPCA will probably not review your amendment immediately. It will be assigned a lower priority than applications for major and moderate permit amendments.

If you are a Part 70 source, the EPA will also review your amendment. There will be no public comment period unless the MPCA believes that the modification will be controversial. If the change is likely to be controversial, the MPCA will invite comments from the public and tell you to stop construction.

2.3.4 Moderate permit amendments

If the emission rate you calculated with the permit rule method exceeds a moderate amendment emission increase threshold listed in Column B of Table 2-2, apply for a moderate permit amendment. Again, your change must not be a Title I modification or otherwise require a major amendment.

In your application for a moderate permit amendment, describe the modification, quantify the emissions increase, and identify any new regulatory requirements that will apply due to the modification. Part 70 sources must include suggested language for a permit amendment. Applications from all sources must include a certification from a responsible official stating that:

- the proposed amendment is not for a modification which should be permitted as a major amendment; and
- the change is not part of a larger project which, taken as a whole, would require a major amendment.

Within sixty days of receiving your application for a moderate permit amendment, the MPCA will send you a letter allowing you to start construction. After it sends you the letter, the MPCA will complete its review of your application and prepare an amendment. You may begin construction after you receive this letter from the MPCA authorizing construction. Delay actual operation of the change until after the MPCA issues the amendment.

If the change is likely to be controversial, the MPCA will invite comments from the public. If the MPCA decides to do this, you must then construction until the permit is issued. The EPA will review all moderate amendments to a Part 70 source.

2.4 Procedures for changing permit terms

To change permit terms, you may use one of three methods:

- Contravening permit terms
- Applying for and receiving an administrative amendment
- Applying for and receiving a major amendment

The procedures used to contravene permit terms and to apply for an administrative amendment follow. Section 2.2.5 describes the procedures for applying for a major permit amendment.

2.4.1 Contravening permit terms

Minnesota's permit rule (and the federal permit rule) may allow you to *contravene* (violate) a permit condition *at your own risk*. Minnesota Rules 7007.1350 describes the restrictions that apply to this procedure.

If you want to make a change that contravenes a permit term, notify the MPCA in writing, using Form MOD-11. Your notice must describe the term of the permit to be changed, how the rules allow this change, and why no restrictions apply. In addition, a responsible official of your company must certify your notification. Seven working days after the MPCA receives your

notice, you may make the change.

Permit terms that can be contravened are those that should not have been placed in the permit, or that are too specific. An unlikely example of this would be if the permit requires that you must use a yellow paint. If you want to use an identical formulation except that it has a blue color, you would notify the MPCA that you plan to contravene this permit term.

If you violate a permit term that cannot be contravened under this rule, the MPCA can take enforcement action against your facility and against the official who certified the change.

2.4.2 Administrative amendments

Administrative amendments correct minor mistakes, make minor changes to permit terms and increase compliance requirements. Apply for an administrative permit amendment to do any of the following:

- Correct a typographical error.
- Change the name, mailing address (but not facility location), or phone number of any party mentioned in the permit. (If your facility is permitted as a stationary source, changing its location may require New Source Review. At a minimum, you would need a major amendment before moving.)
- Add or increase the frequency of monitoring, recordkeeping or reporting requirements.
- Eliminate monitoring, recordkeeping or reporting requirements if:
 - 1) the requirements are rendered meaningless because the only emissions to which the requirements apply no longer occur;
 - 2) the change is to eliminate one validated reference test method for a pollutant and source category in order to add another;
 - 3) the requirements are redundant to or less strict than other existing requirements;
 - 4) the requirements are technically incorrect and their elimination does not affect the accuracy of the data generated or of the monitoring information recorded or reported; or
 - 5) the piece of equipment to which the monitoring, recordkeeping, or reporting requirement applies no longer exists or has been permanently disabled from use at the stationary source.
- Record a change in ownership or operational control of the facility.

- Incorporate into a permit the requirements from preconstruction review permits issued by the agency, incorporate into a permit the requirements from standards adopted under 40 CFR Part 63 (NESHAPs for Source Categories), or to lower the plantwide emission limits in permits with Plantwide Applicability Limits to reflect the impact of standards adopted under 40 CFR Part 63.
- Clarify the meaning of a permit term. (If the existing permit language causes confusion or could lead to a misinterpretation, you may change the wording to make the meaning more clear. However, the MPCA must agree with the new wording.)
- Extend a deadline by no more than 120 days. (If the deadline is based on a federal regulation, it must be one that the EPA has given the MPCA authority to change.) The MPCA may extend a testing deadline up to 365 days if the extension is needed to allow the permittee to test at worst case conditions as required by Minn. R. 7017.2025, subp. 2.
- Remove any condition from a permit which was based on an applicable requirement that has been repealed, but only if the permit condition:
 - 1) is neither required nor replaced by another applicable requirement; and
 - 2) was not established for a specific facility to protect human health and the environment, to prevent pollution, as a mitigation measure in an environmental impact statement, or to obtain a negative declaration in an environmental assessment worksheet.
- Correct or update a citation to an applicable requirement where the corresponding permit condition is not changed.

