

Statement of Basis

for the DRAFT CAAPP Permit for:

Source Name:

Northwestern Memorial Hospital

Statement of Basis No.: 98020020-1311

I.D. No.: 031600FMX

Permit No.: 98020020

Date Prepared: February 7, 2014

Permitting Authority:

Illinois Environmental Protection Agency
Bureau of Air, Permit Section
217/785-1705

This Statement of Basis is being provided to USEPA and any interested parties as required by Section 39.5(8)(b) of the Illinois Environmental Protection Act.

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PREFACE

Reason For This Document

This document is a requirement of the permitting authority in accordance with 502(a) of the Clean Air Act, 40 CFR 70.7(a)(5), and Section 39.5(8)(b) of the Illinois Environmental Protection Act. Section 39.5(8)(b) of the Illinois Environmental Protection Act states the following:

“The Agency shall prepare a statement that sets forth the legal and factual basis for the Draft CAAPP permit conditions, including references to the applicable statutory or regulatory provisions.”

Purpose Of This Document

The purpose of this Statement of Basis is to provide discussion regarding the development of this Draft CAAPP Permit. This document would also provide the permitting authority, the public, the source, and the USEPA with the applicability and technical matters that form the basis of the Draft CAAPP Permit.

Summary Of Historical Actions Leading Up To Today's Permitting Action

Since the last Renewal CAAPP Permit issued on March 21, 2007, the source has not been issued any modifications or amendments.

Limitations

This Statement of Basis is not enforceable and only sets forth the legal and factual basis for the Draft CAAPP Permit Conditions (Chapters I and II). Chapter III contains supplemental material that would assist in educating interested parties about this source and the Draft CAAPP Permit. The Statement of Basis does not shield the source from enforcement actions or its responsibility to comply with existing or future applicable regulations. Nor does the Statement of Basis constitute a defense to a violation of the Federal Clean Air Act or the Illinois Environmental Protection Act including implementing regulations.

This document does not purport to establish policy or guidance.

INTRODUCTION

The Clean Air Act Permit Program (CAAPP) is the operating permit program established in Illinois for major stationary sources as required by Title V of the federal Clean Air Act and Section 39.5 of the Illinois Environmental Protection Act. The Title V Permit Program (CAAPP) is the primary mechanism to apply the various air pollution control requirements established by the Clean Air Act to major sources, defined in accordance with Title V of the Clean Air Act. The Draft CAAPP Permit contains conditions identifying the state and federal applicable requirements that apply to the source. The Draft CAAPP Permit also establishes the necessary monitoring and compliance demonstrations. The source must implement this monitoring to demonstrate that the source is operating in accordance with the applicable requirements of the permit. The Draft CAAPP Permit identifies all applicable requirements for the various emission units as well as establishes detailed provisions for testing, monitoring, recordkeeping, and reporting to demonstrate compliance with the Clean Air Act. Further explanations of the specific provisions of the Draft CAAPP Permit are contained in the following Chapters of this Statement of Basis.

In addition, the Illinois EPA has committed substantial resources and effort in the development of an acceptable Statement of Basis (this document) that would meet the expectations of USEPA, Region 5. As a result, this document contains discussions that address applicability determinations, periodic monitoring, streamlining, prompt reporting, and SSM authorizations (as necessary). These discussions involve, where necessary, a brief description and justification for the resulting conditions and terms in this Draft CAAPP Permit. This document begins by discussing the legal basis for the contents of the Draft CAAPP Permit, moves into the factual description of the permit, and ends with supplemental information that has been provided to further assist with the understanding of the background and genesis of the permit content.

It is Illinois EPA's preliminary determination that this source's Permit Application meets the standards for issuance of a "Final" CAAPP Permit as stipulated in Section 39.5(10)(a) of the Illinois Environmental Protection Act (see Chapter I - Section 1.2 of this document). The Illinois EPA is therefore initiating the necessary procedural requirements to issue a Final CAAPP Permit. The Illinois EPA has posted the Draft CAAPP permit and this Statement of Basis on USEPA website:

<http://www.epa.gov/reg5oair/permits/ilonline.html>

CHAPTER I – LEGAL BASIS FOR THE PERMIT AND PERMIT CONDITIONS

1.1 Legal Basis for Program

The Illinois EPA's state operating permit program for major sources established to meet the requirements of 40 CFR Part 70 are found at Section 39.5 of the Illinois Environmental Protection Act [415 ILCS 5/39.5]. The program is called the Clean Air Act Permitting Program (CAAPP). The underlying statutory authority is found in the Illinois Environmental Protection Act at 415 ILCS 5/39.5. The CAAPP was given final full approval by USEPA on December 4, 2001 (see 66 FR 62946).

1.2 Legal Basis for Issuance of CAAPP Permit

In accordance with Section 39.5(10)(a) of the Illinois Environmental Protection Act, the Illinois EPA may only issue a CAAPP Permit if all of the following standards for issuance have been met:

- The applicant has submitted a complete and certified application for a permit, permit modification, or permit renewal consistent with Sections 39.5(5) and (14) of the Illinois Environmental Protection Act, as applicable, and applicable regulations (Section a. below);
- The applicant has submitted with its complete application an approvable compliance plan, including a schedule for achieving compliance, consistent with Section 39.5(5) of the Illinois Environmental Protection Act and applicable regulations (Section b. below);
- The applicant has timely paid the fees required pursuant to Section 39.5(18) of the Illinois Environmental Protection Act and applicable regulations (Section c. below); and
- The applicant has provided any additional information as requested by the Illinois EPA (Section d. below).

a. Application Status

The source submitted an application for a Renewal CAAPP Permit on January 28, 2011. The source is currently operating under an application shield resultant from a timely and complete renewal application submittal. This Draft CAAPP Permit addresses application content and necessary revisions to meet the requirements for issuance of the permit.

b. Present Compliance Status

At the time of this Draft CAAPP Permit, there were no pending State or Federal enforcement actions against the source; therefore, a Compliance Schedule is not required for this source. The source submitted an approvable Compliance Plan as part of its Certified Permit Application. The source has certified compliance with all applicable rules and regulations. In addition, the draft permit requires the source to certify its compliance status on an annual basis.

c. Payment of Fees

The source is current on payment of all fees associated with operation of the emission units.

d. Additional Information

The source provided all the necessary additional application material as requested by the Illinois EPA.

1.3 Legal Basis for Conditions in the CAAPP Permit

This industrial source is subject to a variety of Federal and SIP regulations, which are the legal basis for the conditions in this permit (see Sections a. and b. below). Also, the CAAPP provides the legal basis for additional requirements such as periodic monitoring, reporting, and recordkeeping. The following list summarizes those regulations that form the legal basis for the conditions in this Draft CAAPP Permit and are provided in the permit itself as the origin and authority.

a. Applicable Federal Regulations

This source operates emission units that are subject to the following Federal regulations.

- 40 CFR Part 60 - Subpart A, NSPS General Provisions
- 40 CFR Part 60 - Subpart Dc, Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
- 40 CFR Part 60 - Subpart IIII, Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
- 40 CFR Part 63 - Subpart A, NESHAP General Provisions
- 40 CFR Part 63 - Subpart ZZZZ, National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- 40 CFR Part 63 - Subpart WWWW, National Emission Standards for Hospital Ethylene Oxide Sterilizers
- 40 CFR Part 82 - Subpart F, Ozone Depleting Substances

b. Applicable SIP Regulations

This source operates emission units that are subject to the following SIP regulations:

- 35 IAC Part 201 - Permits And General Provisions
- 35 IAC Part 205 - Emissions Reduction Market System
- 35 IAC Part 212 - Visible And Particulate Matter Emissions
- 35 IAC Part 214 - Sulfur Limitations
- 35 IAC Part 216 - Carbon Monoxide Emissions
- 35 IAC Part 217 - Nitrogen Oxides Emissions
- 35 IAC Part 218 - Organic Material Emis Stnds And Lmtns For The Chicago Area
- 35 IAC Part 244 - Episodes
- 35 IAC Part 254 - Annual Emissions Report

c. Other Applicable Requirements

The source also has several applicable requirements that are based on SIP approved permits, which are listed and identified in Chapter II Section 2.8.

CHAPTER II - FACTUAL BASIS FOR THE PERMIT AND PERMIT CONDITIONS

2.1 Source History

There is no significant source history warranting discussion for this source.

2.2 Description of Source

SIC Code: 8062
 County: Cook

The source is a general hospital, which provided healthcare services. The source operates boilers and engines to provide for steam generation and backup electrical supply as needed by the source. The source also operates Ethylene Oxide Sterilizers used to sterilize medical equipment as need at the source.

The source contains the following processes:

<i>Emission Units</i>	<i>Description</i>
Boilers: Natural Gas-Firing Mode (Subject to NSPS Dc)	The five boilers constructed in 1997 and the three boilers constructed in 2006 are subject to the NSPS for Small Industrial-Commercial-Institutional Steam Generating Units. These units are capable of firing natural gas or fuel oil, separately. The applicable regulations for the separate modes of operation are addressed in separate sections of the permit, Section 4.1 and Section 4.2, natural gas mode and fuel oil mode, respectively. These boilers are used to supply steam, heat and/or power for the needs of this source.
Boilers: Fuel Oil Firing Mode (Subject to NSPS Dc)	
Natural Gas-Fired Boilers	These five small boilers are fired using natural gas. They are used to supply steam, heat and/or power for the needs of this source.
Emergency Generator Engines (Subject to NSPS IIII)	The two diesel fired RICE in this section are subject to the NSPS for Compression Ignition RICE. These engines are used for backup purposes (e.g., power supply outages) only.
Emergency Generator Engines	The eight diesel fired RICE in this section are used for backup purposes (e.g., power supply outages) only.
Ethylene Oxide Sterilizers	Four ethylene oxide (ETO) sterilizers are typical sterilizers which are standard in local hospitals and use ethylene oxide to accomplish the sterilization of medical devices and other materials for use in operating rooms and patient care. Materials and devices are placed in the sterilization chamber, the chamber is closed, and ethylene oxide gas is introduced. After a specified time, the chamber is purged of residual ethylene oxide to an abator. An abator is a device through which ambient air is pulled though an electric heater. The heated air then passes through a catalytic cell inlet where the residual ethylene oxide is fed into the air stream through a solenoid valve and an injection manifold. As the ethylene oxide enters the heated air stream it is diluted with air before it enters the catalytic cell where the ethylene oxide is catalytically oxidized to carbon dioxide and water.

