INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant

DATE: August 30, 2007

RE: Poet Biorefining - North Manchester Ethanol, LLC / 169-24515-00068

FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

(1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
(2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
(3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

(1) the name and address of the person making the request;
(2) the interest of the person making the request;
(3) identification of any persons represented by the person making the request;
(4) the reasons, with particularity, for the request;
(5) the issues, with particularity, proposed for considerations at any hearing; and
(6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FNPER.dot 03/23/06

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NEW CONSTRUCTION AND FEDERALLY ENFORCEABLE STATE OPERATING PERMIT OFFICE OF AIR QUALITY

POET Biorefining - North Manchester
868 East 800 North
North Manchester, Indiana 46962

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses certain new source review requirements and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-2 and 326 IAC 2-8-11.1, applicable to those conditions.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No.: 169-24515-00068	
Issued by/Original Signed By: Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date: August 30, 2007 Expiration Date: August 30, 2012

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary ethanol production plant.

Source Address:	868 East 800 North, North Manchester, Indiana 46962
Mailing Address:	2209 East 57th Street N, Sioux Falls, South Dakota 57104
General Source Phone Number:	(605) 965-2241
SIC Code:	2869
County Location:	Wabash
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

(a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouse CE001, exhausting through stack SV001, and consisting of the following:

(1) Two (2) truck dump pits, identified as EU001, approved for construction in 2007, with a maximum throughput rate of 840 tons of corn per hour.

(2) Two (2) grain legs and conveying system, identified as EU002, approved for construction in 2007, with a maximum throughput rate of 840 tons per hour.

(3) Six (6) grain bins, identified as EU003, approved for construction in 2007, with a maximum throughput rate of 840 tons per hour.

(b) One (1) corn scalper, identified as EU004, approved for construction in 2007, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouse CE002, and exhausting through stack SV002.

(c) One (1) surge bin, identified as EU005, approved for construction in 2007, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouse CE002, and exhausting through stack SV002.

(d) Five (5) hammermills, identified as EU006, EU007, EU008, EU009, and EU010, approved for construction in 2007, each with a maximum throughput rate of 20 tons of corn per hour, controlled by baghouses CE003, CE004, CE005, CE006, and CE007, respectively, and exhausting through stacks SV003, SV004, SV005, SV006, and SV007, respectively.

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 55,400 gallons per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through SV009. This process consists of the following:

(1) One (1) slurry tank, identified as EU011, approved for construction in 2007.

(2) Five (5) fermenters, identified as EU012 through EU016, approved for construction in 2007.

(3) One (1) yeast propagation tank, identified as EU017, approved for construction in 2007.

(4) One (1) beer well, identified as EU018, approved for construction in 2007.

(f) One (1) regenerative thermal oxidizer, identified as CE009, approved for construction in 2007, with a maximum heat input capacity of 30 MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack SV009.

(g) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 54,000 gallons of ethanol per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through stack SV009. This process consists of the following:

(1) One (1) beer stripper, identified as EU019, approved for construction in 2007.

(2) One (1) rectifier column, identified as EU020, approved for construction in 2007.

(3) One (1) side stripper, identified as EU021, approved for construction in 2007.

(4) One (1) set of three (3) molecular sieves, identified as EU022, approved for construction in 2007.

(5) One (1) set of four (4) evaporators, identified as EU023, approved for construction in 2007.

(h) One (1) set of four (4) centrifuges, identified as EU024, approved for construction in 2007, controlled by thermal oxidizer CE009 during normal operation, with emissions exhausted through stack SV009. During wetcake production, emissions from EU024 are exhausted through bypass stack SV017.

(i) Two (2) natural gas fired DDGS dryers, identified as EU025 and EU026, approved for construction in 2007, each with a maximum heat input rate of 60 MMBtu/hr, with a total maximum throughput rate of 26 tons of DDGS per hour, controlled by multiclones CE013 and CE014, respectively, with emissions venting to thermal oxidizer CE009, and exhausting to stack SV009.

(j) Two (2) natural gas fired boilers, identified as EU027 and EU028, approved for construction in 2007, each with a maximum heat input rate of 143 MMBtu/hr each, with emissions exhausting to stacks SV013 and SV014, respectively.

(k) One (1) fluidized DDGS cooler, identified as EU029, approved for construction in 2007, with a maximum throughput rate of 26 tons/hr of DDGS, controlled by baghouse CE010, and exhausting to stack SV010.

(l) One (1) DDGS handling and storage operation, approved for construction in 2007, with a maximum throughput rate of 220 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS storage silo, identified as EU030, approved for construction in 2007, controlled by baghouse CE011, with emissions exhausted to stack SV011.

(2) One (1) DDGS silo bypass, identified as EU031, approved for construction in 2007, controlled by baghouse CE012, with emissions exhausted to stack SV012.

(3) One (1) DDGS storage building, identified as EU032, approved for construction

in 2007, controlled by baghouse CE016, with emissions exhausted to stack SV018.

(m) One (1) DDGS loadout operation, approved for construction in 2007, with a maximum throughput rate of 220 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS conveyor, identified as EU033, approved for construction in 2007, controlled by baghouse CE016, with emissions exhausted to stack SV018.

(2) One (1) DDGS truck loadout spout, identified as EU034, approved for construction in 2007.

(3) One (1) DDGS rail loadout spout, identified as EU035, approved for construction in 2007, controlled by baghouse CE016, with emissions exhausted to stack SV018.

(n) One (1) ethanol loading system, identified as EU036, consisting of one (1) rack for trucks and two (2) racks for railcars, approved for construction in 2007, with a maximum throughput rate of 39,000 gallons per hour when loading trucks, and 144,000 gallons per hour when loading railcars. This unit is controlled by enclosed flare CE015, which is fueled by natural gas and has a pilot gas flare heat input capacity of 54,000 Btu/hr, and exhausts through stack SV016.

(o) One (1) diesel generator, identified as EU037, approved for construction in 2007, with a maximum power output rate of 2,640 HP, and exhausting to stack SV015.

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(b) Forced and induced draft cooling tower system not regulated under a NESHAP.

(c) Replacement or repair of bags in baghouses and filters in other air filtration equipment.

(d) Paved roads and parking lots with public access. [326 IAC 6-4]

(e) Underground conveyors, including underground grain and product transfer conveyors.

(f) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

(g) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) off spec tank for 190-proof ethanol, identified as T001, approved for construction in 2007, with a maximum capacity of 250,000 gallons. [40 CFR 60, Subpart Kb]

(2) One (1) tank for 200-proof ethanol, identified as T002, approved for construction in 2007, with a maximum capacity of 250,000 gallons of 200-proof ethanol. [40 CFR 60, Subpart Kb]

(3) One (1) denatured ethanol tank, identified as T003, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(4) One (1) denatured ethanol tank, identified as T004, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(5) One (1) denaturant tank, identified as T005, approved for construction in 2007, with a maximum capacity of 126,900 gallons of natural gasoline. [326 IAC 8-9] [40 CFR 60, Subpart Kb]

(6) One (1) diesel storage tank, identified as T006, approved for construction in 2007, with a maximum storage capacity less than 2,000 gallons of diesel fuel.

(7) One (1) thin stillage tank, identified as T007, approved for construction in 2007, with a maximum storage capacity of 500,000 gallons of thin stillage.

(8) One (1) syrup tank, identified as T008, approved for construction in 2007, with a maximum storage capacity of 61,000 gallons of syrup.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Revocation of Permits [326 IAC 2-1.1-9(5)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.3 Affidavit of Construction [326 IAC 2-5.1-3(h)] [326 IAC 2-5.1-4][326 IAC 2-8]

This document shall also become the approval to operate pursuant to 326 IAC 2-5.1-4 and [326 IAC 2-8] when prior to the start of operation, the following requirements are met:

(a) The attached Affidavit of Construction shall be submitted to the Office of Air Quality (OAQ), verifying that the emission units were constructed as proposed in the application or the permit. The emission units covered in this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emission units differs from the construction proposed in the application, the source may not begin operation until the permit has been revised pursuant to 326 IAC 2 and an Operation Permit Validation Letter is issued.

(c) The Permittee shall attach the Operation Permit Validation Letter received from the Office of Air Quality (OAQ) to this permit.

B.4 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, 169-24515-00068, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

B.5 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.6 Enforceability [326 IAC 2-8-6]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.7 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.8 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.9 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1)

B.12 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

(a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) prior to startup of operations, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.14 Emergency Provisions [326 IAC 2-8-12]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation except as provided in 326 IAC 2-8-12.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly

signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865

(5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

(g) Operations may continue during an emergency only if the following conditions are met:

(1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

(2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:

(A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and

(B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

(h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.15 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to F169-24515-00068 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted

(b) All previous registrations and permits are superseded by this permit.

B.16 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.17 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

(a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement

that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.18 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.19 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40) The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.20 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this.

(b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.21 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(2), (c)(1), and (d).

(b) Emission Trades [326 IAC 2-8-15(c)]
The Permittee may trade emissions increases and decreases at in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).

(c) Alternative Operating Scenarios Federally Enforceable State Operating Permit
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.22 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1

B.23 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee’s right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

(a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.24 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.25 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ, the applicable fee is due April 1 of each year.

(b) Failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.26 Advanced Source Modification Approval [326 IAC 2-8-4(11)] [326 IAC 2-1.1-9]

(a) The requirements to obtain a permit modification under 326 IAC 2-8-11.1 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.1 and A.2.

(b) Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction, work is suspended for a continuous period of one (1) year or more.

B.27 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314] [326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period. This limitation shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(b) The potential to emit particulate matter (PM) from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period. This limitation shall make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.6 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.7 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, MC 61-52 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers

and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Testing Requirements [326 IAC 2-8-4(3)]

C.9 Performance Testing [326 IAC 3-6]

(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, ***if*** the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.10 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.11 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented prior to startup of operations. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated prior to startup of operations, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

C.12 Maintenance of Continuous Emission Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous emission monitoring systems (CEMS) and related equipment.

(b) In the event that a breakdown of a continuous emission monitoring system occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(c) Whenever a continuous emission monitor or predictive emission monitor (PEM) other than an opacity monitor is malfunctioning or will be down for calibration, maintenance, or repairs for a period of four (4) hours or more, a calibrated backup CEMS shall be brought online within four (4) hours of shutdown of the primary CEMS, and shall be operated until such time as the primary CEMS is back in operation.

(d) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous emission monitoring system pursuant to 40 CFR 60, Subpart Db.

C.13 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.14 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative [326 IAC 2-8-4][326 IAC 2-8-5] or other instrument specification will

adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.15 Risk Management Plan[326 IAC 2-8-4] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.16 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

(a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:

(1) initial inspection and evaluation

(2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records;

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall maintain the following records:

(1) monitoring data;

(2) monitor performance data, if applicable; and

(3) corrective actions taken.

C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.18 General Record Keeping Requirements[326 IAC 2-8-4(3)] [326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented prior to startup of operations.

C.19 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

(d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.20 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.

(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS – Grain and DDGS Handling Processes

Facility Description [326 IAC 2-8-4(10)] :

(a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouse CE001, exhausting through stack SV001, and consisting of the following:

(1) Two (2) truck dump pits, identified as EU001, approved for construction in 2007, with a maximum throughput rate of 840 tons of corn per hour.

(2) Two (2) grain legs and conveying system, identified as EU002, approved for construction in 2007, with a maximum throughput rate of 840 tons per hour.

