

Chapter 1: Introduction

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Chapter 1

Introduction

1.1 Who is this manual for—and who is it not for?

This manual provides guidance for major New Source Review (NSR) air emissions sources in Minnesota, as defined in 40 CFR § Section 52.21 (b)(1).

The manual is not intended for minor NSR sources (e.g. sources with Part 70 [Title V] permits but with PTE or allowed emissions less than NSR major thresholds and sources with registration permits and general permits).

1.2 What is covered in this manual?

The manual provides information on how to obtain a permit amendment to make modifications or changes to permit conditions at major NSR sources. It will help a major NSR source answer such questions as:

- When do I need a permit amendment for a modification at my facility or a change in my existing permit conditions?
- If a permit amendment is required, which type of amendment do I need?
- Which forms do I need to use?
- What constitutes a complete and correct permit application?
- If no permit amendment is required, what requirements may apply?

The manual also covers the new NSR provisions resulting from the December 31, 2002, NSR Reform rulemaking. The Minnesota Pollution Control Agency (MPCA), in conjunction with other stakeholders, has developed new application forms that reflect these new provisions:

- Clean units,
- Plantwide applicability limits (PALs),
- Pollution control projects (PCPs), and
- Projected actuals

The old modification forms (series MOD-xx) have been replaced with a new set of change forms (series CH-xx) that reference these new permitting options and reflect the concept that change—to existing permit conditions, as well as physical or operational changes to a source—can trigger the need for a permit amendment.

In addition, the manual lists sources that can provide more information on many of the topics, regulations, and forms covered here, including links to specific sections of the MPCA website, USEPA website, and other references. (Note that these links were current as of March, 2004.) It provides “real life” examples to demonstrate some aspects of the permitting process, as well as how-to information on performing calculations, determining applicability, and understanding forms and completing them correctly. The manual also includes a full-length case study showing how a facility that has made changes would apply for the appropriate permits. Appendix A in this manual provides a glossary of technical terms and acronyms used throughout.

1.3 Changes, Modifications, and Permit Amendments

Certain words and phrases are sometimes used interchangeably when discussing amendments to air permits. Unfortunately, these words are not necessarily interchangeable, and it is important to understand the differences between them. Words that are particularly troublesome are “change,” “modification,” and “amendment.”

A “change” at a facility can trigger the applicability of standards of performance, state or federal. It may trigger a PSD review and the need to install equipment or take limitations to comply with those requirements. It may require additional controls to meet the NAAQS or MAAQS, over and above all other limitations. In addition, sources sometimes voluntarily accept limits in order to avoid being subject to either PSD or a Part 63 NESHAP. This is what makes air quality permitting complex, and why it is important to understand when a “change” is a “modification,” and when a change or modification requires a permit amendment. (Note that, in this manual, the word “project” is sometimes used interchangeably with the word “change.”)

1.3.1. Change

Although Webster’s *Ninth New Collegiate Dictionary* defines the verb “to change” as “to undergo a modification,” in permitting and regulatory terms, a change and a modification are not the same. To understand this requires looking more closely at how change is defined in this sense.

A change can be made to a facility, source or emission unit. For example, a new emission unit can be built, a whole new source can be built, or a part of an existing emission unit (or stack or control equipment or monitoring equipment) can be replaced with something different. A change can also be made to a permit. For example, a source may wish to show compliance using a different method, or to conduct a performance test using a different method, or to have a required pressure drop or other monitoring parameter range adjusted.

Sometimes changes to a permit are needed because the rules change, even though nothing at the facility or source changes. For example, a new Part 63 NESHAP rule is promulgated by USEPA, and a particular source is subject to that rule. Even if the source already has in place all of the controls, monitoring, testing, reporting and record-keeping requirements that the new rule requires, a permit amendment may still be needed to require that these activities be used to show compliance with the new rule.

Every “change” needed to a permit requires a permit amendment. Some changes that are very minor (e.g. correcting typos, or changing the name/address/phone number of a contact person) require only an

administrative amendment. Some changes which may seem equally small (changing the method of determining compliance, but not changing the emission limitation, for example) may require a major permit amendment.