2.3 Single Source Status

This source does not have any collocated facilities that would be considered a single source with this facility based on information found in the certified application.

2.4 Ambient Air Quality Status for the Area

The source is located in an area that is currently designated nonattainment for the National Ambient Air Quality Standards for ozone (marginal nonattainment) and attainment or unclassifiable for all other criteria pollutants (carbon monoxide, lead, nitrogen dioxide, PM_{2.5}, PM₁₀, sulfur dioxide). (See 40 CFR Part 81 - Designation of Areas for Air Quality Planning Purposes)

2.5 Source Status

The source requires a CAAPP permit because this source is considered major (based on its PTE) for the following regulated pollutant(s): nitrogen oxides (NO_x)

This source is considered a natural minor for the following regulated pollutants: PM₁₀, PM_{2.5}, volatile organic material (VOM), carbon monoxide (CO), sulfur dioxide (SO₂) and/or hazardous air pollutant (HAP).

Based on available data, this source is not a major source of emissions for GHG. Northwestern Memorial Hospital voluntarily submitted data on its emissions of GHG in its 2012 AER, reporting actual annual emissions of GHG of less than 25,000 tons per year.

This source is not currently subject to any "applicable requirements," as defined by Section 39.5(1) of the Act, for emissions of greenhouse gases (GHG) as defined by 40 CFR 86.1818-12(a), as referenced by 40 CFR 52.21(b)(49)(i). There are no GHG-related requirements under the Illinois Environmental Protection Act, Illinois' State Implementation Plan, or the Clean Air Act that apply to this facility, including terms or conditions in a Construction Permit addressing emissions of GHG or BACT for emissions of GHG from a major project at this facility under the PSD rules. In particular, the USEPA's Mandatory Reporting Rule for GHG emissions, 40 CFR Part 98, does not constitute an "applicable requirement" because it was adopted under the authority of Sections 114(a)(1) and 208 of the Clean Air Act. This permit also does not relieve the Permittee from the legal obligation to comply with the relevant provisions of the Mandatory Reporting Rule for this facility.

2.6 Annual Emissions

The following table lists annual emissions (tons) of criteria pollutants for this source, as reported in the Annual Emission Reports (AER) sent to the Illinois EPA:

<i>Pollutant</i>	<i>2012</i>	<i>2011</i>	<i>2010</i>
CO	16.21	13.28	12.49
NO _x	21.53	17.39	16.40
PM	1.49	1.15	1.15
SO ₂	0.42	0.32	0.84
VOM	1.11	0.84	0.84

<i>Pollutant</i>	<i>2012</i>	<i>2011</i>	<i>2010</i>
CO _{2E}	21,532.3	18,248.9	17,190.0
HAP (top)	0.42	0.35	0.31

2.7 Fee Schedule

The following table lists the approved annual fee schedule (tons) submitted in the Source's permit application:

<i>Pollutant</i>	<i>Tons/Year</i>
Volatile Organic Material (VOM)	23.09
Sulfur Dioxide (SO ₂)	18.08
Particulate Matter (PM)	18.26
Nitrogen Oxides (NO _x)	163.82
HAP, not included in VOM or (HAP)	---
Total	223.24

2.8 SIP Permit Facts (T1 Limits)

CAAPP Permits must address all "applicable requirements," which includes the terms and conditions of preconstruction permits issued under regulations approved by USEPA in accordance with Title I of the CAA (See definition of applicable requirements in Section 39.5(1) of the Illinois Environmental Protection Act). Preconstruction permits, commonly referred to in Illinois as Construction Permits, derive from the New Source Review ("NSR") permit programs required by Title I of the CAA. These programs include the two major NSR permit programs: (1) the Prevention of Significant Deterioration ("PSD") program¹ and (2) the nonattainment NSR program.² These programs also encompass state construction permit programs for projects that are not major.

In the CAAPP or Illinois's Title V permit program, the Illinois EPA's practice is to identify requirements that are carried over from an earlier Title I permit into a New or Renewed CAAPP Permit as "TI" conditions (i.e., Title I conditions). Title I Conditions that are revised as part of their incorporation into a CAAPP Permit are further designated as "TIR." Title I Conditions that are newly established through a CAAPP Permit are designated as "TIN." It is important that Title I Conditions be identified in a CAAPP Permit because these conditions will not expire when the CAAPP Permit expires. Because the underlying authority for Title I Conditions comes from Title I of the CAA and their initial establishment in Title I Permits, the effectiveness of T1 Conditions derives from Title I of the CAA rather than being linked to Title V of the A. For "changes" to be made to Title I Conditions, they must either cease to be applicable based on obvious circumstances, e.g., the subject emission unit is permanently shut down, or appropriate Title I procedures must be followed to change the conditions.

- Newly Issued Construction Permits:

<i>Permit No.</i>	<i>Date Issued</i>	<i>Subject</i>
06010025	December 7, 2006	Generation of Steam for Power & Heat - New Prentice Women's Hospital
12100011	February 8, 2013	Outpatient Care Pavilion

- The following table lists the T1N Limits issued by the Illinois EPA and require incorporation into the CAAPP Permit prior to the proposal and issuance of this Draft CAAPP Permit.

<i>T1 Type</i>	<i>Condition</i>	<i>Subject</i>
T1N	Section 4.2 Condition 4.2.2(h) (i) (C) (II & III)	NESHAP Avoidance Limitations
T1N	Section 5 Condition 5.1(b) (ii) (A)	State NO _x Requirements Avoidance Limitations

- Extraneous or Obsolete T1 Conditions:³

<i>Construction Permit No.</i>	<i>Condition Number</i>	<i>Subject</i>
97080080	3(c)*	Heating Plant
97080080	3(a)**	Heating Plant
97080080	3(b)**	Heating Plant

* The limits in the 97080080 are now obsolete. The limits on the engines that are in 97080080 were given limits in Construction Permit #06010025 that are more stringent than the limits established by 97080080.

** The limits in the 97080080 for the boilers are obsolete. It is apparent that the limits established by Construction Permit #06010025 were intended to replace the limits established by 97080080, as they are conflicting in several ways and cannot work concurrently. Therefore, it has been determined that the 06010025 limitations will replace the 97080080 limits.

CHAPTER III - SUPPLEMENTAL DISCUSSIONS REGARDING THE PERMIT

The information provided in this Chapter of the Statement of Basis is being provided to assist interested parties in understanding what additional information may have been relied on to support this draft CAAPP permit.

3.1 Environmental Justice Discussions

While the Illinois EPA is sensitive to the location of this facility in a potential EJ community, Title V does not provide for substantive emission control requirements beyond those arising under currently applicable regulations. Thus, when issuing a CAAPP Permit for this facility, the Illinois EPA does not have the authority to impose additional emission control requirements to reduce emissions beyond the levels provided for by applicable state and federal regulations. At the same time, CAAPP Permits do not allow for additional emissions.

Having a facility subject to a CAAPP Permit provides benefits for air quality, the public and the environment generally. CAAPP Permits require more reporting on a facility's compliance status than is required by underlying state operating permits. For example, the requirements for semi-annual reports for all monitoring and annual compliance certifications only become applicable upon the effectiveness of a CAAPP Permit. In addition, CAAPP Permits generally provide clarity and awareness of applicable regulations and the mechanisms by which sources must comply with these regulations. CAAPP Permits add to the compliance checks put on facilities. Where a facility has outstanding compliance deficiencies, CAAPP Permits may establish compliance schedules and other additional conditions for monitoring and reporting.

With this Statement of Basis, the Illinois EPA has made very clear the applicable emission limitations, standards, and other enforceable terms and conditions, as well as attendant monitoring, reporting, recordkeeping, and certifications to assure compliance. The Illinois EPA has provided an explanation of same, as well as a justification for why the conditions that assure compliance are appropriate. The level of detail in the Statement of Basis is atypically involved and is in recognition of the public interest in the permitting of this complex facility in a potential EJ community. The Statement of Basis has been provided to the USEPA for its review. The extremely detailed explanation of the requirements, particularly Periodic Monitoring, applicable to this source is intended to further meaningful public participation.

3.2 Emission Testing Results

The source, at the time of this draft permit, has not been required to perform any emissions testing.

3.3 Compliance Reports (Annual Certifications, Semiannual Monitoring, NESHAP, etc.)

A review of the source's compliance reports demonstrates the sources ability to comply with all applicable requirements.

3.4 Field Inspection Results

A review of the source's latest field inspection report dated 2/27/2013 demonstrates the source's ability to comply with all applicable requirements.

3.5 Historical Non-Compliance

There is no historical non-compliance for this source.

3.6 Source Wide Justifications and Rationale

Applicable Requirements Summary		
Applicable Requirement	Type	Location
Fugitive Particulate Matter (35 IAC 212.301 and 35 IAC 212.314)	Applicable Standard	See the Permit, Condition 3.1(a)

Rationale and Justification for Periodic Monitoring

Periodic Monitoring is sufficient for the source because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Fugitive particulate matter (PM) from this type of source will be extremely minimal. It can be determined that compliance with this applicable regulation can be assured simply by the source category (e.g., there is no material handling activities that would result in any fugitive PM).

Non-Applicability Discussion

Complex source-wide non-applicability determinations were not made for this source.

Prompt Reporting Discussion

Prompt reporting of deviations for source wide emission units has been established as 30 days. See rationale in Chapter III Section 3.9.