(3) Six (6) grain bins, identified as EU003, approved for construction in 2007, with a maximum throughput rate of 840 tons per hour.

(b) One (1) corn scalper, identified as EU004, approved for construction in 2007, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouse CE002, and exhausting through stack SV002.

(c) One (1) surge bin, identified as EU005, approved for construction in 2007, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouse CE002, and exhausting through stack SV002.

(d) Five (5) hammermills, identified as EU006, EU007, EU008, EU009, and EU010, approved for construction in 2007, each with a maximum throughput rate of 20 tons of corn per hour, controlled by baghouses CE003, CE004, CE005, CE006, and CE007, respectively, and exhausting through stacks SV003, SV004, SV005, SV006, and SV007, respectively.

(l) One (1) DDGS handling and storage operation, approved for construction in 2007, with a maximum throughput rate of 220 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS storage silo, identified as EU030, approved for construction in 2007, controlled by baghouse CE011, with emissions exhausted to stack SV011.

(2) One (1) DDGS silo bypass, identified as EU031, approved for construction in 2007, controlled by baghouse CE012, with emissions exhausted to stack SV012.

(3) One (1) DDGS storage building, identified as EU032, approved for construction in 2007, controlled by baghouse CE001, with emissions exhausted to stack SV001.

(m) One (1) DDGS loadout operation, approved for construction in 2007, with a maximum throughput rate of 220 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS conveyor, identified as EU033, approved for construction in 2007, controlled by baghouse CE001, with emissions exhausted to stack SV001.

(2) One (1) DDGS truck loadout spout, identified as EU034, approved for construction in 2007.

(3) One (1) DDGS rail loadout spout, identified as EU035, approved for construction in 2007, controlled by baghouse CE001, with emissions exhausted to stack SV001.

Insignificant Activity:

(d) Paved roads and parking lots with public access. [326 IAC 6-4]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.1.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.1.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.1.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.4 PM and PM10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the grain receiving and DDGS handling operations:

(a) The PM and PM10 emissions from the following units shall not exceed the emission limits listed in the table below.

Unit ID	Unit Description	Baghouse ID	PM/PM10 Emission Limit (lbs/hr)
EU001, EU002, EU003, EU032, EU033, EU035	Grain Receiving, Conveyors, and Storage Bins	CE001	1.2
EU032, EU033, EU035	DDGS conveying, storage, and loadout	CE016	0.69
EU004, EU005	Corn Scalper, Surge Bin	CE002	0.09
EU006	Hammermill #1	CE003	0.41
EU007	Hammermill #2	CE004	0.41
EU008	Hammermill #3	CE005	0.41
EU009	Hammermill #4	CE006	0.41
EU010	Hammermill #5	CE007	0.41
EU030	DDGS Silo Loading	CE011	0.14
EU031	DDGS Silo Bypass	CE012	0.14

(b) The total grain received shall not exceed 683,280 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total DDGS produced shall not exceed 201,480 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be applied in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2 and 326 IAC 2-8.

Combined with the PM/PM10 emissions from other emission units, the PM/PM10 emissions from the entire source are limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.1.5 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of following operations shall not exceed the pound per hour limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU001, EU002, EU003	Grain Receiving, Conveyors, and Storage Bins	840	75.4
EU004, EU005	Corn Scalper, Surge Bin	140	54.7
EU006	Hammermill #1	20	30.5
EU007	Hammermill #2	20	30.5
EU008	Hammermill #3	20	30.5
EU009	Hammermill #4	20	30.5
EU010	Hammermill #5	20	30.5
EU030	DDGS Silo Loading	26	36.4
EU031	DDGS Silo Bypass	26	36.4
EU032	DDGS Storage Building	220	59.5
EU033	DDGS Conveyor	220	59.5
EU035	DDGS Rail Loadout Spout	220	59.5

The pounds per hour limitations were calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limits shown in the table above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gases.

D.1.6 The New Source Performance Standards for Grain Elevators [40 CFR 60, Subpart DD]

The New Source Performance Standards for Grain Elevators, Subpart DD apply to the rail corn receiving, storage, and handling equipment (EU001-005). These requirements include but are not limited to the following:

(a) Any grain handling operations other than grain dryers shall not emit particulate matter in excess of 0.023 g/dscm (0.01 gr/dscf) and shall not exhibit greater than 0% opacity.

(b) Fugitive particulate matter emissions from railcar unloading shall not exhibit greater than 5% opacity.

D.1.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Determination Requirements

D.1.8 Particulate Control

(a) In order to comply with Conditions D.1.4(a) and D.1.5, each of the following emission units shall be controlled by the associated baghouse, as listed in the table below, when these units are in operation:

Unit ID	Unit Description	Baghouse ID
EU001, EU002, EU003	Grain Receiving, Conveyors, and Storage Bins	CE001
EU032, EU033, EU035	DDGS conveying, storage, and loadout	CE016
EU004, EU005	Corn Scalper, Surge Bin	CE002
EU006	Hammermill #1	CE003
EU007	Hammermill #2	CE004
EU008	Hammermill #3	CE005
EU009	Hammermill #4	CE006
EU010	Hammermill #5	CE007
EU030	DDGS Silo Loading	CE011
EU031	DDGS Silo Bypass	CE012

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.1.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.4(a), D.1.5 and D.1.6, the Permittee shall perform PM and PM10 testing for one of baghouses CE001 through CE007, and one of baghouses CE011 or CE012, within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated on a different baghouse at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 includes filterable and condensible PM10.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.1.10 Visible Emissions Notations

(a) Visible emission notations of the baghouse stack exhausts (stacks SV001 through SV007, SV011, SV012, and SV018) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee or contractor is a person who has worked or trained at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.1.11 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving and handling operations (EU001 through EU005), the hammermills (EU006 through EU010), and the DDGS handling and loadout operations (EU030 through EU033, and EU035), at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(b) The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated at least once every six (6) months.

D.1.12 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.13 Record Keeping Requirements

(a) To document compliance with Condition D.1.4(b), the Permittee shall maintain monthly records of the amount of grain received at this plant.

(b) To document compliance with Condition D.1.4(c), the Permittee shall maintain monthly records of the amount of DDGS produced.

(c) To document compliance with Condition D.1.10, the Permittee shall maintain a daily record of visible emission notations of the baghouse stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (i.e., the process did not operate that day).

(d) To document compliance with Condition D.1.11, the Permittee shall maintain a daily record of the pressure drop across the baghouse controlling the process. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (i.e., the process did not operate that day).

(e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.14 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.4(b) and D.1.4(c) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 FACILITY OPERATION CONDITIONS – Fermentation/Distillation and DDGS Drying

Facility Description [326 IAC 2-8-4(10)]:

(e) One (1) fermentation process, approved to be constructed in 2007, with a maximum throughput rate of 55,400 gallons per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through stack SV009. This process consists of the following:

(1) One (1) slurry tank, identified as EU011, approved to be constructed in 2007.

(2) Five (5) fermenters, identified as EU012 through EU016, approved to be constructed in 2007.

(3) One (1) yeast propagation tank, identified as EU017, approved to be constructed in 2007.

(4) One (1) beer well, identified as EU018, approved to be constructed in 2007.

(f) One (1) regenerative thermal oxidizer, identified as CE009, constructed in 2007, with a maximum heat input capacity of 30 MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack SV009.

(g) One (1) distillation process, approved to be constructed in 2007, with a maximum throughput rate of 54,000 gallons of ethanol per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through SV009. This process consists of the following:

(1) One (1) beer stripper, identified as EU019, approved to be constructed in 2007.

(2) One (1) rectifier column, identified as EU020, approved to be constructed in 2007.

(3) One (1) side stripper, identified as EU021, approved to be constructed in 2007.

(4) One (1) set of three (3) molecular sieves, identified as EU022, approved to be constructed in 2007.

(5) One (1) set of four (4) evaporators, identified as EU023, approved to be constructed in 2007.

(h) One (1) set of four (4) centrifuges, identified as EU024, approved to be constructed in 2007, controlled by thermal oxidizer CE009 during normal operation, with emissions exhausted through stack SV009. During wetcake production, emissions from EU024 are exhausted through bypass stack SV017.

(i) Two (2) natural gas fired DDGS dryers, identified as EU025 and EU026, approved to be constructed in 2007, each with a maximum heat input rate of 60 MMBtu/hr, with a total maximum throughput rate of 26 tons of DDGS per hour, controlled by multiclones CE013 and CE014, respectively, with emissions venting to thermal oxidizer CE009, and exhausting to stack SV009.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.2.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.2.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.2.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable:

(1) The Permittee shall comply with the following emission limits for the RTO system (CE009), which is used to control the emissions from the fermentation and distillation processes, and the DDGS dryers (EU025 and EU026):

(a) PM/PM10 emissions shall not exceed 6.90 lbs/hr.

(b) VOC emissions shall not exceed 10.5 lbs/hr.

(c) CO emissions shall not exceed 10.5 lbs/hr.

(d) NOx emissions shall not exceed 11.0 lbs/hr.

(e) SO2 emissions shall not exceed 10.8 lbs/hr.

(f) Acetaldehyde emissions shall not exceed 0.54 lbs/hr.

(g) Total HAP emissions shall not exceed 0.98 lbs/hr.

(2) The Permittee shall comply with the following requirements for the fermentation and distillation scrubber (CE008):

(1) The scrubber (CE008) shall not vent to the atmosphere more than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) VOC emissions shall not exceed 30.8 lbs/hr.

(3) Acetaldehyde emissions shall not exceed 2.9 lbs/hr.

Combined with the PM/PM10, VOC, SO_2, CO, and NOx emissions from other units, the PM/PM10, SO_2, VOC, CO, NOx emissions from the entire source are each limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the

entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.2.5 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6, the Permittee shall control the VOC emissions from the fermentation and distillation processes and the DDGS dryers (EU025 and EU026) using the following controls:

(a) The VOC emissions from the fermentation and distillation process shall be controlled by scrubber CE008 when venting to the emergency stack, or by the combination of scrubber CE008 followed by a thermal oxidizer CE009.

(b) The overall efficiency for the scrubber CE008 and thermal oxidizer CE009 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The overall efficiency for the scrubber CE008 (including the capture efficiency and the destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(d) The VOC emissions from the DDGS dryers (EU025 and EU026) shall be controlled by thermal oxidizer CE009.

(e) The overall efficiency for the thermal oxidizer CE009 controlling the DDGS dryers (EU025 and EU026) (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

D.2.6 Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry [40 CFR Part 60, Subpart VV] [326 IAC 12]

Pursuant to 40 CFR 60, Subpart VV, the Permittee shall comply with the requirement of Section E.1 for pumps; compressors; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

D.2.7 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU025	DDGS Dryer	26.0	36.4
EU026	DDGS Dryer	26.0	36.4

The pounds per hour limitations were calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.2.8 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Determination Requirements

D.2.9 VOC and HAP Control

In order to comply with Conditions D.2.4 and D.2.5:

(a) The scrubber CE008 shall be in operation, and control emissions from the fermentation and distillation processes at all times that the fermentation and distillation processes are in operation.

(b) Thermal oxidizer CE009 shall be in operation and control emissions from the DDGS dryers (EU025 and EU026) at all times that the dryers are in operation and the scrubber CE008 and thermal oxidizer CE009 shall be in operation, and control emissions from the fermentation and distillation processes at all times that these units are in operation.