To apply for an administrative amendment, submit a written request to the MPCA at the address listed in the Focus section. No formal application is needed, however, Form MOD-10 is available to use for administrative amendment requests, if you wish to use it. Specify the section of the permit to be changed and the reason for the change.

In most cases, you can make the change as soon as the MPCA receives your request. The exception to this occurs when the facility changes ownership or operational control. Before the new owner or operator can operate the facility, the MPCA must have a copy of the written agreement between the old and new owners showing the date of facility transfer and liability.

The permit shield does not apply to any administrative amendments, except those that incorporate requirements from pre-construction review.

3.0 OTHER PRE-CONSTRUCTION REVIEWS

Certain types of projects may trigger the Great Lakes States Air Permitting Agreement, the Minnesota Environmental Quality Board's environmental review, or the MPCA's air toxics review. If so, you must assess the environmental impacts of your change on the surrounding area.

3.1 Great Lakes States Air Permitting Agreement

If your project is subject to New Source Review (NSR), you need to be aware of the Great Lakes States Air Permitting Agreement. Minnesota and seven other states that border the Great Lakes entered into this pact to protect and improve the water quality of the Great Lakes and their watersheds.

Under this agreement, the states require a special review for projects subject to NSR. The potential emissions of the pollutants listed in Table 3-1 must be identified and quantified. If our change will cause an increase in emission rates of these pollutants greater than the corresponding emission threshold listed in Table 3-1, you must install Best Available Control Technology (BACT) for that pollutant.

Table 3-1

Pollutants Governed by the Great Lakes State Air Permitting Agreement

| Pollutant | Emission Threshold (milligrams per hour) |
|-------------------------------------|--|
| Mercury | 1000 |
| Alkylated Lead Compounds | 0.4 |
| Total Polychlorinated Biphenyl | 12.0 |
| Hexachlorobenzene | 35.0 |
| Benzo-a-pyrene | 1.0 |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxin | 0.3 |
| 2,3,7,8-Tetrachlorodibenzofuran | 0.3 |

The MPCA sends a copy of the public notice and draft permit to the seven other states included in the agreement. The other states may submit comments on the analysis conducted. If the other states have comments, the MPCA must review them and respond to them. These comments may lead to changes in your permit.

3.2 Minnesota Environmental Quality Board's Environmental Review

The Minnesota Environmental Quality Board's (EQB's) *environmental review* process makes sure that adverse environmental impacts will not result from the construction of a significant project. To ensure this, some permits cannot be issued until the completion of the environmental review process.

The Environmental Quality Board oversees the environmental review process. The Environmental Assessment Worksheet (EAW) and the Environmental Impact Statement (EIS) are used to assess the impact of a proposed project. The EAW review process is less intensive than the EIS process. EAWs are often used as a screening tool to help decide if a project requires an EIS. An EAW may take up to six months to prepare and may cost several thousand dollars, while an EIS usually requires twelve months to prepare at a much higher cost.

You must prepare an EAW if your change increases your potential to emit (PTE) of a criteria pollutant by 100 tons per year or more. You must also prepare an EAW if the change increases your facility's overall PTE of a criteria pollutant to more than 100 tons per year.

An EAW is also required for projects listed in Minnesota Rules Part 4410.4300. Table 3-2 contains a short list of common projects that may require mandatory review. (You can find a complete list in Appendices 4-A and 4-B in *Part I*.)

Table 3-2

Project Examples That May Require an EAW or EIS

Construction or expansion of an alcohol fuel production facility

Construction of an electric power generating plant

Construction or expansion of a hazardous waste transfer or storage facility

Construction or expansion of a coal storage or transfer facility

Development or expansion of a mining facility—metallic or nonmetallic

Construction or expansion of an industrial, commercial or institutional facility in excess of specified gross floor space (the floor space varies by the type of area where the construction takes place)

State or local government agencies can also require an EAW for projects with “potential for significant environmental effects.” These agencies can order an EAW on their own initiative or as a result of a citizen petition containing 25 or more signatures.

To obtain more information on the environmental review process, call the Minnesota Environmental Quality Board:

| | |
|--------------------------------|----------------|
| In the Twin Cities metro area: | (651) 296-8253 |
| Outside the metro area: | 1-800-652-9746 |

3.3 State air toxics review

Another pre-construction review program is *air toxics*. The MPCA currently requires air toxics review as part of the assessment of the environmental impacts from your facility. If you are required to conduct an air toxics review, contact the Permit Technical Advisors. They can provide further information about how to proceed with this review process. The telephone number is listed in the Focus section.