3.7 Emission Unit Justifications and Rationale

a. Boilers: Natural Gas-Firing Mode (Subject to NSPS Dc)		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
Opacity Requirement (35 IAC 212.123)	Applicable Standard	See the Permit, Condition 4.1.2(a) (i) (A)
PM Requirements (T1)	Applicable Limits	See the Permit, Conditions 4.1.2(b) (i) (A & B)
SO ₂ Requirements (T1)	Applicable Limits	See the Permit, Conditions 4.1.2(c) (i) (A & B)
VOM Requirements (T1)	Applicable Limits	See the Permit, Conditions 4.1.2(d) (i) (A & B)
CO Requirement (35 IAC 216.121)	Applicable Standard	See the Permit, Condition 4.1.2(e) (i) (A)
CO Requirements (T1)	Applicable Limits	See the Permit, Conditions 4.1.2(e) (i) (B & C)

a. Boilers: Natural Gas-Firing Mode (Subject to NSPS Dc)		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
NO _x Requirements (T1)	Applicable Limits	See the Permit, Conditions 4.1.2(f) (i) (A & B)
HAP Requirements (T1)	Applicable Limits	See the Permit, Conditions 4.1.2(g) (i) (A & B)
Operational and Production Requirements	Applicable Operational Requirements	See the Permit, Conditions 4.1.2(h) (i) (A-C)
Work Practice Requirement (40 CFR 60.11(d))	Applicable Work Practice	See the Permit, Condition 4.1.2(i) (i) (A)

The likelihood of natural gas engines violating NO_x, CO, PM, SO₂, and/or VOM standards or limitations is extremely small, based on the margin of compliance routinely observed from emission tests on similar units. The primary assurance is the requirement to fire only pipeline quality natural gas in the combustion equipment even though the applicable emission standards or limitations may be based on combustion of higher polluting fuels (such as fuel oil or coal). This is because of the inherent qualities of natural gas found in the distribution pipeline and the need to meet tariff requirements on the transmission and distribution of this commodity. Therefore, if the source only burns pipeline quality natural gas, and complies with the applicable limits on hours of operation, emissions are expected to be substantially lower than the applicable standards since the standards are based on worst-case operation using higher polluting fuels. The continued requirement for the source to keep records of the hours of operation and fuel usage of the emission units and to determine emissions on a monthly and annual basis is sufficient to determine compliance when coupled with the additional monitoring discussed below. Standard emission factors for combustion of natural gas do vary based on the type of emission units but by requiring the source to maintain the type of fuel used, maintain inspection records, and maintain maintenance and repair logs there is a reasonable assurance the emission units are being operated properly and therefore would result in emissions being minimized as well as engine efficiency being maintained, thereby reducing the likelihood of excess emissions. This additional monitoring also ensures that the emission factors used to calculate emissions are continued to be representative of near design operation. To calculate emissions, the source may use source-specific emission factors, if available, or EPA/Industry published standard emission factors. These records would help the Illinois EPA determine if the emission units are being operated properly and therefore would result in negligible products of incomplete combustion.

Rationale/Justification for Periodic Monitoring of Visible Emissions (Opacity)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Annual observations of opacity using Method 22, including records of these observations, are sufficient to verify compliance with the 30% opacity limit for these boilers that combust only natural gas. The likelihood of natural gas boilers violating opacity is extremely minimal. It should be noted that the source is required to maintain the type of fuel used and maintain maintenance and repair logs of these natural gas

boilers. These records would help the Illinois EPA determine if the natural gas boilers are being operated properly and therefore would result in opacity being minimized. Because the boilers use pipeline quality natural gas, which contains very low concentrations of PM, coupled with operational inspections, ensure boilers efficiencies to reduce the likelihood of visible emissions.

Rationale/Justification for Periodic Monitoring of Particulate Matter Emission

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Increased PM emissions may result from poor air/fuel mixing or maintenance problems. PM emissions may also result from carryover of noncombustible trace constituents in the fuel and any sulfur present in the natural gas if that source of natural gas is -sour- or -raw-. Opacity is used as a surrogate for PM emissions and provides qualitative information on the operation and maintenance of the combustion equipment. In other words, data on the relationship between opacity and PM emissions suggests an indirect increase in opacity with an increase in PM. Pipeline quality natural gas has a very low ash content given the low carbon to hydrogen ratio and requirement on solids. In general, natural gas fired emission units do not produce significant amounts of PM. Emissions of PM are minimized by combustion controls and the use of clean fuels (inherent quality of natural gas). Annual observations of opacity, including records of these observations, are sufficient to verify compliance with the 30% opacity limit for emission units that combust pipeline quality natural gas given its inherent nature (i.e.: low to no ash content and de minimus levels of trace metals). Opacity can also be used as a sufficient means of demonstrating compliance for PM emissions. Since PM emissions are likely in the PM_{2.5} or less range (the range at which particulates are likely to form visible emissions), the proposed periodic monitoring is sufficient for these emission units because opacity is a simple and cost effective means to demonstrate compliance given there is a small likelihood of an exceedance, the margin of compliance routinely observed from emission tests on similar units, and the monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable PM limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the PM emissions can be divided by hours of operation to give PM emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Sulfur Emissions

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- SO₂ emissions from combustion equipment are highly dependent on sulfur content of the fuel. The likelihood of natural gas combustion violating the sulfur limit is minimal given that pipeline quality natural gas has a sulfur content limited to levels that would result in SO₂ emissions less than the limit. Pursuant to 40 CFR 72.2, to be considered pipeline quality natural gas it must contain 0.3 grains or less of H₂S per 100 standard cubic feet (less than 5 ppm H₂S) and the H₂S must constitute at least 50% (by weight) of the total sulfur in the fuel. USEPA has stated that "...in general, any 'natural gas' with less than or equal to 1.0 gr of H₂S/100 scf will meet the requirement that H₂S constitute greater than or equal to 50% of the total sulfur in the fuel." USEPA further states there is no useful purpose served for fuels that contain less than 2 gr of H₂S/scf when H₂S constitutes less than 50% of the total sulfur in the fuel and thus concluded that the adverse effects from firing gaseous fuels meeting these specifications on SO₂ are de minimus at best and would result in no increase in reported SO₂ emissions. Thus, it is reasonable to conclude that the resulting emissions of SO₂ will easily be less than the 2,000 ppm limit (@ 50% H₂S and 100% conversion to SO₂ ~ 12 ppm SO₂).
- With the required records, a calculation can be made to ensure compliance with the applicable SO₂ limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the SO₂ emissions can be divided by hours of operation to give SO₂ emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Organic Material Emission

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Improperly tuned equipment operating at off-design- levels decrease combustion efficiency resulting in increased CO and VOC emissions. Therefore, the likelihood of natural gas combustion violating CO or VOC standards/limits is unlikely given that pipeline quality natural gas has a reliable carbon to hydrogen composition (> 75% methane), stable distribution and firing system and since the standards/limits are typically based on worst-case operating conditions. The periodic monitoring chosen is one in which combustion practices that promote time, temperature and turbulence (3T's of combustion) have been incorporated so as to ensure the equipment performs at near design levels. Since these emissions are dependent on the operability of the equipment to perform,

an additional inspection requirement is included to maintain and demonstrate equipment performance. The proposed periodic monitoring is sufficient for these emission units because there is a small likelihood of an exceedance based on the inherent nature (discussed above) of natural gas, the margin of compliance routinely observed from emission tests on similar units, and the monitoring is consistent with other similar emission units in these source categories.

- With the required records, a calculation can be made to ensure compliance with the applicable VOM limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the VOM emissions can be divided by hours of operation to give VOM emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.
- Additionally, the source is required to perform a "combustion evaluation" (Condition 4.1.2(i)(ii)(B)). This evaluation will further ensure that the boilers are operating properly, and thereby minimizing emissions.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions (35 IAC 216.121)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Improperly tuned equipment operating at off-design- levels decrease combustion efficiency resulting in increased CO and VOC emissions. Therefore, the likelihood of natural gas combustion violating CO or VOC standards/limits is unlikely given that pipeline quality natural gas has a reliable carbon to hydrogen composition (> 75% methane), stable distribution and firing system and since the standards/limits are typically based on worst-case operating conditions. The periodic monitoring chosen is one in which combustion practices that promote time, temperature and turbulence (3T's of combustion) have been incorporated so as to ensure the equipment performs at near design levels. Since these emissions are dependent on the operability of the equipment to perform, an additional inspection requirement is included to maintain and demonstrate equipment performance. The proposed periodic monitoring is sufficient for these emission units because there is a small likelihood of an exceedance based on the inherent nature (discussed above) of natural gas, the margin of compliance routinely observed from emission tests on similar units, and the monitoring is consistent with other similar emission units in these source categories.
- The calculation of the CO emissions from the boilers and the demonstration of proper maintenance and repair of the boilers to ensure

proper combustion are sufficient to demonstrate compliance with the applicable CO standard.

- Additionally, the source is required to perform a "combustion evaluation" (Condition 4.1.2(i)(ii)(B)). This evaluation will further ensure that the boilers are operating properly, and thereby minimizing emissions.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions (T1's)

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Improperly tuned equipment operating at off-design- levels decrease combustion efficiency resulting in increased CO and VOC emissions. Therefore, the likelihood of natural gas combustion violating CO or VOC standards/limits is unlikely given that pipeline quality natural gas has a reliable carbon to hydrogen composition (> 75% methane), stable distribution and firing system and since the standards/limits are typically based on worst-case operating conditions. The periodic monitoring chosen is one in which combustion practices that promote time, temperature and turbulence (3T's of combustion) have been incorporated so as to ensure the equipment performs at near design levels. Since these emissions are dependent on the operability of the equipment to perform, an additional inspection requirement is included to maintain and demonstrate equipment performance. The proposed periodic monitoring is sufficient for these emission units because there is a small likelihood of an exceedance based on the inherent nature (discussed above) of natural gas, the margin of compliance routinely observed from emission tests on similar units, and the monitoring is consistent with other similar emission units in these source categories.
- With the required records, a calculation can be made to ensure compliance with the applicable CO limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the CO emissions can be divided by hours of operation to give CO emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of Nitrogen Oxides Emissions

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Essentially all NO_x formed from natural gas combustion is thermal NO_x. The control of stoichiometry is critical in achieving reductions in

thermal NO_x. Thermal NO_x formation also decreases rapidly as the temperature drops below the adiabatic flame temperature, for a given stoichiometry. Maximum reduction of thermal NO_x can be achieved by control of both the combustion temperature and the stoichiometry. Since these emissions are dependent on the operability of the equipment to perform, an additional inspection requirement is included to maintain and demonstrate equipment performance. The proposed periodic monitoring is sufficient for these emission units because there is a small likelihood of an exceedance based on the inherent nature (discussed above) of natural gas, the margin of compliance routinely observed from emission tests on similar units, and the monitoring is consistent with other similar emission units in these source categories.