D.2.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6]

In order to demonstrate compliance with Conditions D.2.4, D.2.5, and D.2.7:

(a) The Permittee shall perform PM, PM10, VOC (including emission rate, and destruction efficiency), NOx, SO2, CO, and Acetaldehyde testing for the RTO system stack (SV009) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM10 includes filterable and condensible PM10. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

(b) The Permittee shall perform VOC and Acetaldehyde (including emission rate, and destruction efficiency) testing for the scrubber (CE008) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.2.11 Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the RTO system stack (SV009) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.12 Thermal Oxidizer Temperature [326 IAC 8-5-6]

To demonstrate compliance with 326 IAC 8-5-6, the Permittee shall meet the following requirements:

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the RTO system (CE009) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as 3-hour average. From the date of startup until the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature of 1,400°F.

(b) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in Conditions D.2.4 and D.2.5, as approved by IDEM.

(c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test.

D.2.13 Parametric Monitoring [326 IAC 8-5-6]

(a) The Permittee shall determine the appropriate duct pressure or fan amperage from the most recent valid stack test that demonstrates compliance with limits in Conditions D.2.4 and D.2.5, as approved by IDEM.

(b) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

D.2.14 Scrubber Pressure Drop and Flow Rate [326 IAC 8-5-6]

The Permittee shall monitor and record the pressure drop and the flow rate of the scrubber CE008 at least once per day when the fermentation and/or the distillation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 2.0 and 8.0 inches of water, or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. When for any one reading, the flow rate of the scrubber is less than the normal minimum of 35 gallons per minute, or a minimum established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range or a flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

The instruments used for determining the pressure drop and flow rate shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.2.15 Scrubber Detection

In the event that a scrubber malfunction has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16] [326 IAC 8-5-6]

D.2.16 Record Keeping Requirements

(a) To document compliance with Condition D.2.4(b)(1), the Permittee shall maintain monthly records of the amount of hours the scrubber (CE008) is vented to the atmosphere.

(b) To document compliance with Condition D.2.11, the Permittee shall maintain a daily record of visible emission notations of the stack SV009. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(c) To document compliance with Condition D.2.12, the Permittee shall maintain continuous temperature records for the thermal oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(d) To document compliance with Condition D.2.13, the Permittee shall maintain a daily record of the duct pressure or fan amperage for the RTO system (CE009). The Permittee shall include in its daily record when the duct pressure or fan amperage is not taken and the reason for the lack of the reading (e.g., the process did not operate that day).

(e) To document compliance with Condition D.2.14, the Permittee shall maintain a daily record of pressure drop and flow rate for scrubber CE008. The Permittee shall include in its daily record when pressure drop and flow rate are not taken and the reason for the lack of the readings (e.g., the process did not operate that day).

(f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.3 FACILITY OPERATION CONDITIONS – Boilers

Facility Description [326 IAC 2-8-4(10)]:

(j) Two (2) natural gas fired boilers, identified as EU027 and EU028, approved to be constructed in 2007, each with a maximum heat input rate of 143 MMBtu/hr, with emissions exhausting to stacks SV013 and SV014, respectively.

Under 40 CFR, Subpart Db, the two (2) boilers are considered to be new steam generating units.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.3.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.3.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.3.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.3.4 Nitrogen Oxides (NOx) [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(a) The input of the natural gas to the boilers shall be limited to less than 2,505.4 MMCF per 12 consecutive month period, with compliance determined at the end of each month.

(b) NOx emissions from each boiler shall not exceed 35 pounds per MMCF.

Combined with the NOx emissions from other units, the NOx emissions from the entire source are limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.3.5 CO Emissions [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(a) The input of natural gas to the boilers shall be limited to less than 2,505.4 MMCF per 12 consecutive month period, with compliance determined at the end of each month.

(b) CO emissions from the boilers shall not exceed 40 pounds per MMCF.

Combined with the CO emissions from other units, the CO emissions from the entire source are limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.3.6 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating: Emission Limitations for facilities specified in 326 IAC 6-2-1(d)), the PM emissions from the boilers shall not exceed 0.250 pounds per million Btu heat input (lb/MMBtu). This limitation was calculated using the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

where Q = total source heat input capacity (MMBtu/hr)
For these units, Q = 286 MMBtu/hr.

D.3.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their control devices.

Compliance Determination Requirements

D.3.8 Testing Requirements [326 IAC 2-8-5(a) (1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.3.4 and D.3.5, the Permittee shall perform NOx and CO testing for the boilers, within sixty (60) days after achieving the maximum capacity, but not later than one hundred eighty (180) days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.3.9 Record Keeping Requirements

(a) To document compliance with Conditions D.3.4 and D.3.5, the Permittee shall maintain daily records of the amount of fuel combusted in the boilers.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.10 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.3.4 and D.3.5 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1(7).

SECTION D.4 FACILITY OPERATION CONDITIONS – DDGS Cooler

Facility Description [326 IAC 2-8-4(10)] :

(k) One (1) fluidized DDGS cooler, identified as EU029, approved to be constructed in 2007, with a maximum throughput rate of 26 tons/hr of DDGS, controlled by baghouse CE010, and exhausting to stack SV010.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.4.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.4.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.4.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.4.4 PM and PM10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(a) The PM/PM10 emissions from the DDGS cooler, which is controlled by baghouse CE010, shall not exceed the 0.82 lbs/hr.

Combined with the PM/PM10 emissions from other emission units, the PM/PM10 emissions from the entire source are limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.4.5 VOC Emissions [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(a) VOC emissions from EU029, exhausting to stack SV010 shall not exceed 5.0 lbs/hr.

(b) Acetaldehyde emissions from EU029, exhausting to stack SV010 shall not exceed 1.12 lbs/hr.

Combined with the VOC emissions from other emission units, the VOC emissions from the entire source are limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70

Program) and 326 IAC 2-2 (PSD) are not applicable. Combined with Acetaldehyde emissions from other units, emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.4.6 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from the DDGS cooler (EU029) shall not exceed 36.4 pounds per hour when operating at the maximum process throughput rate of 26 tons per hour.

The pounds per hour limitation was calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.4.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control device.

Compliance Determination Requirements

D.4.8 Particulate Control

(a) In order to comply with Conditions D.4.4(a) and D.4.6, Baghouse CE010 shall be in operation and control emissions from the DDGS cooler (EU029) at all times that this unit is in operation.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.4.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.4.4, D.4.5 and D.4.6, the Permittee shall perform PM, PM10, acetaldehyde and VOC testing for the DDGS cooler (EU029) within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 includes filterable and condensible PM10.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.4.10 Visible Emissions Notations

(a) Visible emission notations of the baghouse stack exhaust (stack SV010) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee or contractor is a person who has worked or trained at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.4.11 Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouse used in conjunction with the DDGS cooler (EU029) at least once per day when this unit is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(b) The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated at least once every six (6) months.

D.4.12 Broken or Failed Bag Detection

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.4.13 Record Keeping Requirements

(a) To document compliance with Condition D.4.10, the Permittee shall maintain a daily record of visible emission notations of the baghouse stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(b) To document compliance with Condition D.4.11, the Permittee shall maintain a daily record of the pressure drop across the baghouse controlling the process. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.5 FACILITY OPERATION CONDITIONS – Ethanol Loading Racks

Facility Description [326 IAC 2-8-4(10)]:

(n) One (1) ethanol loading system, identified as EU036, consisting of one (1) rack for trucks and two (2) racks for railcars, approved to be constructed in 2007, with a maximum throughput rate of 39,000 gallons per hour when loading trucks, and 144,000 gallons per hour when loading railcars. This unit is controlled by enclosed flare CE015, which is fueled by natural gas and has a pilot gas flare heat input capacity of 54,000 Btu/hr, and exhausting through stack SV016.

Under NSPS, Subpart VV, equipment (as defined in 40 CFR 60.481) within a process unit is an affected facility.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 326 IAC 2-8-11.1, WITH CONDITIONS LISTED BELOW.

Construction Conditions

General Construction Conditions

D.5.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

D.5.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

D.5.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

Operation Conditions

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.5.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the ethanol loading racks:

(a) The total denatured ethanol loadout from loading rack EU036 shall not exceed 69,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) The Permittee shall use flare CE015 to control the emissions from the ethanol loading rack (EU036).

(c) CO emissions from flare CE015 shall not exceed 0.084 lbs/kgal.

(d) NOx emissions from flare CE015 shall not exceed 0.0334 lbs/kgal.

(e) The ethanol loading rack shall utilize submerged loading method when loading trucks and railcars.

(f) The railcars and trucks shall not use vapor balance services during ethanol loading.

(g) The flare CE015 shall be designed as a smokeless flare.

(h) The VOC emissions from enclosed flare CE015 shall not exceed 0.765 lbs/hr.

Combined with the VOC, CO, NOx and HAP emissions from other units, the VOC, CO, and NOx emissions from the entire source are each limited to less than 100 tons/yr and the HAP emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.5.5 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6, the Permittee shall collect and control the VOC emissions from the ethanol loading rack (EU036), using the following:

(a) The VOC emissions from the ethanol loading rack (EU036) shall be collected and controlled by enclosed flare CE015.

(b) The overall control efficiency for the vapor collection system and enclosed flare CE015 (including the capture efficiency and destruction efficiency) shall be at least 98%.

D.5.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Compliance Determination Requirements

D.5.7 VOC Control

In order to comply with Conditions D.5.4 and D.5.5, enclosed flare CE015 shall be in operation and control emissions from the ethanol loading rack (EU036) at all times when this unit is in operation.

D.5.8 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6]

In order to demonstrate compliance with Conditions D.5.4 and D.5.5, the Permittee shall perform VOC (including emission rate, destruction efficiency, and capture efficiency), CO, and NOx testing for enclosed flare CE015, within 60 days after achieving the maximum production, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.5.9 Flare Pilot Flame [326 IAC 8-5-6]

In order to comply with Conditions D.5.4 and D.5.5, the Permittee shall monitor the presence of a flare pilot flame for flare CE015 using a thermocouple or any other equivalent device to detect the presence of a flame when ethanol loading rack EU036 is in operation.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.5.10 Record Keeping Requirements

(a) To document compliance with Condition D.5.4(a), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out from loading rack EU036.

(b) To document compliance with Condition D.5.10, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when loading rack EU036 is in operation.

(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.5.11 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.5.4(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1(7).

SECTION D.6 FACILITY OPERATION CONDITIONS – Diesel Generator

Facility Description [326 IAC 2-8-4(10)]: Insignificant Activities

(o) One (1) diesel Generator, identified as EU037, approved to be constructed in 2007, with a maximum power output rate of 2,640 horsepower, and exhausting to stack SV015.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.6.1 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP) and to render 326 IAC 2-2 (PSD) not applicable, the permittee shall comply with the following limits for diesel generator EU037:

(a) The operating hours for the diesel generator (EU037) shall not exceed 100 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) CO Emissions from EU037 shall not exceed 1.21 lbs/hr.

Combined with emission limits from other emission units, the emissions of each regulated pollutant from the entire source are each limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

D.6.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60, IIII] [326 IAC 12]

Pursuant to 40 CFR 60, Subpart IIII, the permittee shall comply with the requirements of Section E.4 for emergency generator EU037.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.6.3 Record Keeping Requirements

(a) To document compliance with Condition D.6.1(a), the Permittee shall maintain monthly records of the operating hours for the diesel generator (EU036).