1.3.2. Modification

Some changes to a source or facility are “modifications,” but some are not. To determine whether or what type of permit amendment is required for a modification, you need to look at the definition of “modification” in federal and state rules, given below.

A definition for New Source Review (NSR) from 40 CFR § 52.21 (b)(2):

“Major modification means any physical change in or change in the method of operation of a major stationary source that would result in: a significant emissions increase (as defined in paragraph (b)(40) of this section) of a regulated NSR pollutant (as defined in paragraph (b)(50) of this section); and a significant net emissions increase of that pollutant from the major stationary source.

- (ii) Any significant emissions increase (as defined in paragraph (b)(40) of this section) from any emissions units or net emissions increase (as defined in paragraph (b)(3) of this section) at a major stationary source that is significant for volatile organic compounds shall be considered significant for ozone.
- (iii) A physical change or change in the method of operation shall not include:
 - (a) Routine maintenance, repair and replacement. Routine maintenance, repair and replacement shall include, but not be limited to, any activity(s) that meets the requirements of the equipment replacement provisions contained in paragraph (cc) of this section;
 - (b) Use of an alternative fuel or raw material by reason of an order under sections 2 (a) and (b) of the Energy Supply and Environmental Coordination Act of 1974 (or any superseding legislation) or by reason of a natural gas curtailment plant pursuant to the Federal Power Act;
 - (c) Use of an alternative fuel by reason of an order or rule under section 125 of the Act;
 - (d) Use of an alternative fuel at a steam generating unit to the extent that the fuel is generated from municipal solid waste;
 - (e) Use of an alternative fuel or raw material by a stationary source which:
 - (1) The source was capable of accommodating before January 6, 1975, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975 pursuant to 40 CFR § 52.21 or under regulations approved pursuant to 40 CFR subpart I or 40 CFR § 51.166; or
 - (2) The source is approved to use under any permit issued under 40 CFR § 52.21 or under regulations approved pursuant to 40 CFR § 51.166;
 - (f) An increase in the hours of operation or in the production rate, unless such change would be prohibited under any federally enforceable permit condition which was established after January 6, 1975, pursuant to 40 CFR § 52.21 or under regulations approved pursuant to 40 CFR subp. I or 40 CFR § 51.166.
 - (g) Any change in ownership at a stationary source.
 - (h) The addition, replacement, or use of a PCP, as defined in paragraph (b)(32) of this section, at an existing emissions unit meeting the requirements of paragraph (z) of this section. A replacement control technology must provide more effective emission control than that of the replaced control technology to qualify for this exclusion.
 - (1) When the Administrator has reason to believe that the pollution control project would result in a significant net increase in representative actual annual emissions of any criteria pollutant over levels used for that source in the most recent air quality impact analysis in the area conducted for the purpose of title I, if any, and
 - (2) The Administrator determines that the increase will cause or contribute to a violation of any national ambient air quality standard or PSD increment, or visibility limitation.
 - (i) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project, provided that the project complies with:
 - (1) The State implementation plan for the State in which the project is located, and

- (2) Other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.
- (j) The installation or operation of a permanent clean coal technology demonstration project that constitutes repowering, provided that the project does not result in an increase in the potential to emit of any regulated pollutant emitted by the unit. This exemption shall apply on a pollutant-by-pollutant basis.
- (k) The reactivation of a very clean coal-fired electric utility steam generating unit.
- (iv) This definition shall not apply with respect to a particular regulated NSR pollutant when the major stationary source is complying with the requirements under paragraph (aa) of this section for a PAL for that pollutant. Instead, the definition at paragraph (aa)(2)(viii) of this section shall apply.”

Note that “major modification” is a New Source Review term. Everything that requires a major amendment is not a “major modification,” only those that are major modifications under New Source Review.

New Source Performance Standards (NSPS) define modification in 40 CFR § 60.2 as:

“**Modification** means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.”

National Emission Standards for Hazardous Air Pollutants (NESHAPs) Part 61 define modification in 40 CFR § 61.15 (a) and (d) as:

- (a) Except as provided under paragraph (d) of this section, any physical or operational change to a stationary source which results in an increase in the rate of emission to the atmosphere of a hazardous pollutant to which a standard applies shall be considered a modification.