- With the required records, a calculation can be made to ensure compliance with the applicable NO_x limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the NO_x emissions can be divided by hours of operation to give NO_x emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.
- Additionally, the source is required to perform a "combustion evaluation" (Condition 4.1.2(i)(ii)(B)). This evaluation will further ensure that the boilers are operating properly, and thereby minimizing emissions.

Rationale/Justification for Periodic Monitoring of HAP Emissions

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable HAP limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the HAP emissions can be divided by hours of operation to give HAP emissions (lb or ton) per hour/year of operation -- giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of Operational and Production Requirements

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.

- The recordkeeping required by the NSPS, as follows “affected facility shall record and maintain records of the amount of each fuel combusted during each operating day”, is sufficient to demonstrate compliance with the applicable fuel limits. Further a recordkeeping requirement for the source to “maintain a record of the amount of natural gas fired in the “Three Natural Gas-Fired Boilers (24.5 mmBtu/hr, each)” and in the “Five Natural Gas-Fired Boilers (25.2 mmBtu/hr, each)”, scf/mo and scf/yr.” allows for a compliance demonstration to be made.
- A record that the natural gas supplied to the facility meets pipeline quality standard is sufficient to very compliance with the applicable requirement to only use pipeline quality natural gas while firing natural gas in the boilers.

Rationale/Justification for Periodic Monitoring of Work Practice Requirements

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The required monitoring and records are in place to ensure that the boilers are properly maintained and operated. So long as the Permittee properly maintains and repairs these boilers, it is provided that the Permittee, to the extent practicable, has maintained and operated the boilers in a manner consistent with good air pollution control practice for minimizing emissions. The fact that the Permittee demonstrates ongoing compliance with other applicable regulations (e.g., opacity standard) also helps to ensure that these units comply with the applicable work practice requirement.

Non-Applicability Discussion

Complex non-applicability determinations were not made for this emission unit. All non-applicability discussions can be found in the Draft CAAPP Permit.

Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

b. Boilers: Fuel Oil Firing Mode (Subject to NSPS Dc)		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
Opacity Requirement (35 IAC 212.123)	Applicable Standard	See the Permit, Condition 4.2.2(a)(i)(A)
PM Requirement (35 IAC 212.206)	Applicable Standard	See the Permit, Condition 4.2.2(b)(i)(A)
PM Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.2.2(b)(i)(B & C)
SO ₂ Requirement (40 CFR 60.42c(d))	Applicable Standard	See the Permit, Condition 4.2.2(c)(i)(A)
SO ₂ Requirement (35 IAC 214.122)	Applicable Standard	See the Permit, Condition 4.2.2(c)(i)(B)
SO ₂ Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.2.2(c)(i)(C & D)

b. Boilers: Fuel Oil Firing Mode (Subject to NSPS Dc)		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
VOM Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.2.2(d) (i) (A & B)
CO Requirement (35 IAC 216.121)	Applicable Standard	See the Permit, Condition 4.2.2(e) (i) (A)
CO Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.2.2(e) (i) (B & C)
NO _x Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.2.2(f) (i) (A & B)
HAP Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.2.2(g) (i) (A & B)
Operational and Production Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.2.2(h) (i) (A-C)
Work Practice Requirement (40 CFR 60.11(d))	Applicable Work Practice	See the Permit, Condition 4.2.2(i) (i) (A)

Rationale/Justification for Periodic Monitoring of Visible Emissions (Opacity)

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- If required, the source shall perform Method 9 measurements of opacity to ensure compliance with the applicable regulation.

Rationale/Justification for Periodic Monitoring of Particulate Matter Emission (35 IAC 212.206)

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable PM limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance.

Rationale/Justification for Periodic Monitoring of Particulate Matter Emission (T1's)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.

- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable PM limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the PM emissions can be divided by hours of operation to give PM emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of Sulfur Emissions (40 CFR 60.42c(d))

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The monitoring from 40 CFR 60.44c(g) and records from 40 CFR 60.48c(e)(11) can be used to ensure compliance with the applicable regulation.

Rationale/Justification for Periodic Monitoring of Sulfur Emissions (35 IAC 214.122)

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Along with the required records of emissions in lb/mmBtu, the monitoring from 40 CFR 60.44c(g) and records from 40 CFR 60.48c(e)(11) can be used to ensure compliance with the applicable regulation.

Rationale/Justification for Periodic Monitoring of Sulfur Emissions (T1's)

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable SO2 limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission

values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the SO₂ emissions can be divided by hours of operation to give SO₂ emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of Organic Material Emission

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable VOM limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the VOM emissions can be divided by hours of operation to give VOM emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions (35 IAC 216.121)

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions (T1's)

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable CO limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values

would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the CO emissions can be divided by hours of operation to give CO emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of Nitrogen Oxides Emissions

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable NO_x limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the NO_x emissions can be divided by hours of operation to give NO_x emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of HAP Emissions

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable HAP limits for the boilers. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the boilers. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each boiler, the HAP emissions can be divided by hours of operation to give HAP emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits. Using same methods, a compliance demonstration can be made for the lb/mmBtu limits as well.

Rationale/Justification for Periodic Monitoring of Operational and Production Requirements

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The recordkeeping required by the NSPS, as follows "affected facility shall record and maintain records of the amount of each fuel combusted during each operating day", is sufficient to demonstrate compliance with the applicable fuel limits. Further a recordkeeping requirement for the source to "maintain a record of the amount of natural gas fired in the "Three Natural Gas-Fired Boilers (24.5 mmBtu/hr, each)" and in the "Five Natural Gas-Fired Boilers (25.2 mmBtu/hr, each)", scf/mo and scf/yr." allows for a compliance demonstration to be made.
- A record that the fuel oil supplied to the facility meets the requirements to be classified as "ultra-low sulfur" diesel fuel is sufficient to verify compliance with the applicable requirement to only use ultra-low sulfur diesel fuel while firing fuel oil in the boilers.
- Records of the hours of operation using fuel oil along with the reason fuel oil was fired in the boilers, if it was, it sufficient to verify compliance with the requirements to burn "fuel oil only during periods of gas curtailment, gas supply emergencies, or periodic testing on liquid fuel" and "Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year".

Rationale/Justification for Periodic Monitoring of Work Practice Requirements

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The required monitoring and records are in place to ensure that the boilers are properly maintained and operated. So long as the Permittee properly maintains and repairs these boilers, it is provided that the Permittee, to the extent practicable, has maintained and operated the boilers in a manner consistent with good air pollution control practice for minimizing emissions. The fact that the Permittee demonstrates ongoing compliance with other applicable regulations (e.g., opacity standard) also helps to ensure that these units comply with the applicable work practice requirement.

Non-Applicability Discussion

Complex non-applicability determinations were not made for this emission unit. All non-applicability discussions can be found in the Draft CAAPP Permit.

Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

c. Natural Gas-Fired Boilers		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
Opacity Requirement (35 IAC 212.123)	Applicable Standard	See the Permit, Condition 4.3.2(a)(i)(A)
CO Requirement (T1)	Applicable Limits	See the Permit, Condition 4.3.2(b)(i)(A)
NO _x Requirement (T1)	Applicable Limits	See the Permit, Condition 4.3.2(c)(i)(A)
GHG Requirement (T1)	Applicable Limits	See the Permit, Condition 4.3.2(d)(i)(A)
Operational and Production Requirements	Applicable Limitations	See the Permit, Condition 4.3.2(e)(i)(A & B)
Work Practice Requirement	Applicable Work Practice	See the Permit, Condition 4.3.2(f)(i)(A)

The likelihood of natural gas engines violating NO_x or CO standards or limitations is extremely small, based on the margin of compliance routinely observed from emission tests on similar units. The main primary assurance is the requirement to fire only pipeline quality natural gas in the combustion equipment even though the applicable emission standards or limitations may be based on combustion of higher polluting fuels (such as fuel oil or coal). This is because of the inherent qualities of natural gas found in the distribution pipeline and the need to meet tariff requirements on the transmission and distribution of this commodity. Therefore, if the source only burns pipeline quality natural gas, and complies with the applicable limits on hours of operation, emissions are expected to be substantially lower than the applicable standards since the standards are based on worst-case operation using higher polluting fuels. The continued requirement for the source to keep records of the hours of operation and fuel usage of the emission units and to determine emissions on a monthly and annual basis is sufficient to determine compliance when coupled with the additional monitoring discussed below. Standard emission factors for combustion of natural gas do vary based on the type of emission units but by requiring the source to maintain the type of fuel used, maintain inspection records, and maintain maintenance and repair logs there is a reasonable assurance the emission units are being operated properly and therefore would result in emissions being minimized as well as engine efficiency being maintained, thereby reducing the likelihood of excess emissions. This additional monitoring also ensures that the emission factors used to calculate emissions are continued to be representative of near design operation. To calculate emissions, the source may use source-specific emission factors, if available, or EPA/Industry published standard emission factors. These records would help the Illinois EPA determine if the emission units are being operated properly and therefore would result in negligible products of incomplete combustion.