NOTE: Some of the air toxics are also hazardous air pollutants (HAPs) referred to in Section 2.0. However, the MPCA's air toxics lists—and the air toxics review—are independent of the National Emissions Standards for Hazardous Air Pollutants (NESHAPs).

4.0 HOW DID BLUE OX WOODWORKS MAKE ITS CHANGE?

In *Parts 1* and 2, Blue Ox Woodworks completed its application for a total facility permit. The owner requested permit limitations in order to receive a non-expiring state facility permit. The MPCA issued the Blue Ox facility permit with those limitations.

Now Blue Ox wants to add a spray booth and compressor identical to their current system. Their plan is to use an existing steam-heated dryer to dry finished coatings from both spray booths. The existing thermal oxidizer will control solvent vapors from the existing spray booth and dryer, as well as solvent vapors from the new spray booth.

Phyllis Walder wants to keep her “state permit” status. She believes that the usage limits in her total facility permit will cover added pollutants (e.g., cleaning solvents, hazardous air pollutants and volatile organic compounds) created from this change. However, she has to first determine the type of amendment needed.

Phyllis looked at whether the proposed change is a Title I modification. She understands that the change would require a major amendment if the modification is subject to National Emission Standard for Hazardous Air Pollutants (NESHAPs - Part 61 or Part 63), would be a New Source Performance Standard (NSPS) modification, or be subject to New Source Review (NSR).

When she prepared her original application for a facility permit, Phyllis determined that Part 61 NESHAPs and NSPS did not apply to the existing spray booth. (To confirm once again, she quickly reviewed the federal regulations in *Part 1*, Sections 6.1.2 and 6.1.4.) Because the new spray booth is not one of the listed source categories, Phyllis concluded that it is not subject to NSPS or Part 61 NESHAPs.

Because Phyllis wishes to keep her “state permit” status after the change, she will maintain the potential HAP emissions at the levels in Blue Ox’s total facility permit. No individual HAP will have a PTE of more than 10 tons per year, and the PTE of all HAPs combined will be less than 25 tons per year. Thus, the change will not trigger the modification provisions of the Part 63 NESHAPs.

To determine if New Source Review applies, Phyllis again evaluated whether her existing facility is a major or minor stationary source according to New Source Review. She had done this as part of the permit application for her total facility permit. By accepting limits on volatile organic compounds usage and sulfur content of the fuel oil, Phyllis had limited Blue Ox’s potential to emit to less than 100 tons per year. This meant she did not have to apply for a Part 70 permit and kept Blue Ox a minor source as defined by New Source Review.

Next, Phyllis calculated the PTE of the new spray booth. She initially performed the calculation without considering permit limits or control equipment. The painting and coating processes done in the spray booth emit particulate matter and volatile organic compounds. (Phyllis assumed all of the particulate matter is PM₁₀.)

Phyllis prepared a list of the specifications for the new spray booth and then performed the potential to emit calculations. She excluded any decreases resulting from control equipment or usage limitations.

| | |
|--|---|
| Spray gun capacity (2 guns) | 5 gal/hour |
| Maximum VOC content of coatings used | 7.39 lb/gal |
| Maximum solid content of coatings used | 2.46 lb/gal |
| Transfer efficiency (airless spray) | 45% |
| Cleaning solvent usage in 1997 | 800 gal/year at 4000 hours of operation |

VOC Emission Calculations for the New Spray Booth

COATING

$$2 \text{ guns} \times 5 \frac{\text{gallons}}{\text{hour} - \text{gun}} \times 7.39 \frac{\text{lb VOC}}{\text{gallon}} \times 8760 \frac{\text{hours}}{\text{year}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 324 \frac{\text{tons}}{\text{year}}$$

CLEANING SOLVENT

$$\frac{800 \text{ gallons}}{4000 \text{ hours}} \times 8760 \frac{\text{hours}}{\text{year}} \times 7.2 \frac{\text{lb VOC}}{\text{gallon}} \times 2 (\text{safety factor}) \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 12.6 \frac{\text{tons}}{\text{year}}$$

TOTAL VOC INCREASE = 337 tons per year

Particulate Matter Calculations for the New Spray Booth

$$2 \text{ guns} \times 5 \frac{\text{gallons}}{\text{gun} - \text{hour}} \times 2.46 \frac{\text{lb PM}}{\text{gallon}} \times (1 - 0.45) \times 8760 \frac{\text{hours}}{\text{year}} \times \frac{1 \text{ ton}}{2000 \text{ lb}} = 59.3 \frac{\text{tons}}{\text{year}}$$