And

- (d) The following shall not, by themselves, be considered modifications under this part:
 - (1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category.
 - (2) An increase in production rate of a stationary source, if that increase can be accomplished without a capital expenditure on the stationary source.
 - (3) An increase in the hours of operation.
 - (4) Any conversion to coal that meets the requirements specified in section 111(a)(8) of the Act.
 - (5) The relocation or change in ownership of a stationary source. However, such activities must be reported in accordance with §61.10(c).

NESHAP Part 63 does not define modification, as MACT standards apply to both new and existing major sources of HAPs.

A definition from Minnesota state rules in Minn. R. 7007.0100, subp. 14:

“**Modification**” means:

- A. any change that constitutes a Title I modification, as defined in subpart 26; or
- B. any physical change or change in the method of operation of an emissions unit, emission facility, or stationary source that results in an increase in the emission of a regulated air pollutant. Emissions are considered to increase if there is an increase in the rate of emissions of any regulated air pollutant, or new emissions of a regulated air pollutant not previously emitted, from any unit at the source. To determine if there is an increase in the rate of emissions, the agency shall compare the pounds per hour of emissions at maximum capacity before and after the physical or operational change, using the method of calculation described in part 7007.1200. Subitems (1) to (5) are not, by themselves, considered modifications under this definition:
 - (1) a physical change or a change in the method of operation that is explicitly allowed under a permit, or allowed under a court order, consent decree, stipulation agreement, schedule of compliance, or order issued by the agency if the document states that no permit amendment is required;
 - (2) routine maintenance, repair, and replacement;
 - (3) an increase in production rate of an existing emissions unit if that increase is not in violation of a permit condition, applicable requirement, court order, consent decree, stipulation agreement, schedule of compliance, or order issued by the agency;
 - (4) an increase in the hours of operation that does not increase the rate of emissions and is not in violation of a permit condition, applicable requirement, court order, consent decree, stipulation agreement, schedule of compliance, or order issued by the agency; and
 - (5) use of an alternative fuel if the source is ordered to switch fuels by the state or federal government.

The definition above refers to subpart 26, which list federal regulatory programs developed pursuant to Title I of the CAA.

Subp. 26. Title I modification

“Title I modification” means any change that constitutes any of the following:

- A. Construction or reconstruction of a major hazardous air pollutant source as defined in Code of Federal Regulations, title 40, section 63.41, as amended, or any other rules adopted by the administrator under section 112(g)(2)(B) of the act.
- B. A new source review modification: major modification as defined in Code of Federal Regulations, title 40, section 52.21(b)(2) or 51.165(a)(1)(v), as amended, or any other rules adopted by the administrator under part C or D of the act.
- C. A new source performance standards modification: any modification as defined in Code of Federal Regulations, title 40, section 60.14, as amended, or any other rules adopted by the administrator under section 111 of the act.
- D. A hazardous air pollutant modification: any modification as defined in Code of Federal Regulations, title 40, section 61.15, as amended, or any other rules adopted by the administrator under section 112 of the act.
- E. Any other change that constitutes a modification under any provision of Title I of the act.

In summary, a modification generally means that there is a physical change or change in the method of operation that leads to an increase (calculated as defined in Minn. R. 7007.1200 subp. 2 and 3) in emissions of a regulated air pollutant. Such a change can include installation of new equipment or modification, replacement, or reconstruction of existing equipment. When the level of emissions increase exceeds a threshold (or sometimes any increase), state or federal rules apply and will dictate whether

and what type of permit amendment is required. As noted within the provided regulatory definitions, there are some exceptions both in state and federal rules.

1.3.3. Amendment

Facilities that are major under NSR typically have or will have a source-wide operating permit called a Title V permit or a Part 70 permit, referring to Title V of the CAA and 40 CFR 70, respectively. An “amendment” is a change to an existing permit. All modifications require a permit (or a permit amendment), particularly those which exceed a regulatory threshold and trigger applicability of federal rules. Because there are many and varied regulatory program thresholds, some modifications will exceed only one threshold but some will exceed multiple.