Rationale/Justification for Periodic Monitoring of Visible Emissions (Opacity)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Annual observations of opacity using Method 22, including records of these observations, are sufficient to verify compliance with the 30% opacity limit for these boilers that combust only natural gas. The

likelihood of natural gas boilers violating opacity is extremely minimal. It should be noted that the source is required to maintain the type of fuel used and maintain maintenance and repair logs of these natural gas boilers. These records would help the Illinois EPA determine if the natural gas boilers are being operated properly and therefore would result in opacity being minimized. Because the boilers use pipeline quality natural gas, which contains very low concentrations of PM, coupled with operational inspections, ensure boilers efficiencies to reduce the likelihood of visible emissions.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions

Periodic Monitoring is sufficient for these emission units because:

- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Basic emissions calculations using appropriate emission factors are satisfactory to verify compliance with the emission limits set forth for these boilers. The source is required to maintain the hours of operation for each boiler, which will allow for a compliance demonstration to be made for the lb/hr limitations. It should also be noted that the source is required to maintain maintenance and repair logs of these natural gas boilers. These records would help the Illinois EPA determine if the natural gas boilers are being operated properly, which would result in CO emissions being minimized.
- Further, CO emissions result from incomplete combustion. CO results when there is insufficient residence time at high temperature or incomplete mixing to complete the final step in fuel carbon oxidation. Improperly tuned equipment operating at off-design- levels decrease combustion efficiency resulting in increased CO emissions. Therefore, the likelihood of natural gas combustion violating CO standards/limits is unlikely given that pipeline quality natural gas has a reliable carbon to hydrogen composition (> 75% methane), stable distribution and firing system and since the standards/limits are typically based on worst-case operating conditions. Since these emissions are dependent on the operability of the equipment to perform, an additional inspection requirement is included to maintain and demonstrate equipment performance. The proposed periodic monitoring is sufficient for these emission units because there is a small likelihood of an exceedance based on the inherent nature of natural gas, the margin of compliance routinely observed from emission tests on similar units, and the monitoring is consistent with other similar emission units in these source categories.
- Additionally, the source is required to perform a "combustion evaluation" (Condition 4.3.2(f)(ii)(B)). This evaluation will further ensure that the boilers are operating properly, and thereby minimizing emissions.

Rationale/Justification for Periodic Monitoring of Nitrogen Oxides Emissions

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.

- Basic emissions calculations using appropriate emission factors are satisfactory to verify compliance with the emission limits set forth for these boilers. The source is required to maintain the hours of operation for each boiler, which will allow for a compliance demonstration to be made for the lb/hr limitations.
- Further, essentially all NO_x formed from natural gas combustion is thermal NO_x. The control of stoichiometry is critical in achieving reductions in thermal NO_x. Thermal NO_x formation also decreases rapidly as the temperature drops below the adiabatic flame temperature, for a given stoichiometry. Maximum reduction of thermal NO_x can be achieved by control of both the combustion temperature and the stoichiometry. Since these emissions are dependent on the operability of the equipment to perform, an additional inspection requirement is included to maintain and demonstrate equipment performance. The proposed periodic monitoring is sufficient for these emission units because there is a small likelihood of an exceedance based on the inherent nature (discussed above) of natural gas, the margin of compliance routinely observed from emission tests on similar units, and the monitoring is consistent with other similar emission units in these source categories.
- Additionally, the source is required to perform a "combustion evaluation" (Condition 4.3.2(f)(ii)(B)). This evaluation will further ensure that the boilers are operating properly, and thereby minimizing emissions.

Rationale/Justification for Periodic Monitoring of GHG Emissions

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Basic emissions calculations using appropriate emission factors are satisfactory to verify compliance with the emission limits set forth for these boilers. Knowing the type of fuel fired, appropriate emission factors can be used to yield representative and reliable results to demonstrate ongoing compliance with this annual limit.

Non-Applicability Discussion

Complex non-applicability determinations were not made for this emission unit. All non-applicability discussions can be found in the Draft CAAPP Permit.

Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

d. Emergency Generator Engines (Subject to NSPS IIII)		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
Opacity Requirement (35 IAC 212.123)	Applicable Standard	See the Permit, Condition 4.4.2(a)(i)(A)
PM Requirement (40 CFR 60.4205(b))	Applicable Standard	See the Permit, Condition 4.4.2(b)(i)(A)
SO ₂ Requirement (35 IAC 214.301)	Applicable Standard	See the Permit, Condition 4.4.2(c)(i)(A)

d. Emergency Generator Engines (Subject to NSPS IIII)		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
CO Requirement (40 CFR 60.4205(b))	Applicable Standard	See the Permit, Condition 4.4.2(d) (i) (A)
CO Requirement (T1)	Applicable Limits	See the Permit, Condition 4.4.2(d) (i) (B & C)
NO _x + NMHC Requirement (40 CFR 60.4205(b))	Applicable Standard	See the Permit, Condition 4.4.2(e) (i) (A)
NO _x Requirement (T1)	Applicable Limits	See the Permit, Condition 4.4.2(e) (i) (B & C)
Operational and Production Requirements	Applicable Operational Requirements	See the Permit, Condition 4.4.2(f) (i) (A-D)
Work Practice Requirement	Applicable Work Practice	See the Permit, Condition 4.4.2(g) (i) (A & B)

Rationale/Justification for Periodic Monitoring of Visible Emissions (Opacity)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Annual observations of opacity, including records of these observations, are sufficient to verify compliance with the 30% opacity limit for engines that combust fuel oil which has low particulate content. The likelihood of these engines violating opacity is small. It should also be noted that the source is also required to maintain the type of fuel used, maintain inspection records, and maintain maintenance and repair logs of the engines. These records would help the Illinois EPA determine if the engines are being operated properly and therefore would result in opacity being minimized.

Rationale/Justification for Periodic Monitoring of Particulate Matter Emission

Periodic Monitoring is sufficient for these emission units because:

- Presumed by rule as the source is subject to a standard promulgated after Nov. 1990.
- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The only PM standard/limit for these engines is derived from NSPS IIII. Since these units are subject to a post-1990 federal regulation, the periodic monitoring contained within NSPS IIII shall be sufficient to demonstrate compliance with the applicable requirements from this regulation.

Rationale/Justification for Periodic Monitoring of Sulfur Emissions

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The requirement for these engines to fire solely ultra-low sulfur diesel fuel assures compliance with the applicable requirement. 15 ppm or less is the sulfur concentration allowed to meet the definition of ultra-low sulfur diesel fuel. Pursuant to 40 CFR 80.510(b) to be considered non-road diesel fuel (i.e., ultra-low sulfur diesel fuel), it must contain 15 ppm or less of sulfur. The sulfur content limitation would result in SO₂ emission far less than the limit of 2,000 ppm because the properties associated with this combustion process means the sulfur level discharged will not exceed sulfur level input to the engines. It should also be noted that the source is also required to maintain the type of fuel used with associated records.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions (40 CFR 60.4205(b))

Periodic Monitoring is sufficient for these emission units because:

- Presumed by rule as the source is subject to a standard promulgated after November 1990.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- This CO standard/limit for these engines is derived from NSPS IIII. Since these units are subject to a post-1990 federal regulation, the periodic monitoring contained within NSPS IIII shall be sufficient to demonstrate compliance with the applicable requirements from this regulation.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions (T1's)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable CO limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the CO emissions can be divided by hours of operation to give CO emissions (lb or ton) per

hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Nitrogen Oxides + NMHC Emissions (40 CFR 60.4205(b))

Periodic Monitoring is sufficient for these emission units because:

- Presumed by rule as the source is subject to a standard promulgated after November 1990.
- There is a small likelihood of an exceedance.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- This NO_x + NMHC standard/limit for these engines is derived from NSPS IIII. Since these units are subject to a post-1990 federal regulation, the periodic monitoring contained within NSPS IIII shall be sufficient to demonstrate compliance with the applicable requirements from this regulation.

Rationale/Justification for Periodic Monitoring of Nitrogen Oxides Emissions (T1's)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable NO_x limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the NO_x emissions can be divided by hours of operation to give NO_x emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Operational and Production Requirements

Periodic Monitoring is sufficient because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The requirement for the source to comply with the fuel requirement of 40 CFR 80.510(b) can be assured by the source maintaining a record from the fuel supplier or another credible source stating that the fuel supplied to the source is compliant with the applicable regulation.

- The requirements of NSPS IIII in the section are assured by records required by this permit, such as, the purpose of operation and the duration of operation of these engines.
- The requirement for the source to comply with electrical output capacity limitations is assured by the records of the designed rated electrical output capacity of the engines.
- Additionally, to ensure ongoing compliance with the Title I requirement in Condition 4.4.2(f)(i)(D), the source must perform inspections at least once every two years to ensure that the engines are operating in a manner that directs the exhaust flow vertically into the atmosphere without obstruction when the engines are operating.

Rationale/Justification for Periodic Monitoring of Work Practice Requirements

Periodic Monitoring is sufficient because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Inspections of these engines with any associated records to ensure that proper working order is maintained for these engines along with the historical compliance record for these engines assures that the source maintains these engines in a manner consistent with good air pollution control practices.

Non-Applicability Discussion

Complex non-applicability determinations were not made for this emission unit. All non-applicability discussions can be found in the Draft CAAPP Permit.

Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

e. Emergency Generator Engines		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
Opacity Requirement (35 IAC 212.123)	Applicable Standard	See the Permit, Condition 4.5.2(a)(i)(A)
PM Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.5.2(b)(i)(A & B)
SO ₂ Requirement (35 IAC 214.301)	Applicable Standard	See the Permit, Condition 4.5.2(c)(i)(A)
SO ₂ Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.5.2(c)(i)(B & C)
VOM Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.5.2(d)(i)(A & B)
CO Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.5.2(e)(i)(A & B)
NO _x Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.5.2(f)(i)(A & B)
HAP Requirement (T1)	Applicable Limits	See the Permit, Conditions 4.5.2(g)(i)(A & B)

e. Emergency Generator Engines		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
Operational and Production Requirements	Applicable Operational Requirements	See the Permit, Conditions 4.5.2(h)(i)(A-D)
Work Practice Requirements	Applicable Work Practices	See the Permit, Condition 4.5.2(i)(i)(A)

Rationale/Justification for Periodic Monitoring of Visible Emissions (Opacity)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Annual observations of opacity, including records of these observations, are sufficient to verify compliance with the 30% opacity limit for engines that combust fuel oil which has low particulate content. The likelihood of these engines violating opacity is small. It should also be noted that the source is also required to maintain the type of fuel used, maintain inspection records, and maintain maintenance and repair logs of the engines. These records would help the Illinois EPA determine if the engines are being operated properly and therefore would result in opacity being minimized.