Blue Ox, a minor source, is located in an area that is in attainment for all criteria pollutants. The proposed change will be a major modification only if the PTE of any criteria pollutant exceeds 250 tons per year. The PTE for PM₁₀ is below the 250 tons per year threshold, but the potential to emit volatile organic compounds is 337 tons per year. Phyllis looked at the Minnesota performance standard for control equipment (Minn. R. 7011.0060 - 0080) to determine if it

could apply. The new booth will not have a total enclosure and the existing control device can only

achieve 90% efficiency (the rule lists 95%), so she cannot use the rule to decide if Title I applies. Unless Phyllis accepts permit limitations to restrict VOC emissions, New Source Review will apply to Blue Ox.

Faced with the prospect of New Source Review, Phyllis decided to keep the VOC limits that were already specified in Blue Ox's total facility permit. Now the limitations will apply to the solvents used in the existing spray booth and those used in the new spray booth, too. Phyllis also plans to combust the solvent vapors from the spray booth in the existing thermal oxidizer.

These restrictions will limit Blue Ox's total potential VOC emissions (including changes) to less than 100 tons per year. Since this clearly limits the modification to under 100 tons per year as well, the modification will not be major under New Source Review.

However, the new spray booth's potential VOC emissions, prior to permit limits and control equipment, exceeds the major modification threshold. From her review of Section 2.1.1.1 in *Part 3: Making Changes*, Phyllis found that she must apply for a major permit amendment. The facility needs a major amendment to establish permit conditions in order to avoid New Source Review requirements.

To apply, Phyllis calls the MPCA for the latest modification forms. She then completes the permit application for the spray booth as if she were applying for her total facility permit. Because the potential emission increase from the modification is less than 100 tons per year, the modification will not require any additional environmental review (i.e., Great Lakes States Air Permitting Agreement, Environmental Quality Board's environmental review, or state air toxics review). However, the draft permit amendment will be placed on public notice and public comment will be invited. The EPA will review it as well.

For information on the other Blue Ox application forms, refer to *Part 1*, Section 10.0 and Appendix 5 and *Part 2*, Section 6.0 and Appendix 2.

Phyllis knows that she cannot start construction on the modification until the MPCA issues her permit. Because she has received a total facility permit for Blue Ox Woodworks, the MPCA will issue Amendment No. 1 to the facility permit. If the MPCA had not yet issued the facility permit, and preparing the facility permit would have delayed the progress of the modification, Blue Ox Woodworks would likely have received an installation and operation permit.

Acronyms

| | |
|---------|--|
| APO | Administrative Penalty Order |
| AQ | Air Quality |
| BACT | Best Available Control Technology |
| CAA | Clean Air Act |
| CAAA | Clean Air Act Amendments |
| CAS | Chemical Abstracts Services |
| CEM | Continuous Emission Monitor |
| CFR | Code of Federal Regulations |
| EAW | Environmental Assessment Worksheet |
| EIS | Environmental Impact Statement |
| EPRO | Environmental Review and Planning Office |
| EPA | Environmental Protection Agency |
| EQB | Environmental Quality Board |
| HAPs | Hazardous Air Pollutants |
| LAER | Lowest Achievable Emission Rate |
| LOW | Letter of Warning |
| MAAQs | Minnesota Ambient Air Quality Standards |
| MACT | Maximum Achievable Control Technology |
| MnTAP | Minnesota Technical Assistance Program |
| MPCA | Minnesota Pollution Control Agency |
| MSDS | Material Safety Data Sheet |
| NAAQS | National Ambient Air Quality Standards |
| NESHAPs | National Emission Standards for Hazardous Air Pollutants |
| NOV | Notice of Violation |
| NSPS | New Source Performance Standard |
| NSR | New Source Review |
| POTW | Publicly Owned Treatment Works |
| PSD | Prevention of Significant Deterioration |
| PTE | Potential to Emit |
| RACT | Reasonable Available Control Technology |
| SIC | Standard Industrial Classification |
| SIP | State Implementation Plan |

Glossary

acfm - actual cubic feet per minute. A measurement of the rate of exhaust (volume per unit of time) from an emission unit or emission facility.

actual emissions - amount of pollutants that are emitted from a stationary source, emission unit, or emission facility over a given period of time.

affected facility - facility or emission unit subject to a New Source Performance Standard (NSPS). The affected facilities for each NSPS are outlined in that NSPS.