Modifications which trigger the applicability of the federal rules established under Title I of the Clean Air Act (NSPS, NESHAPs, PSD, NSR) are called “Title I modifications.” Title I modifications always require a major permit amendment. Sources which take voluntary limits to avoid triggering Title I federal regulations also always require a major permit amendment. Although they are not “Title I modifications,” the associated permit will contain “Title I conditions” that cannot be changed without going through another major permit amendment.

A definition of “Title I condition” from Minn. Rules 7007.0100, subpart 25:

“**Title I condition**” means one of the following types of permit conditions based on requirements of Title I of the act:

- A. any condition based on a requirement of a new source review program under part C (Prevention of Significant Deterioration of Air Quality) or part D (Plan Requirements for Nonattainment Areas) or a preconstruction review program under section 112(g)(2)(B) (construction or reconstruction of a major source of hazardous air pollutants) of the act and implementing state rules or federal regulations;
- B. any condition based on a source-specific determination of ambient impacts imposed for the purpose of achieving or maintaining attainment with a national ambient air quality standard and which was part of a state implementation plan approved by the USEPA or submitted to the USEPA and pending approval under section 110 of the act;
- C. any condition for which there is no corresponding underlying applicable requirement and that the stationary source has assumed to avoid being subject to a new source review program under part C (Prevention of Significant Deterioration of Air Quality) or part D (Plan Requirements for Nonattainment Areas) or a preconstruction review program under section 112(g)(2)(B) of the act or implementing state rules or federal regulations; and
- D. any condition which is part of a plan approved by the USEPA or submitted to the USEPA and pending approval under section 111(d) of the act.

Note

Changes or modifications which do not trigger a major permit amendment may still trigger moderate, minor, or administrative permit amendments under Minnesota permitting rules. The type and magnitude of the change determines the type of permit amendment required. Working through the Change Forms is the best way to determine when a permit amendment is required and which type is required. Even if no permit amendment is required, other requirements may still exist. The existing permit, whether it be Title V (Part 70) or another state permit, has continuing requirements for testing, monitoring, reporting, and record keeping. Records may need to be kept, and reports or notifications to the MPCA may be required, even if a facility or source has no permit.

However, when more than one change is made in any consecutive 12-month period, you must be careful to demonstrate that these changes are not elements of an overall single project and that these changes are not related to one another (see Appendix B regarding upcoming USEPA policy on project aggregation).

Three examples illustrate how to determine whether multiple changes should be considered together as a single change/project.

1. Changes are made to two different processing lines which produce different products. Prepare documentation that these changes are unrelated by referring to the production records.
2. Changes are made to the same processing line—one change that improves efficiency and one that is mandated by state or federal safety regulations. Again, prepare documentation that these changes are unrelated by referring to the regulations and the authorization for expenditures which explains the rationale for each change.
3. Changes are made to the same process line in the same year to improve production in different ways. It is likely that these changes could be viewed as related changes and the sum of the emission changes should be calculated to determine whether or not PSD thresholds are exceeded.

Note

Decisions that changes are unrelated need to be documented at the time of the change. A reminder: as USEPA and state officials inspect your facility, they may ask to see work orders or authorization of capital expenditures and associated documentation, as well as any permitting documentation, when multiple changes take place within a limited timeframe (say, 12 months). The permitting documentation needs to reflect the business documentation and be consistent with it.

1.4 How this Manual is Organized

Chapter 2 describes ways to perform and document calculations; subsequent chapters are designed to guide users through the series of "Change Forms" developed by the MPCA and affected stakeholders. These forms help a facility determine whether a permit amendment is required and, if so, what type of amendment is required.

The forms begin with a determination of whether the change is subject to federal Title I conditions (as defined above). Because each of the several Title I conditions is quite complex, there is one or more forms for each condition, with multiple questions and often multiple calculations that need to be performed to determine whether those federal rules apply. Chapter 3 begins this exploration.

Chapter 7 of the manual discusses processes and procedures for changes which do not trigger a major permit amendment. Some changes will trigger a need for another permit amendment (e.g. a moderate permit amendment). **All** relevant changes will require some form of documentation of the decision regarding why a permit amendment is not needed, and some may require additional recordkeeping and reporting.