Rationale/Justification for Periodic Monitoring of Particulate Matter Emission

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable PM limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the PM emissions can be divided by hours of operation to give PM emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Sulfur Emissions (35 IAC 214.301)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- These engines are required to burn only ultra-low sulfur diesel fuel which means the fuel must meet requirements established by 40 CFR 80.510. Pursuant to 40 CFR 80.510(b) to be considered non-road diesel fuel, it must contain 15 ppm or less of sulfur. The sulfur content limitation would result in SO₂ emission less than the limit 2,000 ppm because the properties associated with this combustion process means the sulfur level discharged will not exceed sulfur level input to the engines. It should also be noted that the source is also required to maintain the type of fuel used, maintain inspection records.

Rationale/Justification for Periodic Monitoring of Sulfur Emission (T1)

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable SO₂ limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the SO₂ emissions can be divided by hours of operation to give SO₂ emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Organic Material Emission

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable VOM limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units

would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the VOM emissions can be divided by hours of operation to give VOM emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Carbon Monoxide Emissions

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable CO limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the CO emissions can be divided by hours of operation to give CO emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Nitrogen Oxides Emissions

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable NO_x limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the NO_x emissions can be divided by hours of operation to give NO_x emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of HAP Emissions

Periodic Monitoring is sufficient for these emission units because:

- There is a small likelihood of an exceedance.
- Emissions do not vary significantly under normal operation and/or vary slowly with time.

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable HAP limits for the engines. Using widely accepted and reliable emission factors (e.g., AP-42), calculations can be performed to determine the general level of emissions from the engines. These emission factors are generally based on "worst-case" scenarios meaning there is a "safety factor". Therefore these calculated emission values would provide assurance that the actual emissions from these units would be at or below the calculated values used for determining compliance. Then, knowing the hours of operation of each engine, the HAP emissions can be divided by hours of operation to give HAP emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Operational and Production Requirements

Periodic Monitoring is sufficient because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- The requirement for the source to comply with the fuel requirement of 40 CFR 80.510(b) can be assured by the source maintaining a record from the fuel supplier or another credible source stating that the fuel supplied to the source is compliant with the applicable regulation.
- The requirements to avoid NESHAP ZZZZ requirements are assured by records required by this permit, such as, the purpose of operation and the duration of operation of these engines.
- The requirement for the source to comply with engine-hour limitations is assured by the records of the engine-hours operated for each engine (hr/mo and hr/yr).

Rationale/Justification for Periodic Monitoring of Work Practice Requirements

Periodic Monitoring is sufficient because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- Inspections of these engines with any associated records to ensure that proper working order is maintained for these engines along with the historical compliance record for these engines assures that the source maintains these engines in a manner consistent with good air pollution control practices.

Non-Applicability Discussion

Complex non-applicability determinations were not made for these emission units.

Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

f. Ethylene Oxide Sterilizers		
Applicable Requirements Summary		
Applicable Requirement	Type	Location
VOM Requirement (35 IAC 218.301)	Applicable Standard	See the Permit, Condition 4.6.2(a)(i)(A)
VOM Requirement (T1)	Applicable Limits	See the Permit, Condition 4.6.2(a)(i)(B)
Work Practice Requirements	Applicable Work Practices	See the Permit, Condition 4.6.2(b)(i)(A-C)

Rationale/Justification for Periodic Monitoring of Organic Material Emission (218.301)

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable VOM standard for the sterilizers. Knowing the usage of each sterilant used (lb/batch) combined with the number of batches (batches/mo), VOM emissions as a result of these units can be found. $Lb/Batch \times Batch/Mo = Lb/Mo$ VOM emissions; with a conservative approach, it can be assumed that all sterilant gas is directly emitted to the abator system, therefore ensuring the source is in compliance with the limits. Then, knowing the hours of operation of each sterilizer, the VOM emissions can be divided by hours of operation to give VOM emissions (lb or ton) per hour of operation --giving (lb/hr), which is the unit of the applicable standard.

Rationale/Justification for Periodic Monitoring of Organic Material Emission (T1)

Periodic Monitoring is sufficient for these emission units because:

- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.
- With the required records, a calculation can be made to ensure compliance with the applicable VOM limit for the sterilizers. Knowing the usage of each sterilant used (lb/batch) combined with the number of batches (batches/mo), VOM emissions as a result of these units can be found. $Lb/Batch \times Batch/Mo = Lb/Mo$ VOM emissions; with a conservative approach, it can be assumed that all sterilant gas is directly emitted to the abator system, therefore ensuring the source is in compliance with the limits. Then, knowing the hours of operation of each sterilizer, the VOM emissions can be divided by hours of operation to give VOM emissions (lb or ton) per hour/year of operation --giving (lb/hr or ton/yr), which are the units of the applicable limits.

Rationale/Justification for Periodic Monitoring of Work Practice Requirements

Periodic Monitoring is sufficient for these emission units because:

- Compliance with the applicable NESHAP requirements can be presumed by rule as the source is subject to a standard promulgated after Nov. 1990.
- Source has not exhibited a history of non-compliance.

- Monitoring is consistent with other sources in this source category.
- The requirement for the source to maintain the sterilizers in accordance with manufacturer's instructions ensures routine maintenance is performed. Records of inspections and defect repairs will also help to ensure that the equipment is operated in the proper manner, thus further demonstrating compliance with the applicable T1 requirements.

Non-Applicability Discussion

Complex non-applicability determinations were not made for this emission unit. All non-applicability discussions can be found in the Draft CAAPP Permit.

Prompt Reporting Discussion

Prompt reporting of deviations has been established as 30 days. See rationale in Chapter III Section 3.9.

3.8 Insignificant Activities Discussion

Applicable Requirements Summary		
Applicable Requirement	Type	Location
NSPS Requirement (40 CFR 60 Subpart I IIII)	Applicable Standard	See the Permit, Condition 6.1(a)(i)
NESHAP Requirement (40 CFR 63 Subpart ZZZZ)	Applicable Standard	See the Permit, Condition 6.1(a)(ii)

National Emission Standards for Hazardous Air Pollutants (NSPS)

Periodic Monitoring is sufficient for these emission units because:

- Presumed by rule as the source is subject to a standard promulgated after November 1990.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

Periodic Monitoring is sufficient for these emission units because:

- Presumed by rule as the source is subject to a standard promulgated after Nov. 1990.
- Source has not exhibited a history of non-compliance.
- Monitoring is consistent with other sources in this source category.

3.9 Prompt Reporting Discussion

Among other terms and conditions, CAAPP Permits contain reporting obligations to assure compliance with applicable requirements. These reporting obligations are generally four-fold. More specifically, each CAAPP Permit sets forth any reporting requirements specified by state or federal law or regulation, requires prompt reports of deviations from applicable requirements, requires reports of deviations from required monitoring and requires a report certifying the status of compliance with terms and conditions of the CAAPP Permit over the calendar year.

The number and frequency of reporting obligations in any CAAPP Permit is source-specific. That is, the reporting obligations are directly related to factors, including the number and type of emission units and applicable requirements, the complexity of the source and the compliance status. This four-fold approach to reporting is common to virtually all CAAPP Permits as described below. Moreover, this is the approach established in the Draft CAAPP Permit for this source.

Regulatory Reports

Many state and federal environmental regulations establish reporting obligations. These obligations vary from rule-to-rule and thus from CAAPP source to CAAPP source and from CAAPP Permit to CAAPP Permit. The variation is found in the report triggering events, reporting period, reporting frequency and reporting content. Regardless, the CAAPP makes clear that all reports established under applicable regulations shall be carried forward into the CAAPP Permit as stated in Section 39.5(7)(b) of the Illinois Environmental Protection Act. Generally, where sufficiently detailed to meet the exacting standards of the CAAPP, the regulatory reporting requirements are simply restated in the CAAPP Permit. Depending on the regulatory obligations, these regulatory reports may also constitute a deviation report as described below.

The Draft CAAPP Permit for this source would embody all regulatory reporting as promulgated under federal and state regulations under the Clean Air Act and the Illinois Environmental Protection Act. Depending on the frequency of the report, the regulatory report may also satisfy the prompt reporting obligations discussed below. These reports must be certified by a responsible official.

These reports are generally found in the reporting sections for each emission unit group. The various regulatory reporting requirements are summarized in the table at the end of this Reporting Section.

Deviation Reports (Prompt Reporting)

Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require prompt reporting of deviations from the permit requirements.

Neither the CAAPP nor the federal rules upon which the CAAPP is based and was approved by USEPA define the term "prompt". Rather, 40 CFR Part 70.6(a)(3)(iii)(B) intended that the term have flexibility in application. The USEPA has acknowledged for purposes of administrative efficiency and clarity that the permitting authority (in this case, Illinois EPA) has the discretion to define "prompt" in relation to the degree and type of deviation likely to occur at a particular source. The Illinois EPA follows this approach and defines prompt reporting on a permit-by-permit basis. In instances where the underlying applicable requirement contains "prompt" reporting, the Illinois EPA typically incorporates the pre-established timeframe in the CAAPP permit (e.g. a NESHAP or NSPS deviation report). Where the underlying applicable requirement fails to explicitly set forth the timeframe for reporting deviations, the Illinois EPA generally uses a timeframe of 30 days to define prompt reporting of deviations.

This approach to prompt reporting of deviations as discussed herein is consistent with the requirements of Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act as well as 40 CFR Part 70 and the CAA. The reporting arrangement is designed so that the source will appropriately notify

the Illinois EPA of those events that might warrant attention. The timing for these event-specific notifications is necessary and appropriate as it gives the source enough time to conduct a thorough investigation into the causes of an event, collecting any necessary data, and developing preventive measures, to reduce the likelihood of similar events, all of which must be addressed in the notification for the deviation, while at the same time affording regulatory authority and the public timely and relevant information. The approach also affords the Illinois EPA and USEPA an opportunity to direct investigation and follow-up activities, and to make compliance and enforcement decisions in a timely fashion.