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.6.4 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.6.1(a) shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.7 FACILITY OPERATION CONDITIONS – Storage Tanks

Facility Description [326 IAC 2-8-4(10)]:

Insignificant Activities

(g) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) off spec tank for 190-proof ethanol, identified as T001, approved for construction in 2007, with a maximum capacity of 250,000 gallons. [40 CFR 60, Subpart Kb]

(2) One (1) tank for 200-proof ethanol, identified as T002, approved for construction in 2007, with a maximum capacity of 250,000 gallons of 200-proof ethanol. [40 CFR 60, Subpart Kb]

(3) One (1) denatured ethanol tank, identified as T003, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(4) One (1) denatured ethanol tank, identified as T004, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(5) One (1) denaturant tank, identified as T005, approved for construction in 2007, with a maximum capacity of 126,900 gallons of natural gasoline. [40 CFR 60, Subpart Kb]

Under 40 CFR 60, Subpart Kb, storage tanks T001 through T005 are considered to be new volatile organic liquid storage tanks.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.7.1 Volatile Organic Compounds (VOC) [326 IAC 8-4-3]

(a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank T005 shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.

(b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, are equipped with covers, lids, or seals such that:

(1) The cover, lid or seal in the closed potion at all times except when in actual use;

(2) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

(3) Rim vents, if provided, are set to open when the roof is being floated off the roof

leg supports or at the manufacturer's recommended setting.

(c) Pursuant to 326 IAC 8-4-3(d) (Petroleum Liquid Storage Facilities), the Permittee shall maintain the following records for a period of two (2) years for tank T005:

(1) The types of volatile petroleum liquid stored;

(2) The maximum true vapor pressure of the liquids as stored; and

(3) The results of the inspections performed on the storage vessels.

The above records shall be made available to the IDEM, OAQ upon written request.

D.7.2 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.7.3 Record Keeping Requirements

(a) To document compliance with Condition D.7.1, the Permittee shall maintain the following records for tank T005:

(1) The types of volatile petroleum liquid stored;

(2) The maximum true vapor pressure of the liquids as stored; and

(3) The results of the inspections performed on the storage vessels.

(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION E.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 55,400 gallons per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through stack SV009. This process consists of the following:

(1) One (1) slurry tank, identified as EU011, approved for construction in 2007.

(2) Five (5) fermenters, identified as EU012 through EU016, approved for construction in 2007.

(3) One (1) yeast propagation tank, identified as EU017, approved for construction in 2007.

(4) One (1) beer well, identified as EU018, approved for construction in 2007.

Under NSPS, Subpart VV, equipment (as defined in 40 CFR 60.481) within a process unit is an affected facility.

(g) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 54,000 gallons of ethanol per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through stack SV009. This process consists of the following:

(1) One (1) beer stripper, identified as EU019, approved for construction in 2007.

(2) One (1) rectifier column, identified as EU020, approved for construction in 2007.

(3) One (1) side stripper, identified as EU021, approved for construction in 2007.

(4) One (1) set of three (3) molecular sieves, identified as EU022, approved for construction in 2007.

(5) One (1) set of four (4) evaporators, identified as EU023, approved for construction in 2007.

Under NSPS, Subpart VV, equipment (as defined in 40 CFR 60.481) within a process unit is an affected facility.

(h) One (1) set of four (4) centrifuges, identified as EU024, approved for construction in 2007, controlled by thermal oxidizer CE009 during normal operation, with emissions exhausted through tack SV009. During wetcake production, emissions from EU024 are exhausted through bypass stack SV017.

(n) One (1) ethanol loading system, identified as EU036, consisting of one (1) rack for trucks and two (2) racks for railcars, approved for construction in 2007, with a maximum throughput rate of 39,000 gallons per hour when loading trucks, and 144,000 gallons per hour when loading railcars. This unit is controlled by enclosed flare CE015, which is fueled by natural gas and has a pilot gas flare heat input capacity of 54,000 Btu/hr, and exhausts through stack SV016.

Under NSPS, Subpart VV, equipment (as defined in 40 CFR 60.481) within a process unit is an affected facility.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1, except as otherwise specified in 40 CFR Part 60, Subpart VV.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry [40 CFR Part 60, Subpart VV] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart VV, the Permittee shall comply with the provisions of Standard of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry, which are incorporated by reference as 326 IAC 12, as specified as follows:

Subpart VV—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

Source: 48 FR 48335, Oct. 18, 1983, unless otherwise noted.

§ 60.480 Applicability and designation of affected facility.

(a)(1) The provisions of this subpart apply to affected facilities in the synthetic organic chemicals manufacturing industry.

(2) The group of all equipment (defined in §60.481) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction or modification after January 5, 1981, shall be subject to the requirements of this subpart.

(c) Addition or replacement of equipment for the purpose of process improvement which is accomplished without a capital expenditure shall not by itself be considered a modification under this subpart.

(d)(1) If an owner or operator applies for one or more of the exemptions in this paragraph, then the owner or operator shall maintain records as required in §60.486(i).

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) is exempt from §60.482.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §60.482.

(4) Any affected facility that produces beverage alcohol is exempt from §60.482.

(5) Any affected facility that has no equipment in VOC service is exempt from §60.482.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with the provisions of 40 CFR part 65, subpart F, to satisfy the requirements of §§60.482 through 60.487 for an affected facility. When choosing to comply with 40 CFR part 65, subpart F, the requirements of §60.485(d), (e), and (f), and §60.486(i) and (j) still apply. Other provisions applying to an owner or operator who chooses to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not

apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.481 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of part 60, and the following terms shall have the specific meanings given them.

Capital expenditure means, in addition to the definition in 40 CFR 60.2, an expenditure for a physical or operational change to an existing facility that:

(a) Exceeds P, the product of the facility's replacement cost, R, and an adjusted annual asset guideline repair allowance, A, as reflected by the following equation: $P = R \times A$, where

(1) The adjusted annual asset guideline repair allowance, A, is the product of the percent of the replacement cost, Y, and the applicable basic annual asset guideline repair allowance, B, divided by 100 as reflected by the following equation:

$A = Y \times (B \div 100)$;

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 1982 minus the year of construction; and

(3) The applicable basic annual asset guideline repair allowance, B, is selected from the following table consistent with the applicable subpart:

Table for Determining Applicable for B

Subpart applicable to facility	Value of B to be used in equation
VV	12.5
DDD	12.5
GGG	7.0
KKK	4.5

Closed vent system means a system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections, and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Connector means flanged, screwed, welded, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment.

Control device means an enclosed combustion device, vapor recovery system, or flare.

Distance piece means an open or enclosed casing through which the piston rod travels, separating the compressor cylinder from the crankcase.

Double block and bleed system means two block valves connected in series with a bleed valve or line that can vent the line between the two block valves.

Duct work means a conveyance system such as those commonly used for heating and ventilation systems. It is often made of sheet metal and often has sections connected by screws or crimping. Hard-piping is not ductwork.

Equipment means each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, and flange or other connector in VOC service and any devices or systems required by this subpart.

First attempt at repair means to take rapid action for the purpose of stopping or reducing leakage of organic material to atmosphere using best practices.

Fuel gas means gases that are combusted to derive useful work or heat.

Fuel gas system means the offsite and onsite piping and flow and pressure control system that gathers gaseous stream(s) generated by onsite operations, may blend them with other sources of gas, and transports the gaseous stream for use as fuel gas in combustion devices or in-process combustion equipment, such as furnaces and gas turbines, either singly or in combination.

Hard-piping means pipe or tubing that is manufactured and properly installed using good engineering judgment and standards such as ASME B31.3, Process Piping (available from the American Society of Mechanical Engineers, PO Box 2900, Fairfield, NJ 07007–2900).

In gas/vapor service means that the piece of equipment contains process fluid that is in the gaseous state at operating conditions.

In heavy liquid service means that the piece of equipment is not in gas/vapor service or in light liquid service.

In light liquid service means that the piece of equipment contains a liquid that meets the conditions specified in §60.485(e).

In-situ sampling systems means nonextractive samplers or in-line samplers.

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals (kPa)(0.7 psia) below ambient pressure.

In VOC service means that the piece of equipment contains or contacts a process fluid that is at least 10 percent VOC by weight. (The provisions of §60.485(d) specify how to determine that a piece of equipment is not in VOC service.)

Liquids dripping means any visible leakage from the seal including spraying, misting, clouding, and ice formation.

Open-ended valve or line means any valve, except safety relief valves, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Pressure release means the emission of materials resulting from system pressure being greater than set pressure of the pressure relief device.

Process improvement means routine changes made for safety and occupational health requirements, for energy savings, for better utility, for ease of maintenance and operation, for correction of design deficiencies, for bottleneck removal, for changing product requirements, or for environmental control.

Process unit means components assembled to produce, as intermediate or final products, one or more of the chemicals listed in §60.489 of this part. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product.

Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit. An unscheduled work practice or operational procedure that stops production from a process unit or part of a process unit for less than 24 hours is not a process unit shutdown. The use of spare equipment and technically feasible bypassing of equipment without stopping production are not process unit shutdowns.

Quarter means a 3-month period; the first quarter concludes on the last day of the last full month during the 180 days following initial startup.

Repaired means that equipment is adjusted, or otherwise altered, in order to eliminate a leak as indicated by one of the following: an instrument reading of 10,000 ppm or greater, indication of liquids dripping, or indication by a sensor that a seal or barrier fluid system has failed.

Replacement cost means the capital needed to purchase all the depreciable components in a facility.

Sampling connection system means an assembly of equipment within a process unit used during periods

of representative operation to take samples of the process fluid. Equipment used to take nonroutine grab samples is not considered a sampling connection system.

Sensor means a device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH, or liquid level.

Synthetic organic chemicals manufacturing industry means the industry that produces, as intermediates or final products, one or more of the chemicals listed in §60.489.

Volatile organic compounds or VOC means, for the purposes of this subpart, any reactive organic compounds as defined in §60.2 Definitions.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 49 FR 26738, June 29, 1984; 60 FR 43258, Aug. 18, 1995; 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482-1 Standards: General.

(a) Each owner or operator subject to the provisions of this subpart shall demonstrate compliance with the requirements of §§60.482–1 through 60.482–10 or §60.480(e) for all equipment within 180 days of initial startup.

(b) Compliance with §§60.482–1 to 60.482–10 will be determined by review of records and reports, review of performance test results, and inspection using the methods and procedures specified in §60.485.

(c)(1) An owner or operator may request a determination of equivalence of a means of emission limitation to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, and 60.482–10 as provided in §60.484.

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2, 60.482–3, 60.482–5, 60.482–6, 60.482–7, 60.482–8, or 60.482–10, an owner or operator shall comply with the requirements of that determination.

(d) Equipment that is in vacuum service is excluded from the requirements of §§60.482–2 to 60.482–10 if it is identified as required in §60.486(e)(5).

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 78276, Dec. 14, 2000]

§ 60.482-2 Standards: Pumps in light liquid service.

(a)(1) Each pump in light liquid service shall be monitored monthly to detect leaks by the methods specified in §60.485(b), except as provided in §60.482–1(c) and paragraphs (d), (e), and (f) of this section.

(2) Each pump in light liquid service shall be checked by visual inspection each calendar week for indications of liquids dripping from the pump seal.

(b)(1) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(2) If there are indications of liquids dripping from the pump seal, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a), *provided* the following requirements are met:

(1) Each dual mechanical seal system is—

(i) Operated with the barrier fluid at a pressure that is at all times greater than the pump stuffing box

pressure; or

(ii) Equipment with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10; or

(iii) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(2) The barrier fluid system is in heavy liquid service or is not in VOC service.