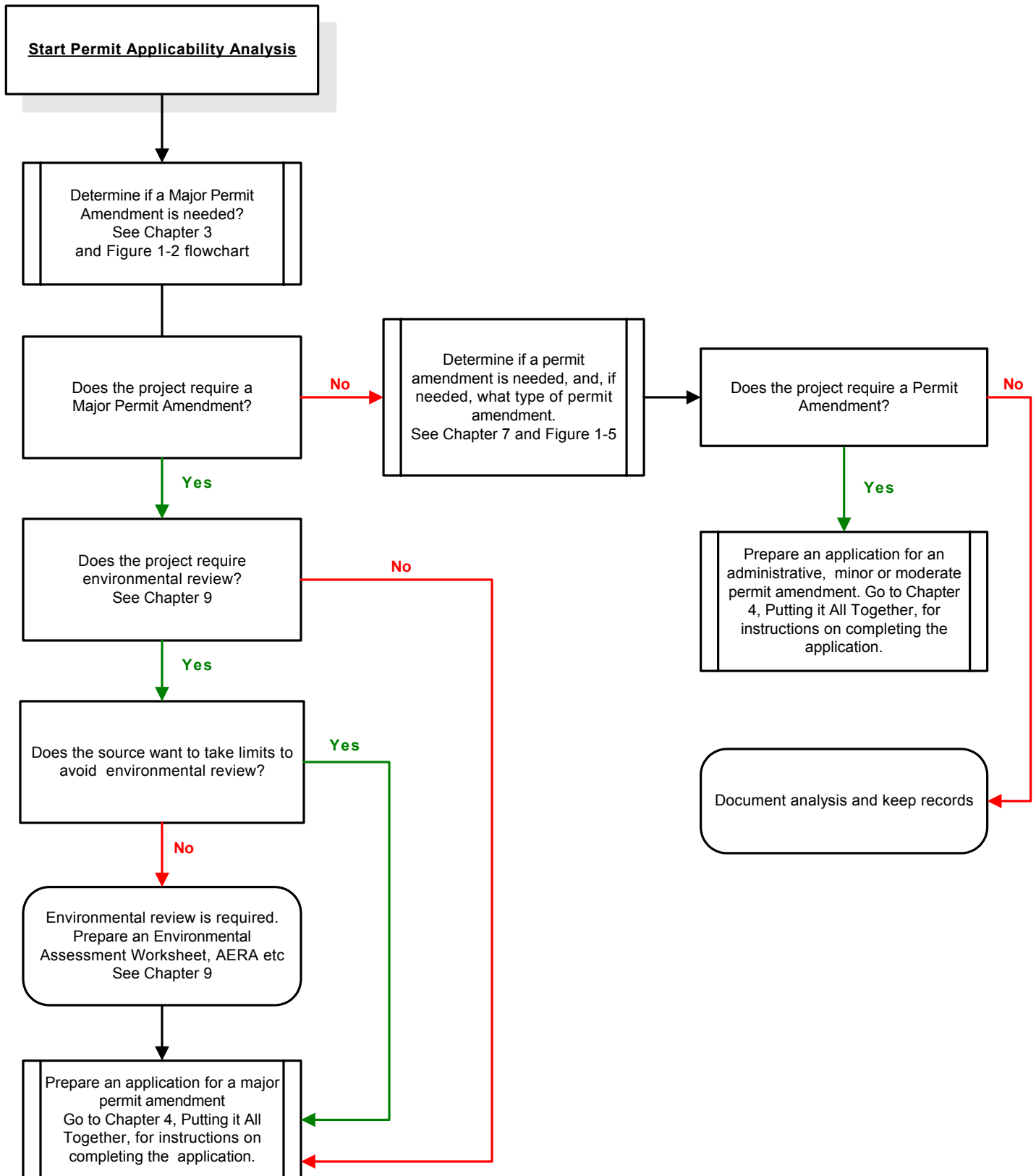
The manual also includes, in Chapters 8, 9 and 10, information on air quality modeling, environmental review, and Air Emission Risk Assessment (AERA). Changes at major air emission sources may trigger the applicability of these requirements as well.

Finally, Chapter 11 contains an illustrative example of how the process works on a fictitious source. Copies of completed forms for this illustrative example are included in Appendix E.