affected source - emission source that is subject to Title IV (Acid Rain). (Minn. R. 7007.0100, subp. 4)

affected state - any state located adjacent to Minnesota and whose air can be affected by Minnesota's activities, or any state that is within 50 miles of a permitted source (Minn. R. 7007.0100, subp. 5)

affected unit - an emission unit that is subject to Title IV (Acid Rain) (Minn. R. 7007.0100, subp. 6)

air toxics - any pollutant, other than the six criteria pollutants, that scientists believe have the potential to cause adverse environmental or health effects.

administrative penalty order - an enforcement action used by the MPCA that requires violations to be corrected within 30 days; penalties can be assessed up to \$10,000.

administrative permit amendment - amendment to correct typographical errors; change company name or ownership or mailing address and other simple changes to a permit that do not change emissions. An administrative permit amendment does not require formal application, and can be initiated by either the permittee or the MPCA.

air emission permit - legal document that describes a facility and also how the facility is meeting federal and state air quality regulations. A permit also authorizes construction and operation of a facility.

alternative operating scenarios - terms and conditions in an air emission permit that allow planned changes to a facility's operating conditions. These must be identified by the permittee when applying for a permit (Minn. R. 7007.0800, subp. 11)

ambient air quality standards -

Minnesota (MAAQS) - air quality standards established by the state of Minnesota that apply to outside air in Minnesota.

National (NAAQS) - air quality standards established by EPA that apply to outside air throughout the country.

applicable requirements - all air quality rules and regulations that apply to emission units in a facility (Minn. R. 7007.0100 subp. 7).

application shield - with some exceptions, allows an existing facility that is operating on the effective date of the permit rule and has submitted a complete and timely application to continue operating before the facility's air emission permit is issued (Minn. R. 7007.0350, subp. 3).

attainment area - geographic area considered to have air quality as good as or better than the national ambient air quality standards as defined in the Clean Air Act. An area can be an attainment area for one pollutant and a nonattainment area for others (see *nonattainment area*).

begin actual construction - start of on-site physical construction or other activities in preparation for a planned modification to a facility. Examples include, but are not limited to, installation of building supports and foundations, laying of underground pipework, and construction of permanent storage structures (Minn. R. 7005.0100, subp. 3a).

Best Available Control Technology (BACT) - emission limitation based on the maximum degree of emission reduction that can be achieved through application of production processes and available methods, systems and techniques while also considering energy, environmental and economic impacts, and other costs.

bottleneck - physical or operational limitation that is part of the design of an emission facility or emission unit. Bottlenecks prevent operation of equipment at 100% of capacity, and can be considered in potential to emit (PTE) calculations when determining if a permit is needed.

Clean Air Act - federal law that regulates air pollution in the United States.

Clean Air Act Amendments - revisions made in 1990 to the Federal Clean Air Act.

carbon monoxide (CO)- colorless, odorless gas that is toxic because of its tendency to reduce the oxygen-carrying capacity of the blood.

Code of Federal Regulations - regulations published by the Executive departments and agencies of the federal government. The Code of Federal Regulations (CFR) is revised annually as a set of paperback books, and is available in libraries. Title 40 of the CFR contains all federal rules and regulations relating to Protection of the Environment.

completeness review

administrative - MPCA review confirming that a permit application is submitted on standard forms and is properly organized.

technical - MPCA review confirming that the technical details of a permit application are complete and accurate.

compliance agreement - a negotiated settlement between a facility and the MPCA that includes a schedule of corrective action (*see stipulation agreement*).

compliance assurance monitoring (CAM) - the methods used to determine continuous compliance with standards and limitations that apply to a facility.

compliance certification - portion of a permit application that outlines a facility's compliance status for all air quality rules and regulations that apply. A responsible official must certify that the compliance certification is accurate and complete (*see responsible official*). Compliance certifications are also required on an annual basis after the permit is issued.

compliance plan - plan in an air emission permit that shows how a facility will be in compliance with the air quality rules and regulations that apply to the facility. A compliance plan includes specific monitoring, record keeping, reporting, and operation and maintenance procedures that must be followed during the life of a permit.

compliance schedule - negotiated agreement between a facility and a government agency that specifies dates and procedures by which a facility will reduce emissions, and thereby, comply with a regulation.

construction - any fabrication, erection, or installation of an emission facility, emission unit or stationary source (Minn. R. 7005.0100, subp. 5; also see *begin actual construction*).

construction permit - permit to construct (not operate) a source (see *installation and operation permit*).

continuous compliance - compliance status of a facility when monitoring data show the facility to be operating within emission limits and standards throughout a specified reporting period.

corrective action - activities undertaken to correct air quality violation(s).

criteria pollutants - six pollutants (ozone, carbon monoxide, total suspended particulates, sulfur dioxide, lead, and nitrogen oxide) determined by the US EPA to be hazardous to human health. The term "criteria pollutants" comes from the requirement that EPA must describe the characteristics and potential health and welfare effects of these pollutants. It is on the basis of these criteria that air quality standards are established.