(3) Each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both.

(4) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm, and

(ii) The owner or operator determines, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(6)(i) If there are indications of liquids dripping from the pump seal or the sensor indicates failure of the seal system, the barrier fluid system, or both based on the criterion determined in paragraph (d)(5)(ii), a leak is detected.

(ii) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(iii) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) Any pump that is designated, as described in §60.486(e)(1) and (2), for no detectable emission, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (c), and (d) of this section if the pump:

(1) Has no externally actuated shaft penetrating the pump housing,

(2) Is demonstrated to be operating with no detectable emissions as indicated by an instrument reading of less than 500 ppm above background as measured by the methods specified in §60.485(c), and

(3) Is tested for compliance with paragraph (e)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(f) If any pump is equipped with a closed vent system capable of capturing and transporting any leakage from the seal or seals to a process or to a fuel gas system or to a control device that complies with the requirements of §60.482–10, it is exempt from paragraphs (a) through (e) of this section.

(g) Any pump that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor pump is exempt from the monitoring and inspection requirements of paragraphs (a) and (d)(4) through (6) of this section if:

(1) The owner or operator of the pump demonstrates that the pump is unsafe-to-monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a) of this section; and

(2) The owner or operator of the pump has a written plan that requires monitoring of the pump as frequently as practicable during safe-to-monitor times but not more frequently than the periodic monitoring schedule otherwise applicable, and repair of the equipment according to the procedures in paragraph (c) of this section if a leak is detected.

(h) Any pump that is located within the boundary of an unmanned plant site is exempt from the weekly visual inspection requirement of paragraphs (a)(2) and (d)(4) of this section, and the daily requirements of paragraph (d)(5) of this section, provided that each pump is visually inspected as often as practicable and at least monthly.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000]

§ 60.482-3 Standards: Compressors.

(a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in §60.482–1(c) and paragraph (h) and (i) of this section.

(b) Each compressor seal system as required in paragraph (a) shall be:

(1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or

(2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482–10; or

(3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.

(c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.

(d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.

(e)(1) Each sensor as required in paragraph (d) shall be checked daily or shall be equipped with an audible alarm.

(2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.

(f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2), a leak is detected.

(g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482–10, except as provided in paragraph (i) of this section.

(i) Any compressor that is designated, as described in §60.486(e) (1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a)–(h) if the compressor:

(1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in §60.485(c); and

(2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

(j) Any existing reciprocating compressor in a process unit which becomes an affected facility under provisions of §60.14 or §60.15 is exempt from §60.482(a), (b), (c), (d), (e), and (h), provided the owner or operator demonstrates that recasting the distance piece or replacing the compressor are the only options available to bring the compressor into compliance with the provisions of paragraphs (a) through (e) and (h) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482-4 Standards: Pressure relief devices in gas/vapor service.

(a) Except during pressure releases, each pressure relief device in gas/vapor service shall be operated with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as determined by the methods specified in §60.485(c).

(b)(1) After each pressure release, the pressure relief device shall be returned to a condition of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as soon as practicable, but no later than 5 calendar days after the pressure release, except as provided in §60.482–9.

(2) No later than 5 calendar days after the pressure release, the pressure relief device shall be monitored to confirm the conditions of no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, by the methods specified in §60.485(c).

(c) Any pressure relief device that is routed to a process or fuel gas system or equipped with a closed vent system capable of capturing and transporting leakage through the pressure relief device to a control device as described in §60.482–10 is exempted from the requirements of paragraphs (a) and (b) of this section.

(d)(1) Any pressure relief device that is equipped with a rupture disk upstream of the pressure relief device is exempt from the requirements of paragraphs (a) and (b) of this section, provided the owner or operator complies with the requirements in paragraph (d)(2) of this section.

(2) After each pressure release, a new rupture disk shall be installed upstream of the pressure relief device as soon as practicable, but no later than 5 calendar days after each pressure release, except as provided in §60.482–9.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482-5 Standards: Sampling connection systems.

(a) Each sampling connection system shall be equipped with a closed-purged, closed-loop, or closed-vent system, except as provided in §60.482–1(c). Gases displaced during filling of the sample container are not required to be collected or captured.

(b) Each closed-purge, closed-loop, or closed-vent system as required in paragraph (a) of this section shall comply with the requirements specified in paragraphs (b)(1) through (4) of this section:

(1) Return the purged process fluid directly to the process line; or

(2) Collect and recycle the purged process fluid to a process; or

(3) Be designed and operated to capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482–10; or

(4) Collect, store, and transport the purged process fluid to any of the following systems or facilities:

(i) A waste management unit as defined in 40 CFR 63.111, if the waste management unit is subject to, and operated in compliance with the provisions of 40 CFR part 63, subpart G, applicable to Group 1 wastewater streams;

(ii) A treatment, storage, or disposal facility subject to regulation under 40 CFR part 262, 264, 265, or 266; or

(iii) A facility permitted, licensed, or registered by a State to manage municipal or industrial solid waste, if the process fluids are not hazardous waste as defined in 40 CFR part 261.

(c) In situ sampling systems and sampling systems without purges are exempt from the requirements of paragraphs (a) and (b) of this section.

[60 FR 43258, Aug. 18, 1995, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78277, Dec. 14, 2000]

§ 60.482-6 Standards: Open-ended valves or lines.

(a)(1) Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve, except as provided in §60.482–1(c).

(2) The cap, blind flange, plug, or second valve shall seal the open end at all times except during operations requiring process fluid flow through the open-ended valve or line.

(b) Each open-ended valve or line equipped with a second valve shall be operated in a manner such that

the valve on the process fluid end is closed before the second valve is closed.

(c) When a double block-and-bleed system is being used, the bleed valve or line may remain open during operations that require venting the line between the block valves but shall comply with paragraph (a) at all other times.

(d) Open-ended valves or lines in an emergency shutdown system which are designed to open automatically in the event of a process upset are exempt from the requirements of paragraphs (a), (b) and (c) of this section.

(e) Open-ended valves or lines containing materials which would autocatalytically polymerize or would present an explosion, serious overpressure, or other safety hazard if capped or equipped with a double block and bleed system as specified in paragraphs (a) through (c) of this section are exempt from the requirements of paragraphs (a) through (c) of this section.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22607, May 30, 1984; 65 FR 78277, Dec. 14, 2000]

§ 60.482-7 Standards: Valves in gas/vapor service and in light liquid service.

(a) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485(b) and shall comply with paragraphs (b) through (e), except as provided in paragraphs (f), (g), and (h), §60.483–1, 2, and §60.482–1(c).

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) Any valve for which a leak is not detected for 2 successive months may be monitored the first month of every quarter, beginning with the next quarter, until a leak is detected.

(2) If a leak is detected, the valve shall be monitored monthly until a leak is not detected for 2 successive months.

(d)(1) When a leak is detected, it shall be repaired as soon as practicable, but no later than 15 calendar days after the leak is detected, except as provided in §60.482–9.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(e) First attempts at repair include, but are not limited to, the following best practices where practicable:

(1) Tightening of bonnet bolts;

(2) Replacement of bonnet bolts;

(3) Tightening of packing gland nuts;

(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in §60.486(e)(2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraph (a) if the valve:

(1) Has no external actuating mechanism in contact with the process fluid,

(2) Is operated with emissions less than 500 ppm above background as determined by the method specified in §60.485(c), and

(3) Is tested for compliance with paragraph (f)(2) of this section initially upon designation, annually, and at other times requested by the Administrator.

(g) Any valve that is designated, as described in §60.486(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve is unsafe to monitor because monitoring personnel would be exposed to an immediate danger as a consequence of complying with paragraph (a), and

(2) The owner or operator of the valve adheres to a written plan that requires monitoring of the valve as frequently as practicable during safe-to-monitor times.

(h) Any valve that is designated, as described in §60.486(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) if:

(1) The owner or operator of the valve demonstrates that the valve cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(2) The process unit within which the valve is located either becomes an affected facility through §60.14 or §60.15 or the owner or operator designates less than 3.0 percent of the total number of valves as difficult-to-monitor, and

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61762, Oct. 17, 2000]

§ 60.482-8 Standards: Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors, the owner or operator shall follow either one of the following procedures:

(1) The owner or operator shall monitor the equipment within 5 days by the method specified in §60.485(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak.

(b) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(c)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9.

(2) The first attempt at repair shall be made no later than 5 calendar days after each leak is detected.

(d) First attempts at repair include, but are not limited to, the best practices described under §60.482–7(e).

[48 CFR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 60.482-9 Standards: Delay of repair.

(a) Delay of repair of equipment for which leaks have been detected will be allowed if repair within 15 days is technically infeasible without a process unit shutdown. Repair of this equipment shall occur before the end of the next process unit shutdown.

(b) Delay of repair of equipment will be allowed for equipment which is isolated from the process and which does not remain in VOC service.

(c) Delay of repair for valves will be allowed if:

(1) The owner or operator demonstrates that emissions of purged material resulting from immediate repair are greater than the fugitive emissions likely to result from delay of repair, and

(2) When repair procedures are effected, the purged material is collected and destroyed or recovered in a control device complying with §60.482–10.

(d) Delay of repair for pumps will be allowed if:

(1) Repair requires the use of a dual mechanical seal system that includes a barrier fluid system, and

(2) Repair is completed as soon as practicable, but not later than 6 months after the leak was detected.

(e) Delay of repair beyond a process unit shutdown will be allowed for a valve, if valve assembly replacement is necessary during the process unit shutdown, valve assembly supplies have been depleted, and valve assembly supplies had been sufficiently stocked before the supplies were depleted. Delay of repair beyond the next process unit shutdown will not be allowed unless the next process unit

shutdown occurs sooner than 6 months after the first process unit shutdown.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 78277, Dec. 14, 2000]

§ 60.482-10 Standards: Closed vent systems and control devices.

(a) Owners or operators of closed vent systems and control devices used to comply with provisions of this subpart shall comply with the provisions of this section.

(b) Vapor recovery systems (for example, condensers and absorbers) shall be designed and operated to recover the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, whichever is less stringent.

(c) Enclosed combustion devices shall be designed and operated to reduce the VOC emissions vented to them with an efficiency of 95 percent or greater, or to an exit concentration of 20 parts per million by volume, on a dry basis, corrected to 3 percent oxygen, whichever is less stringent or to provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.

(d) Flares used to comply with this subpart shall comply with the requirements of §60.18.

(e) Owners or operators of control devices used to comply with the provisions of this subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs.

(f) Except as provided in paragraphs (i) through (k) of this section, each closed vent system shall be inspected according to the procedures and schedule specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If the vapor collection system or closed vent system is constructed of hard-piping, the owner or operator shall comply with the requirements specified in paragraphs (f)(1)(i) and (f)(1)(ii) of this section:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual visual inspections for visible, audible, or olfactory indications of leaks.

(2) If the vapor collection system or closed vent system is constructed of ductwork, the owner or operator shall:

(i) Conduct an initial inspection according to the procedures in §60.485(b); and

(ii) Conduct annual inspections according to the procedures in §60.485(b).

(g) Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, shall be repaired as soon as practicable except as provided in paragraph (h) of this section.

(1) A first attempt at repair shall be made no later than 5 calendar days after the leak is detected.

(2) Repair shall be completed no later than 15 calendar days after the leak is detected.