The Draft CAAPP Permit for this source would require prompt reporting as required by the Illinois Environmental Protection Act in the fashion described in this subsection. In addition, pursuant to Section 39.5(7)(f)(i) of the Illinois Environmental Protection Act, this Draft CAAPP Permit would also require the source to provide a summary of all deviations with the Semi-Annual Monitoring Report. These reports must be certified by a responsible official, and are generally found in the reporting sections for each emission unit group.

Semi-Annual Monitoring Reports

Section 39.5(7)(f)(i) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require a report relative to monitoring obligations as set forth in the permit. Depending upon the monitoring obligation at issue, the semi-annual monitoring report may also constitute a deviation report as previously discussed. This monitoring at issue includes instrumental and non-instrumental emissions monitoring, emissions analyses, and emissions testing established by state or federal laws or regulations or as established in the CAAPP Permit. This monitoring also includes recordkeeping. Each deviation from each monitoring requirement must be identified in the relevant semi-annual report. These reports provide a timely opportunity to assess for compliance patterns of concern. The semi-annual reports shall be submitted regardless of any deviation events. Reporting periods for semi-annual monitoring reports are January 1 through June 30 and July 1 through December 31 of each calendar year. Each semi-annual report is due within 30 days after the close of reporting period. The reports shall be certified by a responsible official. The Draft CAAPP Permit for this source would require such reports at Condition 3.5(b).

Annual Compliance Certifications

Section 39.5(7)(p)(v) of the Illinois Environmental Protection Act mandates that each CAAPP Permit require a source to submit a certification of its compliance status with each term and condition of its CAAPP Permit. The reports afford a broad assessment of a CAAPP sources compliance status. The CAAPP requires that this report be submitted, regardless of compliance status, on an annual basis. Each CAAPP Permit requires this annual certification be submitted by May 1 of the year immediately following the calendar year reporting period. The report shall be certified by a responsible official. The Draft CAAPP Permit for this source would require such a report at Condition 2.6(a).

Prompt reporting of deviations is critical in order to have timely notice of deviations and the opportunity to respond, if necessary. The effectiveness of the permit depends upon, among other important elements, timely and accurate reporting. The Illinois EPA, USEPA, and the public rely on timely and accurate reports submitted by the source to measure compliance and to direct investigation and follow-up activities. Prompt reporting is evidence

of the source's good faith in disclosing deviations and describing the steps taken to return to compliance and prevent similar incidents.

Any occurrence that results in an excursion from any emission limitation, operating condition, or work practice standard as specified in this Draft CAAPP Permit is a deviation subject to prompt reporting. Additionally, any failure to comply with any permit term or condition is a deviation of that permit term or condition and must be reported to the Illinois EPA as a permit deviation. The deviation may or may not be a violation of an emission limitation or standard. A permit deviation can exist even though other indicators of compliance suggest that no emissions violation or exceedance has occurred. Reporting permit deviations does not necessarily result in enforcement action. The Illinois EPA has the discretion to take enforcement action for permit deviations that may or may not constitute a deviation from an emission limitation or standard or the like, as necessary and appropriate.

As a result, the Illinois EPA's approach to prompt reporting of deviations as discussed herein is consistent with the requirements of Section 39.5(7)(f)(ii) of the Illinois Environmental Protection Act as well as 40 CFR Part 70 and the CAA. This reporting arrangement is designed so that the source will appropriately notify the Illinois EPA of those events that might warrant individual attention.

3.10 Emissions Reduction Market System (ERMS)

The Emissions Reduction Market System (ERMS) is a "cap and trade" market system for major stationary sources located in the Chicago ozone nonattainment area. It is designed to reduce VOM emissions from stationary sources to contribute to reasonable further progress toward attainment, as required by Section 182(c) of the CAA.

The ERMS addresses VOM emissions during a seasonal allotment period from May 1 through September 30. Participating sources must hold "allotment trading units" (ATUs) for their actual seasonal VOM emissions. Each year participating sources are issued ATUs based on allotments set in the sources' CAAPP permits. These allotments are established from historical VOM emissions or "baseline emissions" lowered to provide the emissions reductions from stationary sources required for reasonable further progress.

By December 31 of each year, the end of the reconciliation period following the seasonal allotment period, each source shall have sufficient ATUs in its transaction account to cover its actual VOM emissions during the preceding season. A transaction account's balance as of December 31 will include any valid ATU transfer agreements entered into as of December 31 of the given year, provided such agreements are promptly submitted to the Illinois EPA for entry into the transaction account database. The Illinois EPA will then retire ATUs in sources' transaction accounts in amounts equivalent to their seasonal emissions. When a source does not appear to have sufficient ATUs in its transaction account, the Illinois EPA will issue a notice to the source to begin the process for Emissions Excursion Compensation.

In addition to receiving ATUs pursuant to their allotments, participating sources may also obtain ATUs from the market, including ATUs bought from other participating sources and general participants in the ERMS that hold ATUs (35 IAC 205.630) and ATUs issued by the Illinois EPA as a consequence of VOM emissions reductions from an Emissions Reduction Generator or an Intersector Transaction (35 IAC 205.500 and 35 IAC 205.510). During the

reconciliation period, sources may also buy ATUs from a secondary reserve of ATUs managed by the Illinois EPA, the "Alternative Compliance Market Account" (ACMA) (35 IAC 205.710). Sources may also transfer or sell the ATUs that they hold to other sources or participants (35 IAC 205.630).

3.11 Incorporation by Reference Discussion

Based on guidance found in White Paper 2 and past petition responses by the Administrator, it is recognized that Title V permit authorities may, within their discretion, incorporate plans by reference. As recognized in the *White Paper 2*, permit authorities can effectively streamline the contents of a Title V permit, avoiding the inevitable clutter of restated text and preventing unnecessary delays where, as here, permit issuance is subject to a decision deadline.⁴ However, it is also recognized that the benefits of incorporation of plans must be carefully balanced by a permit authority with its duty to issue permits in a way that is "clear and meaningful" to the Permittee and the public.⁵

The criteria that are mentioned in USEPA Administrator Petition Responses stress the importance of identifying, *with specificity*, the object of the incorporation.⁶ The Illinois EPA agrees that such emphasis is generally consistent with USEPA's pronouncements in previous guidance.

For each condition incorporating a plan, the Illinois EPA is also briefly describing the general manner in which the plan applies to the source. Identifying the nature of the source activity, the regulatory requirements or the nature of the equipment associated with the plan is a recommendation of the *White Paper 2*⁷. The Illinois EPA has stopped short of enumerating the actual contents of a plan, as restating them in the permit would plainly defeat the purpose of incorporating the document by reference and be contrary to USEPA guidance on the subject.⁸

Plans may need to be revised from time to time, as occasionally required by circumstance or by underlying rule or permit requirement. Except where expressly precluded by the relevant rules, this Draft CAAPP Permit allows the Permittee to make future changes to a plan without undergoing formal permit revision procedures. This approach will allow flexibility to make required changes to a plan without separately applying for a revised permit and, similarly, will lessen the impacts that could result for the Illinois EPA if every change to a plan's contents required a permitting transaction.⁹ Changes to the incorporated plans during the permit term are automatically incorporated into the Draft CAAPP Permit unless the Illinois EPA expresses a written objection.

The Draft CAAPP Permit incorporates by reference the following plans: Episode Action Plan and Fugitive PM Operating Program.¹⁰

3.12 Periodic Monitoring General Discussions

Pursuant to Section 504(c) of the Clean Air Act, a Title V permit must set forth monitoring requirements, commonly referred to as "Periodic Monitoring," to assure compliance with the terms and conditions of the permit. A general discussion of Periodic Monitoring is provided below. The Periodic Monitoring that is proposed for specific operations and emission units and at this source is discussed in Chapter III of this Statement of Basis. Chapter III provides a narrative discussion of and justification for the elements of Periodic

Monitoring that would apply to the different emission units and types of emission units at the facility.

As a general matter, the required content of a CAAPP Permit with respect to such Periodic Monitoring is addressed in Section 39.5(7) of the Illinois Environmental Protection Act.¹¹ Section 39.5(7)(b) of the Illinois Environmental Protection Act¹² provides that in a CAAPP Permit:

The Agency shall include among such conditions applicable monitoring, reporting, record keeping and compliance certification requirements, as authorized by paragraphs d, e, and f of this subsection, that the Agency deems necessary to assure compliance with the Clean Air Act, the regulations promulgated thereunder, this Act, and applicable Board regulations. When monitoring, reporting, record keeping and compliance certification requirements are specified within the Clean Air Act, regulations promulgated thereunder, this Act, or applicable regulations, such requirements shall be included within the CAAPP Permit.

Section 39.5(7)(d)(ii) of the Illinois Environmental Protection Act further provides that a CAAPP Permit shall:

Where the applicable requirement does not require periodic testing or instrumental or noninstrumental monitoring (which may consist of recordkeeping designed to serve as monitoring), require Periodic Monitoring sufficient to yield reliable data from the relevant time period that is representative of the source's compliance with the permit
...

Accordingly, the scope of the Periodic Monitoring that must be included in a CAAPP Permit is not restricted to monitoring requirements that were adopted through rulemaking or imposed through permitting. When applicable regulatory emission standards and control requirements or limits and control requirement in relevant Title 1 permits are not accompanied by compliance procedures, it is necessary for Monitoring for these standards, requirements or limits to be established in a CAAPP Permit.^{13, 14} Monitoring requirements must also be established when standards and control requirement are accompanied by compliance procedures but those procedures are not adequate to assure compliance with the applicable standards or requirements.^{15, 16} For this purpose, the requirements for Periodic Monitoring in a CAAPP Permit may include requirements for emission testing, emissions monitoring, operational monitoring, non-instrumental monitoring, and recordkeeping for each emission unit or group of similar units at a facility, as required by rule or permit, as appropriate or as needed to assure compliance with the applicable substantive requirements. Various combinations of monitoring measures will be appropriate for different emission units depending on their circumstances, including the substantive emission standards, limitations and control requirements to which they are subject.