dscfm - dry standard cubic feet per minute. A measurement of the volume of air per unit of time exhausted from an emission unit or emission facility (see *acfm*), corrected to account for the temperature and moisture content being different from "standard conditions."

deviation - departure from permit limits or conditions that may or may not endanger human health or the environment. Facilities are required to report deviations in their air permits within schedules contained in Minn. R. 7007.0800, subp. 6.

dispersion modeling - analysis of a facility's air emission data using computer programs to estimate the affects of emissions on the surrounding air.

emission - pollution discharged into the atmosphere from smokestacks, other vents, and surface areas of commercial or industrial facilities.

emission facility - any group of activities and/or equipment that can cause pollutants to be released into the air. Emission facilities are made up of emission units and are contained within stationary sources (Minn. R. 7005.0100, subp. 10).

emission factor - number that describes the relationship between the amount of raw material processed in an emission unit and the amount of pollution produced from the emission unit. For example, an emission factor for a gas-fired boiler would be pounds of NO_x produced per million cubic feet of gas burned.

emission limit - restriction on the amount of a particular pollutant that can be released from an emission unit or emission facility over a given period of time. Emission limits are commonly expressed as a concentration (grains per dry standard cubic foot) or rate (pounds per hour).

emission point - where air pollutants are emitted to the outside air from a facility (e.g., a stack or vent). One or more *emission units* may exhaust at an emission point.

emission source - (see *emission unit*).

emission thresholds - levels of emission rates (pounds/hour or tons/year) above which certain rules or permit requirements apply.

emission trading - EPA policy that allows a facility to increase and decrease emissions of the same pollutant among several emission units provided that total facility emissions do not increase. Emission trades cannot result in a Title I modification or violate any applicable requirement (see *operational flexibility*).

emission unit - an identifiable piece of equipment or process that emits air pollution. Examples include a boiler, a coal storage pile, a parts washer or any activity or equipment that can cause pollutants to be released.

enforcement waiver - in some cases, protection from potential enforcement actions for not holding a permit in the past for facilities that should have had one.

Environment Assessment Worksheet (EAW) - tool of environmental review. It may be mandatory, meaning the project falls into a category specified in Minnesota rules, or it may be ordered when facts indicate the project "may have the potential for significant environmental effects." An EAW is required by Minnesota rules when the construction or modification of a stationary source results in an increase of 100 tons per year or more of a single air pollutant, after pollution control equipment is considered, or under any of the other conditions listed under Minn. R. 4410.4300. The EAW process typically takes six months to complete.

Environment Impact Statement (EIS) - the more intensive part of environmental review. An EIS is not always required, but is mandatory under the conditions listed in Minn. R. 4410.4400. The EIS is required when the project is such that it is inevitable that it will have some impact on the environment. The EIS process typically takes 9-12 months to complete.

environmental review - process that provides information to units of government on the environmental impacts of a project before approvals or permits are issued. It creates the opportunity to anticipate and correct potential adverse affects on the environment due to a project (see *Environmental Assessment Worksheet* and *Environmental Impact Statement*).

fugitive emissions - emissions that are not and cannot be contained or collected and emitted through a stack or vent. Examples are unpaved roads and outdoor storage piles. The determination of whether an emission is fugitive is often made on a case-by-case basis. (Minn. R. 7005.0100, subp. 11c)

general permit - permit for a class or category of facilities.

gr/dscf - grains per dry standard cubic foot. A unit of measurement of the concentration of a pollutant in flue or exhaust gas. There are 7000 grains in a pound.

Hazardous Air Pollutants (HAPs) - group of pollutants regulated by the US EPA, other than the six criteria pollutants, that scientists believe have the potential to cause adverse environmental or health effects.

insignificant activities - activities that do not require permitting. Some insignificant activities are required to be listed in a permit application for facilities otherwise required to obtain a permit (Minn. R. 7007.1300).

insignificant modification - constructing or beginning an activity or emission unit that is on the insignificant activities list, or a modification that is not on the insignificant list but results in an increase less than the thresholds listed in the rules (Minn. R. 7007.1250).

installation and operation (I/O) permit - permit issued by the state that authorizes the installation of new equipment or the modification of existing equipment. This type of permit is issued to a facility that lacks a valid total facility permit, but submitted a timely application under the current permit program.

intermittent compliance - compliance status of a facility when monitoring data shows the facility to be operating within emission limits and standards for part of a reporting period. In contrast, if a facility is in compliance for an entire reporting period, the facility is in continuous compliance (*continuous compliance*).

lead - heavy metal that is hazardous to human health when breathed or swallowed. Its use in gasoline, paints, and plumbing compounds has been sharply restricted or eliminated by federal laws and regulations (see *criteria pollutants*).