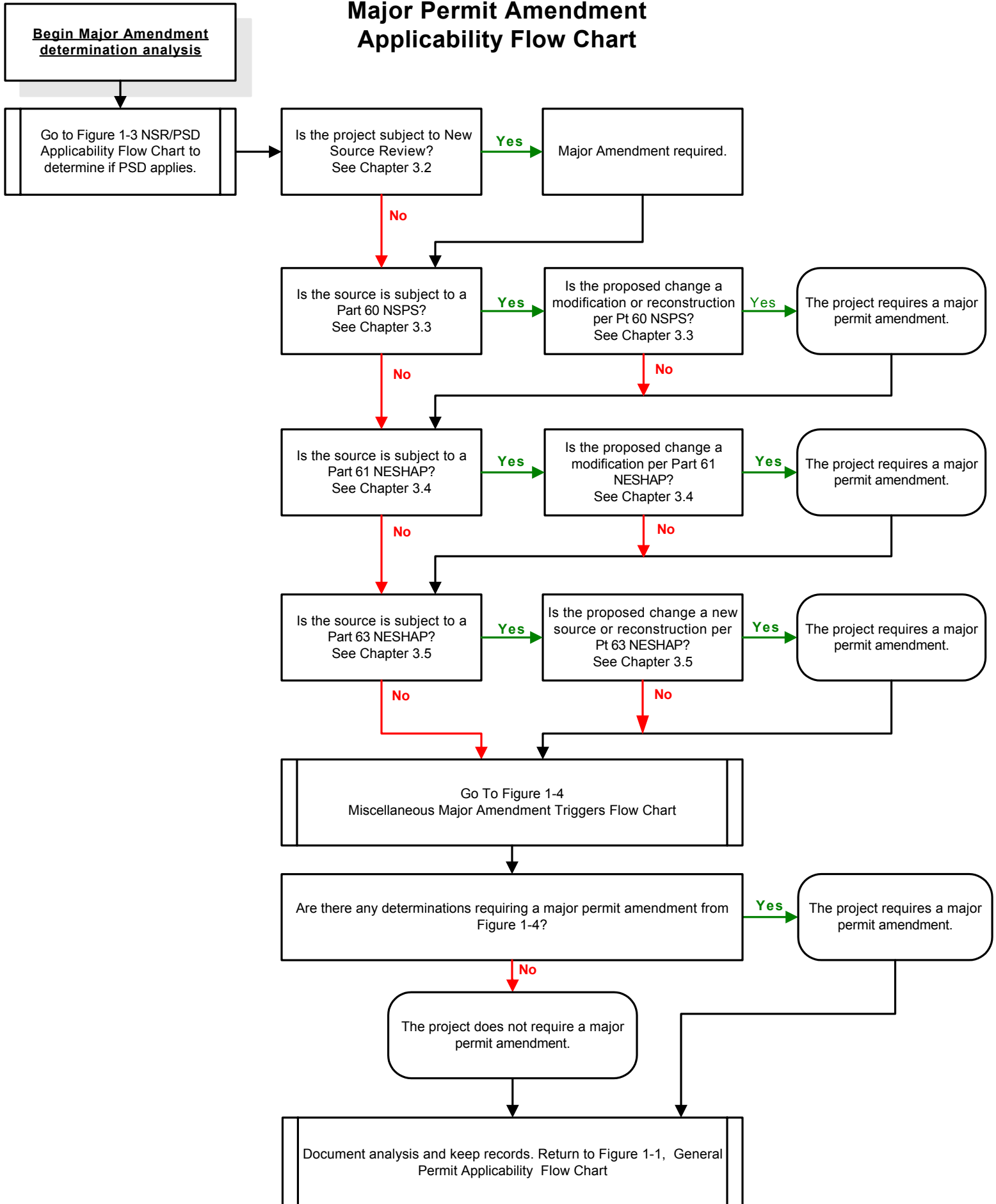
Other appendices contain information that may be helpful in working through the manual. Appendix A contains a list of acronyms and a glossary. Appendix B provides an update on the status of NSR reforms, which are currently in appeal through the judicial process. Appendix C contains guidance on what information may be designated as confidential. Appendix D contains a copy of the "Change" forms, also available on the MPCA website: <http://www.pca.state.mn.us/air/permits/forms.html>.