(h) Delay of repair of a closed vent system for which leaks have been detected is allowed if the repair is technically infeasible without a process unit shutdown or if the owner or operator determines that emissions resulting from immediate repair would be greater than the fugitive emissions likely to result from delay of repair. Repair of such equipment shall be complete by the end of the next process unit shutdown.

(i) If a vapor collection system or closed vent system is operated under a vacuum, it is exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section.

(j) Any parts of the closed vent system that are designated, as described in paragraph (l)(1) of this section, as unsafe to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (j)(1) and (j)(2) of this section:

(1) The owner or operator determines that the equipment is unsafe to inspect because inspecting personnel would be exposed to an imminent or potential danger as a consequence of complying with paragraphs (f)(1)(i) or (f)(2) of this section; and

(2) The owner or operator has a written plan that requires inspection of the equipment as frequently as practicable during safe-to-inspect times.

(k) Any parts of the closed vent system that are designated, as described in paragraph (l)(2) of this section, as difficult to inspect are exempt from the inspection requirements of paragraphs (f)(1)(i) and (f)(2) of this section if they comply with the requirements specified in paragraphs (k)(1) through (k)(3) of this section:

(1) The owner or operator determines that the equipment cannot be inspected without elevating the inspecting personnel more than 2 meters above a support surface; and

(2) The process unit within which the closed vent system is located becomes an affected facility through §§60.14 or 60.15, or the owner or operator designates less than 3.0 percent of the total number of closed vent system equipment as difficult to inspect; and

(3) The owner or operator has a written plan that requires inspection of the equipment at least once every 5 years. A closed vent system is exempt from inspection if it is operated under a vacuum.

(l) The owner or operator shall record the information specified in paragraphs (l)(1) through (l)(5) of this section.

(1) Identification of all parts of the closed vent system that are designated as unsafe to inspect, an explanation of why the equipment is unsafe to inspect, and the plan for inspecting the equipment.

(2) Identification of all parts of the closed vent system that are designated as difficult to inspect, an explanation of why the equipment is difficult to inspect, and the plan for inspecting the equipment.

(3) For each inspection during which a leak is detected, a record of the information specified in §60.486(c).

(4) For each inspection conducted in accordance with §60.485(b) during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(5) For each visual inspection conducted in accordance with paragraph (f)(1)(ii) of this section during which no leaks are detected, a record that the inspection was performed, the date of the inspection, and a statement that no leaks were detected.

(m) Closed vent systems and control devices used to comply with provisions of this subpart shall be operated at all times when emissions may be vented to them.

[48 FR 48335, Oct. 18, 1983, as amended at 51 FR 2702, Jan. 21, 1986; 60 FR 43258, Aug. 18, 1995; 61 FR 29878, June 12, 1996; 65 FR 78277, Dec. 14, 2000]

§ 60.483-1 Alternative standards for valves—allowable percentage of valves leaking.

(a) An owner or operator may elect to comply with an allowable percentage of valves leaking of equal to or less than 2.0 percent.

(b) The following requirements shall be met if an owner or operator wishes to comply with an allowable percentage of valves leaking:

(1) An owner or operator must notify the Administrator that the owner or operator has elected to comply with the allowable percentage of valves leaking before implementing this alternative standard, as specified in §60.487(d).

(2) A performance test as specified in paragraph (c) of this section shall be conducted initially upon designation, annually, and at other times requested by the Administrator.

(3) If a valve leak is detected, it shall be repaired in accordance with §60.482–7(d) and (e).

(c) Performance tests shall be conducted in the following manner:

(1) All valves in gas/vapor and light liquid service within the affected facility shall be monitored within 1 week by the methods specified in §60.485(b).

(2) If an instrument reading of 10,000 ppm or greater is measured, a leak is detected.

(3) The leak percentage shall be determined by dividing the number of valves for which leaks are detected by the number of valves in gas/vapor and light liquid service within the affected facility.

(d) Owners and operators who elect to comply with this alternative standard shall not have an affected facility with a leak percentage greater than 2.0 percent.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.483-2 Alternative standards for valves—skip period leak detection and repair.

(a)(1) An owner or operator may elect to comply with one of the alternative work practices specified in paragraphs (b)(2) and (3) of this section.

(2) An owner or operator must notify the Administrator before implementing one of the alternative work practices, as specified in §60.487(d).

(b)(1) An owner or operator shall comply initially with the requirements for valves in gas/vapor service and valves in light liquid service, as described in §60.482–7.

(2) After 2 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 1 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(3) After 5 consecutive quarterly leak detection periods with the percent of valves leaking equal to or less than 2.0, an owner or operator may begin to skip 3 of the quarterly leak detection periods for the valves in gas/vapor and light liquid service.

(4) If the percent of valves leaking is greater than 2.0, the owner or operator shall comply with the requirements as described in §60.482–7 but can again elect to use this section.

(5) The percent of valves leaking shall be determined by dividing the sum of valves found leaking during current monitoring and valves for which repair has been delayed by the total number of valves subject to the requirements of this section.

(6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.484 Equivalence of means of emission limitation.

(a) Each owner or operator subject to the provisions of this subpart may apply to the Administrator for determination of equivalence for any means of emission limitation that achieves a reduction in emissions of VOC at least equivalent to the reduction in emissions of VOC achieved by the controls required in this subpart.
(b) Determination of equivalence to the equipment, design, and operational requirements of this subpart will be evaluated by the following guidelines:
(1) Each owner or operator applying for an equivalence determination shall be responsible for collecting and verifying test data to demonstrate equivalence of means of emission limitation.
(2) The Administrator will compare test data for the means of emission limitation to test data for the equipment, design, and operational requirements.
(3) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the equipment, design, and operational requirements.
(c) Determination of equivalence to the required work practices in this subpart will be evaluated by the following guidelines:
(1) Each owner or operator applying for a determination of equivalence shall be responsible for collecting and verifying test data to demonstrate equivalence of an equivalent means of emission limitation.
(2) For each affected facility for which a determination of equivalence is requested, the emission reduction achieved by the required work practice shall be demonstrated.
(3) For each affected facility, for which a determination of equivalence is requested, the emission reduction achieved by the equivalent means of emission limitation shall be demonstrated.

(4) Each owner or operator applying for a determination of equivalence shall commit in writing to work practice(s) that provide for emission reductions equal to or greater than the emission reductions achieved by the required work practice.
(5) The Administrator will compare the demonstrated emission reduction for the equivalent means of emission limitation to the demonstrated emission reduction for the required work practices and will consider the commitment in paragraph (c)(4).
(6) The Administrator may condition the approval of equivalence on requirements that may be necessary to assure operation and maintenance to achieve the same emission reduction as the required work practice.
(d) An owner or operator may offer a unique approach to demonstrate the equivalence of any equivalent means of emission limitation.
(e)(1) After a request for determination of equivalence is received, the Administrator will publish a notice in the Federal Register and provide the opportunity for public hearing if the Administrator judges that the request may be approved.
(2) After notice and opportunity for public hearing, the Administrator will determine the equivalence of a means of emission limitation and will publish the determination in the Federal Register.
(3) Any equivalent means of emission limitations approved under this section shall constitute a required work practice, equipment, design, or operational standard within the meaning of section 111(h)(1) of the Clean Air Act.
(f)(1) Manufacturers of equipment used to control equipment leaks of VOC may apply to the Administrator for determination of equivalence for any equivalent means of emission limitation that achieves a reduction in emissions of VOC achieved by the equipment, design, and operational requirements of this subpart.
(2) The Administrator will make an equivalence determination according to the provisions of paragraphs (b), (c), (d), and (e) of this section.
[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61762, Oct. 17, 2000]

§ 60.485 Test methods and procedures.

(a) In conducting the performance tests required in §60.8, the owner or operator shall use as reference methods and procedures the test methods in appendix A of this part or other methods and procedures as specified in this section, except as provided in §60.8(b).

(b) The owner or operator shall determine compliance with the standards in §§60.482, 60.483, and 60.484 as follows:

(1) Method 21 shall be used to determine the presence of leaking sources. The instrument shall be calibrated before use each day of its use by the procedures specified in Method 21. The following calibration gases shall be used:

(i) Zero air (less than 10 ppm of hydrocarbon in air); and

(ii) A mixture of methane or n-hexane and air at a concentration of about, but less than, 10,000 ppm methane or n-hexane.

(c) The owner or operator shall determine compliance with the no detectable emission standards in §§60.482–2(e), 60.482–3(i), 60.482–4, 60.482–7(f), and 60.482–10(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 shall be used to determine the background level. All potential leak interfaces shall be traversed as close to the interface as possible. The arithmetic difference between the maximum concentration indicated by the instrument and the background level is compared with 500 ppm for determining compliance.

(d) The owner or operator shall test each piece of equipment unless he demonstrates that a process unit is not in VOC service, i.e., that the VOC content would never be reasonably expected to exceed 10 percent by weight. For purposes of this demonstration, the following methods and procedures shall be used:

(1) Procedures that conform to the general methods in ASTM E260–73, 91, or 96, E168–67, 77, or 92, E169–63, 77, or 93 (incorporated by reference—see §60.17) shall be used to determine the percent VOC content in the process fluid that is contained in or contacts a piece of equipment.

(2) Organic compounds that are considered by the Administrator to have negligible photochemical reactivity may be excluded from the total quantity of organic compounds in determining the VOC content of the process fluid.

(3) Engineering judgment may be used to estimate the VOC content, if a piece of equipment had not been shown previously to be in service. If the Administrator disagrees with the judgment, paragraphs (d) (1) and (2) of this section shall be used to resolve the disagreement.

(e) The owner or operator shall demonstrate that an equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the components is greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F). Standard reference texts or ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17) shall be used to determine the vapor pressures.

(2) The total concentration of the pure components having a vapor pressure greater than 0.3 kPa at 20 °C (1.2 in. H_2O at 68 °F) is equal to or greater than 20 percent by weight.

(3) The fluid is a liquid at operating conditions.

(f) Samples used in conjunction with paragraphs (d), (e), and (g) of this section shall be representative of the process fluid that is contained in or contacts the equipment or the gas being combusted in the flare.

(g) The owner or operator shall determine compliance with the standards of flares as follows:

(1) Method 22 shall be used to determine visible emissions.

(2) A thermocouple or any other equivalent device shall be used to monitor the presence of a pilot flame in the flare.

(3) The maximum permitted velocity for air assisted flares shall be computed using the following equation:

$$V_{max} = K_1 + K_2 H_T$$

Where:

V_{max} = Maximum permitted velocity, m/sec (ft/sec)

H_T = Net heating value of the gas being combusted, MJ/scm (Btu/scf).

K_1 = 8.706 m/sec (metric units)

= 28.56 ft/sec (English units)

K_2 = 0.7084 m^4 /(MJ-sec) (metric units)

= 0.087 ft^4 /(Btu-sec) (English units)

(4) The net heating value (HT) of the gas being combusted in a flare shall be computed using the following equation:

$$H_T = K \sum_{i=1}^{n} C_i H_i$$

Where:

K = Conversion constant, 1.740×10^7 (g-mole)(MJ)/ (ppm-scm-kcal) (metric units)

= 4.674×10^8 [(g-mole)(Btu)/(ppm-scf-kcal)] (English units)

C_i = Concentration of sample component “i,” ppm

H_i = net heat of combustion of sample component “i” at 25 °C and 760 mm Hg (77 °F and 14.7 psi), kcal/g-mole

(5) Method 18 and ASTM D2504–67, 77, or 88 (Reapproved 1993) (incorporated by reference—see

§60.17) shall be used to determine the concentration of sample component “i.”