Letter of Warning (LOW) - enforcement tool used by the MPCA for alleged minor violations; generally requires corrective action but no penalties.

listed control equipment - control equipment that is listed in the Minnesota performance standard for control equipment (Minn. R. 7011.0070).

Lowest Achievable Emission Rate (LAER) - under the Clean Air Act this is the rate of emissions that reflects: (a) the most stringent emission limitation contained in a State Implementation Plan for a facility, unless the owner or operator of a facility can demonstrate that the limitation is not achievable; or (b) the most stringent emissions limitation achieved in practice, whichever is more stringent.

major permit amendment - amendment to an air emission permit that cannot be made under the minor or moderate amendment provisions of the rules. (Minn. R. 7007.1500)

Material Safety Data Sheet (MSDS) - document that outlines information about a chemical substance, including ingredients, health and environmental hazards, flammability, safety precautions, etc. MSDSs for all chemical substances are available from the supplier of the material.

Maximum Achievable Control Technology (MACT) - emissions limitations based on the best demonstrated control technology or practices to be applied to major sources emitting one or more of the federally listed hazardous pollutants.

minor permit amendment - amendment to an air emission permit that allows a modification that results in an emissions increase below the levels described in Minn. R. 7007.1450, subp. 2, with the exceptions that are found in Minn. R. 7007.1450.

moderate permit amendment - amendment to an air emission permit that allows a modification that results in an emissions increase greater than the levels described in Minn. R. 7007.1450, subp. 2, but that does not require a major permit amendment (Minn. R. 7007.1450).

modification - any physical or operational change at an emission unit or emission facility or stationary source (not allowed by any existing permit) that can cause the amount of pollutants released to increase, either at the specific unit being changed, or elsewhere in the facility. Also any Title I modification. Routine maintenance, repair, and replacement are not considered modifications (Minn. R. 7007.0100, subp. 15).

National Emission Standards for Hazardous Air Pollutants (NESHAPs) - emissions standards set by EPA for air pollutants not covered by NAAQS that may cause an increase in deaths or in serious irreversible or incapacitating illness.

New Source Performance Standards (NSPS) - uniform national EPA air emission and water effluent standards that limit the amount of pollution allowed from new sources or from existing sources that have been modified.

New Source Review (NSR) - federal program that contains the Nonattainment Area and Prevention of Significant Deterioration programs and that applies to certain facilities with the potential to emit air pollution of 100 or 250 tons per year.

nitrogen oxides (NO_x) - Oxides of nitrogen (except nitrous oxide) that are regulated because they can cause lung and eye irritation, can contribute to the formation of acid rain, and react in the atmosphere to form ozone and smog (see *criteria pollutants*).

nonattainment area - geographic area that does not meet one or more of the NAAQS for the criteria pollutants designated in the Clean Air Act.

Notice of Violation (NOV) - enforcement tool used by the MPCA as a formal notice issued for alleged violations; requires corrective action but no penalties.

opacity - amount of light obscured by particulate pollution in the air (e.g., clear window glass has zero opacity, a brick wall has 100 percent opacity). Opacity is used as an indicator of changes in performance of particulate matter pollution control systems.

operating permit - permit to operate a source.

operational flexibility - provisions in the Minnesota permit rule that allow a facility to make certain changes without obtaining a permit amendment. In order to qualify, the facility would have had to request these changes in their total facility permit application. (See *alternative operating scenarios* and *emission trading*.)

ozone - at ground level, ozone is a noxious pollutant and is the major component of smog. The source of ozone is the chemical reaction of VOCs and NO_x. Health effects of ozone are breathing problems, reduced lung function, asthma, eye irritation, stuffy nose, and reduced resistance to colds and other infections. Environmental effects of ozone can damage plants and trees. Smog also causes reduced visibility (see *criteria pollutants*).

Part 70 - U.S. EPA's interpretation of Title V of the 1990 Clean air Act Amendments, outlined in the Code of Federal Regulations, 40 CFR 70.

Part 70 permit - air emission permit issued under Minn R. 7007.0200, and 40 CFR 70.

particulate matter - fine liquid or solid particles such as dust, smoke, mist, fumes or smog found in air or emissions. (see PM₁₀).

performance test - the quantification of emissions or the determination of the physical, chemical, or aesthetic properties of those emissions from an emission unit (Minn. R. 7017.2005, subp. 4).

permit amendment - document issued by the MPCA to change conditions in a total facility permit. A permit amendment may reflect a physical change or a change in the permit requirements.

permit rule method - calculation technique used to quantify changes in emissions due to a physical change. This method is used only when the change is not a Title I modification. Minn. R. 7007.1200 describes the permit rule method.

permit shield - condition in a permit stating that if the terms of the permit are complied with, the facility will be considered to be in compliance with the applicable rule or regulation. The permit shield only applies if and where the permit specifically states that it applies (Minn. R. 7007.1800).