The flow charts on the following pages may be helpful in working through the decision whether or not a permit amendment is required and what type of amendment is needed. Each decision points to the specific chapter of the manual which covers the amendment or form needed for that change.

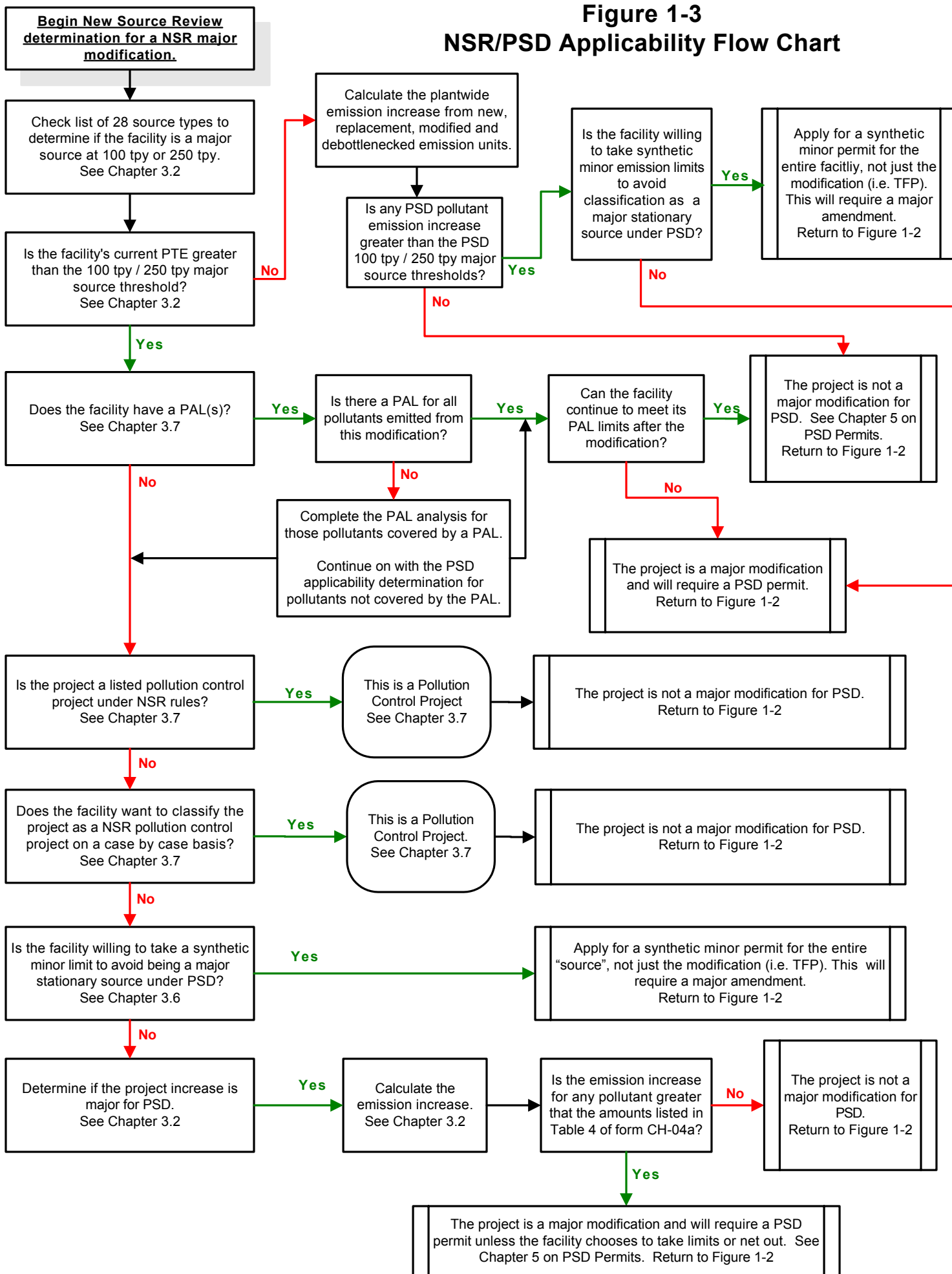
Figure 1-1 General Permit Applicability Flow Chart