(6) ASTM D2382–76 or 88 or D4809–95 (incorporated by reference—see §60.17) shall be used to determine the net heat of combustion of component “i” if published values are not available or cannot be calculated.

(7) Method 2, 2A, 2C, or 2D, as appropriate, shall be used to determine the actual exit velocity of a flare. If needed, the unobstructed (free) cross-sectional area of the flare tip shall be used.

[54 FR 6678, Feb. 14, 1989, as amended at 54 FR 27016, June 27, 1989; 65 FR 61763, Oct. 17, 2000]

§ 60.486 Recordkeeping requirements.

(a)(1) Each owner or operator subject to the provisions of this subpart shall comply with the recordkeeping requirements of this section.

(2) An owner or operator of more than one affected facility subject to the provisions of this subpart may comply with the recordkeeping requirements for these facilities in one recordkeeping system if the system identifies each record by each facility.

(b) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following requirements apply:

(1) A weatherproof and readily visible identification, marked with the equipment identification number, shall be attached to the leaking equipment.

(2) The identification on a valve may be removed after it has been monitored for 2 successive months as specified in §60.482–7(c) and no leak has been detected during those 2 months.

(3) The identification on equipment except on a valve, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§60.482–2, 60.482–3, 60.482–7, 60.482–8, and 60.483–2, the following information shall be recorded in a log and shall be kept for 2 years in a readily accessible location:

(1) The instrument and operator identification numbers and the equipment identification number.

(2) The date the leak was detected and the dates of each attempt to repair the leak.

(3) Repair methods applied in each attempt to repair the leak.

(4) “Above 10,000” if the maximum instrument reading measured by the methods specified in §60.485(a) after each repair attempt is equal to or greater than 10,000 ppm.

(5) “Repair delayed” and the reason for the delay if a leak is not repaired within 15 calendar days after discovery of the leak.

(6) The signature of the owner or operator (or designate) whose decision it was that repair could not be effected without a process shutdown.

(7) The expected date of successful repair of the leak if a leak is not repaired within 15 days.

(8) Dates of process unit shutdowns that occur while the equipment is unrepaired.

(9) The date of successful repair of the leak.

(d) The following information pertaining to the design requirements for closed vent systems and control devices described in §60.482–10 shall be recorded and kept in a readily accessible location:

(1) Detailed schematics, design specifications, and piping and instrumentation diagrams.

(2) The dates and descriptions of any changes in the design specifications.

(3) A description of the parameter or parameters monitored, as required in §60.482–10(e), to ensure that control devices are operated and maintained in conformance with their design and an explanation of why that parameter (or parameters) was selected for the monitoring.

(4) Periods when the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5 are not operated as designed, including periods when a flare pilot light does not have a flame.

(5) Dates of startups and shutdowns of the closed vent systems and control devices required in §§60.482–2, 60.482–3, 60.482–4, and 60.482–5.

(e) The following information pertaining to all equipment subject to the requirements in §§60.482–1 to 60.482–10 shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for equipment subject to the requirements of this subpart.

(2)(i) A list of identification numbers for equipment that are designated for no detectable emissions under the provisions of §§60.482–2(e), 60.482–3(i) and 60.482–7(f).

(ii) The designation of equipment as subject to the requirements of §60.482–2(e), §60.482–3(i), or §60.482–7(f) shall be signed by the owner or operator.

(3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482–4.

(4)(i) The dates of each compliance test as required in §§60.482–2(e), 60.482–3(i), 60.482–4, and 60.482–7(f).

(ii) The background level measured during each compliance test.

(iii) The maximum instrument reading measured at the equipment during each compliance test.

(5) A list of identification numbers for equipment in vacuum service.

(f) The following information pertaining to all valves subject to the requirements of §60.482–7(g) and (h) and to all pumps subject to the requirements of §60.482–2(g) shall be recorded in a log that is kept in a readily accessible location:

(1) A list of identification numbers for valves and pumps that are designated as unsafe-to-monitor, an explanation for each valve or pump stating why the valve or pump is unsafe-to-monitor, and the plan for monitoring each valve or pump.

(2) A list of identification numbers for valves that are designated as difficult-to-monitor, an explanation for each valve stating why the valve is difficult-to-monitor, and the schedule for monitoring each valve.

(g) The following information shall be recorded for valves complying with §60.483–2:

(1) A schedule of monitoring.

(2) The percent of valves found leaking during each monitoring period.

(h) The following information shall be recorded in a log that is kept in a readily accessible location:

(1) Design criterion required in §§60.482–2(d)(5) and 60.482–3(e)(2) and explanation of the design criterion; and

(2) Any changes to this criterion and the reasons for the changes.

(i) The following information shall be recorded in a log that is kept in a readily accessible location for use in determining exemptions as provided in §60.480(d):

(1) An analysis demonstrating the design capacity of the affected facility,

(2) A statement listing the feed or raw materials and products from the affected facilities and an analysis demonstrating whether these chemicals are heavy liquids or beverage alcohol, and

(3) An analysis demonstrating that equipment is not in VOC service.

(j) Information and data used to demonstrate that a piece of equipment is not in VOC service shall be recorded in a log that is kept in a readily accessible location.

(k) The provisions of §60.7 (b) and (d) do not apply to affected facilities subject to this subpart.

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000; 65 FR 78278, Dec. 14, 2000]

§ 60.487 Reporting requirements.

(a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning six months after the initial startup date.

(b) The initial semiannual report to the Administrator shall include the following information:

(1) Process unit identification.

(2) Number of valves subject to the requirements of §60.482–7, excluding those valves designated for no detectable emissions under the provisions of §60.482–7(f).

(3) Number of pumps subject to the requirements of §60.482–2, excluding those pumps designated for no detectable emissions under the provisions of §60.482–2(e) and those pumps complying with §60.482–2(f).

(4) Number of compressors subject to the requirements of §60.482–3, excluding those compressors designated for no detectable emissions under the provisions of §60.482–3(i) and those compressors complying with §60.482–3(h).

(c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486:

(1) Process unit identification.

(2) For each month during the semiannual reporting period,

(i) Number of valves for which leaks were detected as described in §60.482(7)(b) or §60.483–2,

(ii) Number of valves for which leaks were not repaired as required in §60.482–7(d)(1),

(iii) Number of pumps for which leaks were detected as described in §60.482–2(b) and (d)(6)(i),

(iv) Number of pumps for which leaks were not repaired as required in §60.482–2(c)(1) and (d)(6)(ii),

(v) Number of compressors for which leaks were detected as described in §60.482–3(f),

(vi) Number of compressors for which leaks were not repaired as required in §60.482–3(g)(1), and

(vii) The facts that explain each delay of repair and, where appropriate, why a process unit shutdown was technically infeasible.

(3) Dates of process unit shutdowns which occurred within the semiannual reporting period.

(4) Revisions to items reported according to paragraph (b) if changes have occurred since the initial report or subsequent revisions to the initial report.

(d) An owner or operator electing to comply with the provisions of §§60.483–1 or 60.483–2 shall notify the Administrator of the alternative standard selected 90 days before implementing either of the provisions.

(e) An owner or operator shall report the results of all performance tests in accordance with §60.8 of the General Provisions. The provisions of §60.8(d) do not apply to affected facilities subject to the provisions of this subpart except that an owner or operator must notify the Administrator of the schedule for the initial performance tests at least 30 days before the initial performance tests.

(f) The requirements of paragraphs (a) through (c) of this section remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such State. In that event, affected sources within the State will be relieved of the obligation to comply with the requirements of paragraphs (a) through (c) of this section, provided that they comply with the requirements established by the State.

[48 FR 48335, Oct. 18, 1983, as amended at 49 FR 22608, May 30, 1984; 65 FR 61763, Oct. 17, 2000]

SECTION E.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

(j) Two (2) natural gas fired boilers, identified as EU027 and EU028, approved for construction in 2007, each with a maximum heat input rate of 143 MMBtu/hr, with emissions exhausting to stacks SV013 and SV014, respectively.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for boilers EU027 and EU028, except as otherwise specified in 40 CFR Part 60, Subpart Db.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.2.2 Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units Requirements [40 CFR Part 60, Subpart Db] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart Db, the Permittee shall comply with the provisions of Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units, which are incorporated by reference as 326 IAC 12, for boilers EU027 and EU028 as specified as follows:

Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

Source: 72 FR 32742, June 13, 2007, unless otherwise noted.

§ 60.40b Applicability and delegation of authority.

(a) The affected facility to which this subpart applies is each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of greater than 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)).

(b) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1984, but on or before June 19, 1986, is subject to the following standards:

(1) Coal-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the particulate matter (PM) and nitrogen oxides (NO_X) standards under this subpart.

(2) Coal-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; §60.40) are subject to the PM and NO_X standards under this subpart and to the sulfur dioxide (SO_2) standards under subpart D (§60.43).

(3) Oil-fired affected facilities having a heat input capacity between 29 and 73 MW (100 and 250 MMBtu/hr), inclusive, are subject to the NO_X standards under this subpart.

(4) Oil-fired affected facilities having a heat input capacity greater than 73 MW (250 MMBtu/hr) and meeting the applicability requirements under subpart D (Standards of performance for fossil-fuel-fired steam generators; §60.40) are also subject to the NO_X standards under this subpart and the PM and SO_2standards under subpart D (§60.42 and §60.43).

(c) Affected facilities that also meet the applicability requirements under subpart J (Standards of performance for petroleum refineries; §60.104) are subject to the PM and NO_X standards under this subpart and the SO_2standards under subpart J (§60.104).

(d) Affected facilities that also meet the applicability requirements under subpart E (Standards of performance for incinerators; §60.50) are subject to the NO_X and PM standards under this subpart.

(e) Steam generating units meeting the applicability requirements under subpart Da (Standards of performance for electric utility steam generating units; §60.40Da) are not subject to this subpart.

(f) Any change to an existing steam generating unit for the sole purpose of combusting gases containing total reduced sulfur (TRS) as defined under §60.281 is not considered a modification under §60.14 and the steam generating unit is not subject to this subpart.

(g) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, the following authorities shall be retained by the Administrator and not transferred to a State.

(1) Section 60.44b(f).

(2) Section 60.44b(g).

(3) Section 60.49b(a)(4).

(h) Any affected facility that meets the applicability requirements and is subject to subpart Ea, subpart Eb, or subpart AAAA of this part is not covered by this subpart.

(i) Heat recovery steam generators that are associated with combined cycle gas turbines and that meet the applicability requirements of subpart GG or KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators that are capable of combusting more than 29 MW (100 MMBtu/hr) heat input of fossil fuel. If the heat recovery steam generator is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The gas turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

(j) Any affected facility meeting the applicability requirements under paragraph (a) of this section and commencing construction, modification, or reconstruction after June 19, 1986 is not subject to subpart D (Standards of Performance for Fossil-Fuel-Fired Steam Generators, §60.40).

(k) Any affected facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart Cb or subpart BBBB of this part is not covered by this subpart.

§ 60.41b Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from the fuels listed in §60.42b(a), §60.43b(a), or §60.44b(a), as applicable, during a calendar year and the potential heat input to the steam generating unit had it been operated for 8,760 hours during a calendar year at the maximum steady state design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility in a calendar year.

Byproduct/waste means any liquid or gaseous substance produced at chemical manufacturing plants, petroleum refineries, or pulp and paper mills (except natural gas, distillate oil, or residual oil) and combusted in a steam generating unit for heat recovery or for disposal. Gaseous substances with carbon dioxide (CO_2) levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not byproduct/waste for the purpose of this subpart.