PM₁₀ - standard for measuring the amount of solid or liquid matter suspended in the atmosphere. Refers to the amount of particulate matter smaller than 10 micrometers in diameter. The smaller PM₁₀ particles penetrate to the deeper portions of the lung, affecting sensitive population groups such as children and people with respiratory diseases. (see *criteria pollutants*)

portable facility - emission facility capable of being easily moved, e.g., an asphalt plant.

portable source - emission source that is capable of being easily moved; e.g., a diesel generator or auxiliary power unit.

potential emissions - (see *potential to emit*)

potential to emit (PTE) - maximum amount of a pollutant that a source is capable of emitting, assuming the source runs at full capacity 24 hours per day and 365 days per year. (Minn. R. 7005.0100, subp. 35a).

Prevention of Significant Deterioration (PSD) - US EPA program that requires air emission permits to restrict emissions for new or modified sources in places where air quality meets primary and secondary ambient air quality standards. PSD is the part of NSR that applies in attainment areas.

responsible official - individual at a facility who is responsible for the accuracy and completeness of a permit application. A responsible official is also required to certify the facility's compliance status in the permit application and on an annual basis after the permit is issued (Minn. R. 7007.0100, subp. 21; see *compliance certification*).

rolling average - sometimes used as a calculation method for showing compliance with a permit limit. For example, to calculate the "12 month rolling average" for operating hours, each month you would total the operating hours for the 12 months immediately prior to the current month, and divide by 12.

rolling sum - sometimes used as a calculation method for showing compliance with a permit limit. For example, to calculate the "12 month rolling sum" for operating hours, each month you would add together the operating hours for the 12 months immediately prior to the current month. (This is very similar to the rolling average, but usually a little easier to use.)

SIC code - Standard Industrial Classification code. The SIC code is a numerical indicator of the primary type of activity at a business. For example, 5153 is a grain elevator; 2951 is an asphalt plant; etc. The first two digits indicate the broad category, the second two digits are more industry-specific.

significant level - thresholds for specific regulated pollutants used to determine if a modification is major as defined in New Source Review rules. Modifications that are major must undergo further review.

state permit - permit issued under Minn. R. 7007.0250. This is a permit for a source that is not a major source, but still needs a permit under Minnesota Rules (Minn. R. 7007.0100, subp. 24).

stationary source - place or object from which pollutants are released and which does not move around. Stationary sources include power plants, gas stations, incinerators, etc.

stipulation agreement - a negotiated settlement between a facility and the MPCA that includes a schedule of corrective action and a penalty for past noncompliance (see *compliance agreement*).

sulfur dioxide (SO₂) - heavy, pungent, colorless, gaseous air pollutant formed primarily by industrial fossil fuel combustion processes (see *criteria pollutants*).

synthetic minor limit - federally enforceable operating or emissions limitations accepted by a permit applicant that limits a facility's PTE and makes the facility a minor source under Part 70 or New Source Review regulations.

synthetic minor permit - air emission permit that contains one or more synthetic minor limits.

Title I - refers to Title I of the federal Clean Air Act, which protects ambient air quality. Title I programs include Prevention of Significant Deterioration and Nonattainment Area New Source Review; New Source Performance Standards; and National Emission Standards for Hazardous Air Pollutants.

Title I condition - permit condition that is based on a requirement of Title I of the Clean Air Act (NSR, NSPS, NESHAPs). This includes conditions required under PSD and Nonattainment Area programs, those that enable a source to avoid becoming subject to PSD or Nonattainment Area programs, and those required for achieving or maintaining NAAQS. Permit requirements set under Title I are permanent requirements (Minn. R. 7007.0100, subp. 26).

Title I modification- any change that is considered a modification under Title I of the Clean Air Act (PSD and Nonattainment Area, NSPS, HAPs). (Minn. R. 7007.0100, subp. 27)

Title III - Refers to Title III of the Clean Air Act Amendments of 1990 targeting hazardous air pollutants; Title III defines the Hazardous Air Pollutants and describes how the standards will be developed.

Title V - section of the Clean Air Act that covers the operating permit program.

total facility permit - air emission permit issued for the entire source.

volatile organic compounds (VOC) - any organic compound that participates in smog-forming reactions except for those designated by the EPA Administrator as having negligible photochemical reactivity (see *criteria pollutants*).