What constitutes sufficient Periodic Monitoring for particular emission units, including the timing or frequency associated with such Monitoring requirements, must be determined by the permitting authority based on its knowledge, experience and judgment.¹⁷ For example, as Periodic Monitoring must collect representative data, the timing of Monitoring requirements need not match the averaging time or compliance period of the associated substantive requirements, as set by the relevant regulations and permit provisions. The timing of the various requirements making up the Periodic Monitoring for an emission unit is something that must be considered when those Monitoring requirements are being

established. For this purpose, Periodic Monitoring often consists of requirements that apply on a regular basis, such as routine recordkeeping for the operation of control devices or the implementation of the control practices for an emission unit. For certain units, this regular monitoring may entail "continuous" monitoring of emissions, opacity or key operating parameters of a process or its associated control equipment, with direct measurement and automatic recording of the selected parameter(s). As it is infeasible or impractical to require emissions monitoring for most emission units, instrumental monitoring is more commonly conducted for the operating parameters of an emission unit or its associated control equipment. Monitoring for operating parameter(s) serves to confirm proper operation of equipment, consistent with operation to comply with applicable emission standards and limits. In certain cases, an applicable rule may directly specify that a particular level of an operating parameter be maintained, consistent with the manner in which a unit was being operated during emission testing. Periodic Monitoring may also consist of requirements that apply on a periodic basis, such as inspections to verify the proper functioning of an emission unit and its associated controls.

The Periodic Monitoring for an emission unit may also include measures, such as emission testing, that would only be required once or only upon specific request by the Illinois EPA. These requirements would always be accompanied by Monitoring requirements would apply on a regular basis. When emission testing or other measure is only required upon request by the Illinois EPA, it is included as part of the Periodic Monitoring for an emission unit to facilitate a response by the Illinois EPA to circumstances that were not contemplated when Monitoring was being established, such as the handling of a new material or a new mode of operation. Such Monitoring would also serve to provide further verification of compliance, along with other potentially useful information. As emission testing provides a quantitative determination of compliance, it would also provide a determination of the margin of compliance with the applicable limit(s) and serve to confirm that the Monitoring required for an emission unit on a regular basis is reliable and appropriate. Such testing might also identify specific values of operating parameters of a unit or its associated control equipment that accompany compliance and can be relied upon as part of regular Monitoring.

There are a number of considerations or factors that are or may be relevant when evaluating the need to establish new monitoring requirements as part of the Periodic Monitoring for an emission unit. These factors include: (1) The nature of the emission unit or process and its emissions; (2) The variability in the operation and the emissions of the unit or process over time; (3) The use of add-on air pollution control equipment or other practices to control emissions and comply with the applicable substantive requirement(s); (4) The nature of that control equipment or those control practices and the potential for variability in their effectiveness; (5) The nature of the applicable substantive requirement(s) for which Periodic Monitoring is needed; (6) The nature of the compliance procedures that specifically accompany the applicable requirements; (7) The type of data that would already be available for the unit; (8) The effort needed to comply with the applicable requirements and the expected margin of compliance; (9) The likelihood of a violation of applicable requirements; (10) The nature of the Periodic Monitoring that may be readily implemented for the emission unit; (11) The extent to which such Periodic Monitoring would directly address the applicable requirements; (12) The nature of Periodic Monitoring commonly required for similar emission units at other facilities and in similar circumstances; (13) The interaction or relationship between the different measures in the Periodic Monitoring for an emission unit;

and (14) The feasibility and reasonableness of requiring additional measures in the Periodic Monitoring for an emission unit in light of other relevant considerations.¹⁸

CHAPTER IV - CHANGES FROM PREVIOUSLY ISSUED CAAPP PERMITS

4.1 Major Changes Summary

This renewal CAAPP draft is presented in a new format. The new format is the result of recommendations by the USEPA, comments made by sources, and interactions with the public.

	<i>Previous CAAPP Permit Layout</i>	<i>New CAAPP Permit Layout</i>
Section 1	Source Identification	Source Information
Section 2	List Of Abbreviations/Acronyms	General Permit Requirements
Section 3	Insignificant Activities	Source Requirements
Section 4	Significant Emission Units	Emission Unit Requirements
Section 5	Overall Source Conditions	Title I Requirements
Section 6	Emission Control Programs	Insignificant Activities
Section 7	Unit Specific Conditions	Other Requirements
Section 8	General Permit Conditions	State Only Requirements
Section 9	Standard Permit Conditions	---
Section 10	Attachments	Attachments

Endnotes

¹ The federal PSD program, 40 CFR 52.21, applies in Illinois. The Illinois EPA administers PSD permitting for major projects in Illinois pursuant to a delegation agreement with USEPA.

² Illinois has a state nonattainment NSR program, pursuant to state rules, Major Stationary Sources Construction and Modification ("MSSCM"), 35 IAC Part 203, which have been approved by USEPA as part of the State Implementation Plan for Illinois.

³ The incorporation, or carry-over, of terms or conditions from previous Title I permits into Title V permits typically does not occur on a wholesale basis. Recognizing that construction permits may frequently contain obsolete or extraneous terms and conditions, USEPA has emphasized that only "environmentally significant terms" from previous preconstruction permits must be carried over into Title V permits. See, White Paper for Streamlined Development of Part 70 Permit Applications, dated July 10, 1995. Therefore, certain T1 terms and conditions have not been carried over from these SIP approved permits for reasons that are explained below.

⁴ Among other things, USEPA observed that the stream-lining benefits can consist of "reduced cost and administrative complexity, and continued compliance flexibility...". *White Paper 2*, page 41.

⁵ See, In the Matter of Tesoro Refining and Marketing, Petition No. IX-2004-6, Order Denying in Part and Granting in Part Petition for Objection to Permit, at page 8 (March 15, 2005); see also, White Paper 2 at page 39 ("reference must be detailed enough that the manner in which any referenced materials applies to a facility is clear and is not reasonably subject to misinterpretation").

⁶ The Order provides that permit authorities must ensure the following: "(1) referenced documents be specifically identified; (2) descriptive information such as the title or number of the document and the date of the document be included so that there is no ambiguity as to which version of the document is being referenced; and (3) citations, cross references, and incorporations by reference are detailed enough that the manner in which any referenced material applies to a facility is clear and is not reasonably subject to misinterpretation." See, Petition Response at page 43, citing White Paper 2 at page 37.

⁷ See, White Paper 2 at page 39.

⁸ Nothing in USEPA guidance, including the White Paper 2 or previous orders responding to public petitions, supports the notion that permit authorities incorporating a document by reference must also restate contents of a given plan in the body of the Title V permit. Such an interpretation contradicts USEPA recognition that permit authorities need not restate or recite an incorporated document so long as the document is sufficiently described. White Paper 2 at page 39; see also, In the matter of Consolidated Edison Co. of New York, Inc., 74th St. Station, Petition No. II-2001-02, Order Granting in Part and Denying in Part Petition for Objection to Permit at page 16 (February 19, 2003).

⁹ This approach is consistent with USEPA guidance, which has previously embraced a similar approach to certain SSM plans. See, Letter and Enclosures, dated May 20, 1999, from John Seitz, Director of Office of Air Quality Planning and Standards, to Robert Hodanbosi and Charles Lagges, STAPPA/ALAPCO, pages 9-10 of Enclosure B.

¹⁰ Each incorporated plan addressed by this Section of the Statement of Basis is part of the source's permit file. As such, these plans are available to any person interested in viewing the contents of a given plan may do so at the public repository during the comment period or, alternatively, may request a copy of the same from the Illinois EPA under the Freedom of Information Act. See also 71 FR 20447.

¹¹ The provisions of the Act for Periodic Monitoring in CAAPP permits reflect parallel requirements in the federal guidelines for State Operating Permit Programs, 40 CFR 70.6(a)(3)(i)(A), (a)(3)(i)(B), and (c)(1).

¹² Section 39.5(7)(p)(i) of the Act also provides that a CAAPP permit shall contain "Compliance certification, testing, monitoring, reporting and record keeping requirements sufficient to assure compliance with the terms and conditions of the permit."

¹³ The classic example of regulatory standards for which Periodic Monitoring requirements must be established in a CAAPP permit are state emission standards that pre-date the 1990 Clean Air Act Amendments that were adopted without any associated compliance procedures. Periodic Monitoring must also be established in a CAAPP permit when standards and limits are accompanied by compliance procedures but those procedures are determined to be inadequate to assure compliance with the applicable standards or limits.

¹⁴ Another example of emission standards for which requirements must be established as part of Periodic Monitoring is certain NSPS standards that require initial performance testing but do not require periodic testing or other measures to address compliance with the applicable limits on a continuing basis.

¹⁵ The need to establish Monitoring requirements as part of Periodic Monitoring when existing compliance procedures are determined to be inadequate, as well as when they are absent, was confirmed by the federal appeals court in *Sierra Club v. Environmental Protection Agency*, 536 F.3d 673, 383 U.S. App. D.C. 109.

¹⁶ The need to establish Monitoring requirements as part of Periodic Monitoring is also confirmed in USEPA's Petition Response. USEPA explains that "...if there is periodic monitoring in the applicable requirements, but that monitoring is not sufficient to assure compliance with permit terms and conditions, permitting authorities must supplement monitoring to assure such compliance." Petition Response, page 6.

¹⁷ The test for the adequacy of "Periodic Monitoring" is a context-specific determination, particularly whether the provisions in a Title V permit reasonably address compliance with relevant substantive permit conditions. 40 CFR 70.6(c)(1); see also 40 CFR 70.6(a)(3)(i)(B); see also, *In the Matter of*

CITGO Refinery and Chemicals Company L.P., Petition VI-2007-01 (May 28, 2009); see also, *In the Matter of Waste Management of LA. L.L.C. Woodside Sanitary Landfill & Recycling Center, Walker, Livingston Parish, Louisiana*, Petition VI-2009-01 (May 27, 2010); see also, *In the Matter of Wisconsin Public Service Corporation's JP Pulliam Power Plant*, Petition V-2009-01 (June 28, 2010).

¹⁸ A number of these factors are specifically listed by USEPA in its Petition Response. USEPA also observes that the specific factors that it identifies in its Petition Response with respect to Periodic Monitoring provide "...the permitting authority with a starting point for its analysis of the adequacy of the monitoring; the permitting authority also may consider other site-specific factors." Petition Response, page 7.