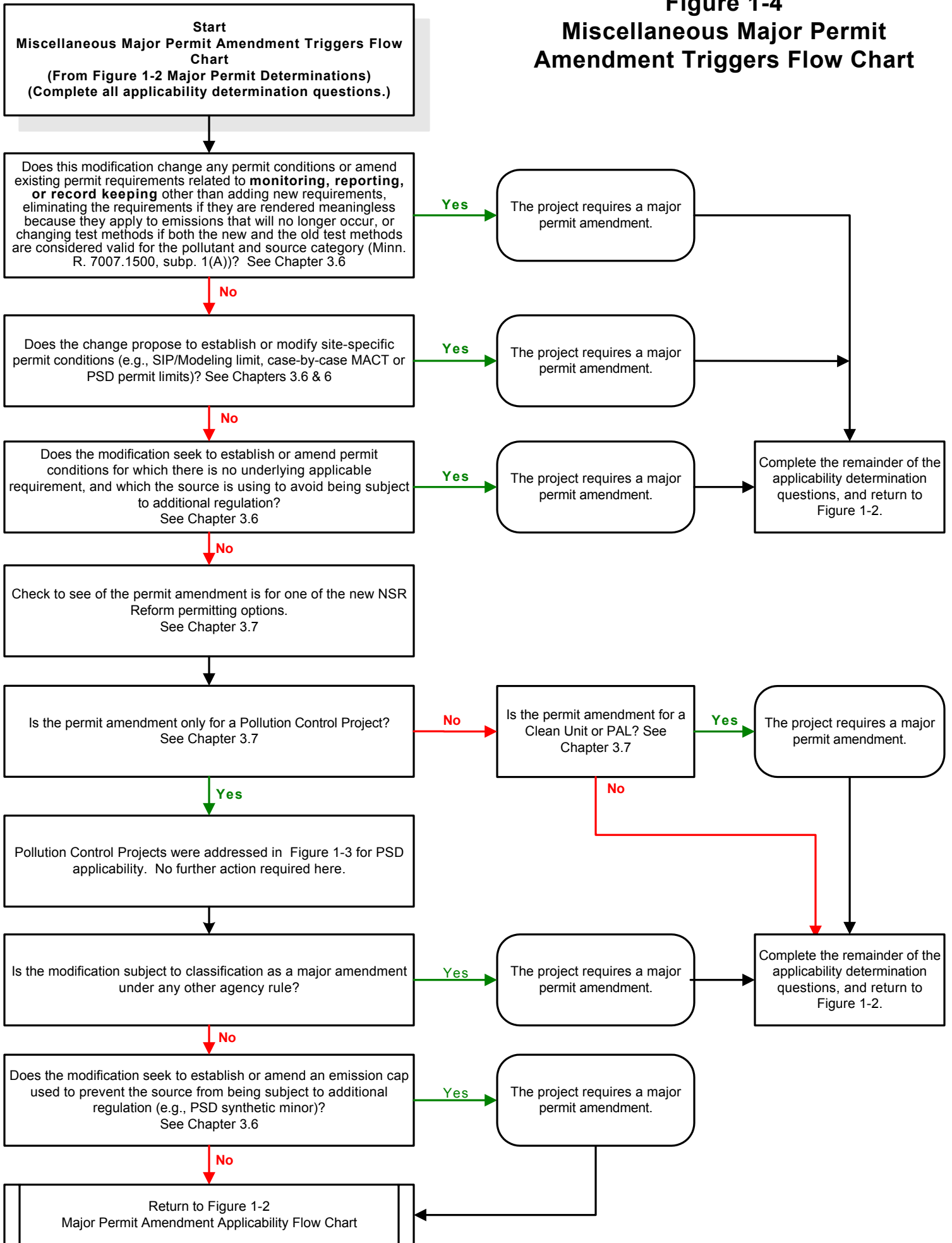
**Figure 1-2
Major Permit Amendment
Applicability Flow Chart**



**Figure 1-3
NSR/PSD Applicability Flow Chart**



**Figure 1-4
Miscellaneous Major Permit
Amendment Triggers Flow Chart**



**Figure 1-5
Non-Major Permit Amendment Applicability
Flow Chart**