Chemical manufacturing plants mean industrial plants that are classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 28.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17), coal refuse, and

petroleum coke. Coal-derived synthetic fuels, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, coke oven gas, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any byproduct of coal mining or coal cleaning operations with an ash content greater than 50 percent, by weight, and a heating value less than 13,900 kJ/kg (6,000 Btu/lb) on a dry basis.

Cogeneration , also known as combined heat and power, means a facility that simultaneously produces both electric (or mechanical) and useful thermal energy from the same primary energy source.

Coke oven gas means the volatile constituents generated in the gaseous exhaust during the carbonization of bituminous coal to form coke.

Combined cycle system means a system in which a separate source, such as a gas turbine, internal combustion engine, kiln, etc., provides exhaust gas to a steam generating unit.

Conventional technology means wet flue gas desulfurization (FGD) technology, dry FGD technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

Dry flue gas desulfurization technology means a SO_2control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline slurries or solutions used in dry flue gas desulfurization technology include but are not limited to lime and sodium.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source, such as a stationary gas turbine, internal combustion engine, kiln, etc., to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2control system that is not defined as a conventional technology under this section, and for which the owner or operator of the facility has applied to the Administrator and received approval to operate as an emerging technology under §60.49b(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State Implementation Plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means combustion of fuel in a bed or series of beds (including but not limited to bubbling bed units and circulating bed units) of limestone aggregate (or other sorbent materials) in which these materials are forced upward by the flow of combustion air and the gaseous products of combustion.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Full capacity means operation of the steam generating unit at 90 percent or more of the maximum steady-state design heat input capacity.

Gaseous fuel means any fuel that is present as a gas at ISO conditions.

Gross output means the gross useful work performed by the steam generated. For units generating only electricity, the gross useful work performed is the gross electrical output from the turbine/generator set. For cogeneration units, the gross useful work performed is the gross electrical or mechanical output plus 75 percent of the useful thermal output measured relative to ISO conditions that is not used to generate additional electrical or mechanical output (i.e., steam delivered to an industrial process).

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, kilns, etc.

Heat release rate means the steam generating unit design heat input capacity (in MW or Btu/hr) divided by the furnace volume (in cubic meters or cubic feet); the furnace volume is that volume bounded by the

front furnace wall where the burner is located, the furnace side waterwall, and extending to the level just below or in front of the first row of convection pass tubes.

Heat transfer medium means any material that is used to transfer heat from one point to another point.

High heat release rate means a heat release rate greater than 730,000 J/sec-m^3 (70,000 Btu/hr-ft^3).

ISO Conditions means a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals.

Lignite means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see §60.17).

Low heat release rate means a heat release rate of 730,000 J/sec-m^3 (70,000 Btu/hr-ft^3) or less.

Mass-feed stoker steam generating unit means a steam generating unit where solid fuel is introduced directly into a retort or is fed directly onto a grate where it is combusted.

Maximum heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel on a steady state basis, as determined by the physical design and characteristics of the steam generating unit.

Municipal-type solid waste means refuse, more than 50 percent of which is waste consisting of a mixture of paper, wood, yard wastes, food wastes, plastics, leather, rubber, and other combustible materials, and noncombustible materials such as glass and rock.

Natural gas means: (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or (2) liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see §60.17).

Oil means crude oil or petroleum or a liquid fuel derived from crude oil or petroleum, including distillate and residual oil.

Petroleum refinery means industrial plants as classified by the Department of Commerce under Standard Industrial Classification (SIC) Code 29.

Potential sulfur dioxide emission rate means the theoretical SO_2emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Pulp and paper mills means industrial plants that are classified by the Department of Commerce under North American Industry Classification System (NAICS) Code 322 or Standard Industrial Classification (SIC) Code 26.

Pulverized coal-fired steam generating unit means a steam generating unit in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the steam generating unit where it is fired in suspension. This includes both conventional pulverized coal-fired and micropulverized coal-fired steam generating units. Residual oil means crude oil, fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05 weight percent, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see §60.17).

Spreader stoker steam generating unit means a steam generating unit in which solid fuel is introduced to the combustion zone by a mechanism that throws the fuel onto a grate from above. Combustion takes place both in suspension and on the grate.

Steam generating unit means a device that combusts any fuel or byproduct/waste and produces steam or heats water or any other heat transfer medium. This term includes any municipal-type solid waste incinerator with a heat recovery steam generating unit or any steam generating unit that combusts fuel and is part of a cogeneration system or a combined cycle system. This term does not include process heaters as they are defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Very low sulfur oil means for units constructed, reconstructed, or modified on or before February 28, 2005, an oil that contains no more than 0.5 weight percent sulfur or that, when combusted without SO_2emission control, has a SO_2emission rate equal to or less than 215 ng/J (0.5 lb/MMBtu) heat input. For units constructed, reconstructed, or modified after February 28, 2005, *very low sulfur oil* means an oil that contains no more than 0.3 weight percent sulfur or that, when combusted without SO_2emission control, has a SO_2emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input.

Wet flue gas desulfurization technology means a SO_2control system that is located downstream of the steam generating unit and removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gas with an alkaline slurry or solution and forming a liquid material. This definition applies to devices where the aqueous liquid material product of this contact is subsequently converted to other forms. Alkaline reagents used in wet flue gas desulfurization technology include, but are not limited to, lime, limestone, and sodium.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2.

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including, but not limited to, sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

§ 60.44b Standard for nitrogen oxides (NOX).

(a) Except as provided under paragraphs (k) and (l) of this section, on and after the date on which the initial performance test is completed or is required to be completed under §60.8, whichever date comes first, no owner or operator of an affected facility that is subject to the provisions of this section and that combusts only coal, oil, or natural gas shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_X(expressed as NO_2) in excess of the following emission limits:

Fuel/steam generating unit type	Nitrogen oxide emission limits (expressed as NO_2) heat input	
	ng/J	lb/MMBTu
(1) Natural gas and distillate oil, except (4):		
(i) Low heat release rate	43	0.10
(ii) High heat release rate	86	0.20
(2) Residual oil:		
(i) Low heat release rate	130	0.30
(ii) High heat release rate	170	0.40
(3) Coal:		
(i) Mass-feed stoker	210	0.50
(ii) Spreader stoker and fluidized bed combustion	260	0.60
(iii) Pulverized coal	300	0.70
(iv) Lignite, except (v)	260	0.60
(v) Lignite mined in North Dakota, South Dakota, or Montana and combusted in a slag tap furnace	340	0.80
(vi) Coal-derived synthetic fuels	210	0.50
(4) Duct burner used in a combined cycle system:		
(i) Natural gas and distillate oil	86	0.20
(ii) Residual oil	170	0.40

(h) For purposes of paragraph (i) of this section, the NO_X standards under this section apply at all times including periods of startup, shutdown, or malfunction.

(i) Except as provided under paragraph (j) of this section, compliance with the emission limits under this section is determined on a 30-day rolling average basis.

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

(a) The PM emission standards and opacity limits under §60.43b apply at all times except during periods of startup, shutdown, or malfunction. The NO_X emission standards under §60.44b apply at all times.

(c) Compliance with the NO_X emission standards under §60.44b shall be determined through performance testing under paragraph (e) or (f), or under paragraphs (g) and (h) of this section, as applicable.

(e) To determine compliance with the emission limits for NO_X required under §60.44b, the owner or operator of an affected facility shall conduct the performance test as required under §60.8 using the continuous system for monitoring NO_X under §60.48(b).

(1) For the initial compliance test, NO_X from the steam generating unit are monitored for 30 successive steam generating unit operating days and the 30-day average emission rate is used to determine compliance with the NO_X emission standards under §60.44b. The 30-day average emission rate is calculated as the average of all hourly emissions data recorded by the monitoring system during the 30-day test period.

§ 60.48b Emission monitoring for particulate matter and nitrogen oxides.

(b) Except as provided under paragraphs (g), (h), and (i) of this section, the owner or operator of an affected facility subject to a NO_X standard under §60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate CEMS for measuring NO_X and O_2(or CO_2) emissions discharged to the atmosphere, and shall record the output of the system; or

(c) The CEMS required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average NO_X emission rates measured by the continuous NO_X monitor required by paragraph (b) of this section and required under §60.13(h) shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under §60.44b. The 1-hour averages shall be calculated using the data points required under §60.13(h)(2).

(e) The procedures under §60.13 shall be followed for installation, evaluation, and operation of the continuous monitoring systems.

(2) For affected facilities combusting coal, oil, or natural gas, the span value for NO_X is determined using one of the following procedures:

(i) Except as provided under paragraph (e)(2)(ii) of this section, NO_X span values shall be determined as follows:

Fuel	Span values for NO_X (ppm)
Natural gas	500.
Oil	500.
Coal	1,000.
Mixtures	500 (x + y) + 1,000z.

Where:

x = Fraction of total heat input derived from natural gas;

y = Fraction of total heat input derived from oil; and

z = Fraction of total heat input derived from coal.

(f) When NO_X emission data are not obtained because of CEMS breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7 of appendix A of this part, Method 7A of appendix A of this part, or other approved reference methods to provide emission data for a minimum of 75 percent of the operating hours in each steam generating unit operating day, in at least 22 out of 30 successive steam generating unit operating days.

(g) The owner or operator of an affected facility that has a heat input capacity of 73 MW (250 MMBtu/hr) or less, and that has an annual capacity factor for residual oil having a nitrogen content of 0.30 weight percent or less, natural gas, distillate oil, or any mixture of these fuels, greater than 10 percent (0.10) shall:

(2) Monitor steam generating unit operating conditions and predict NO_X emission rates as specified in a plan submitted pursuant to §60.49b(c).

§ 60.49b Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of initial startup, as provided by §60.7. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of the fuels to be combusted in the affected facility;

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §§60.42b(d)(1), 60.43b(a)(2), (a)(3)(iii), (c)(2)(ii), (d)(2)(iii), 60.44b(c), (d), (e), (i), (j), (k), 60.45b(d), (g), 60.46b(h), or 60.48b(i);

(3) The annual capacity factor at which the owner or operator anticipates operating the facility based on all fuels fired and based on each individual fuel fired; and

(b) The owner or operator of each affected facility subject to the SO_2, PM, and/or NO_X emission limits under §§60.42b, 60.43b, and 60.44b shall submit to the Administrator the performance test data from the initial performance test and the performance evaluation of the CEMS using the applicable performance specifications in appendix B of this part. The owner or operator of each affected facility described in §60.44b(j) or §60.44b(k) shall submit to the Administrator the maximum heat input capacity data from the demonstration of the maximum heat input capacity of the affected facility.

(c) The owner or operator of each affected facility subject to the NO_X standard of §60.44b who seeks to demonstrate compliance with those standards through the monitoring of steam generating unit operating conditions under the provisions of §60.48b(g)(2) shall submit to the Administrator for approval a plan that identifies the operating conditions to be monitored under §60.48b(g)(2) and the records to be maintained under §60.49b(j). This plan shall be submitted to the Administrator for approval within 360 days of the initial startup of the affected facility. If the plan is approved, the owner or operator shall maintain records of predicted nitrogen oxide emission rates and the monitored operating conditions, including steam generating unit load, identified in the plan. The plan shall:

(1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and NO_X emission rates (*i.e.* , ng/J or lbs/MMBtu heat input). Steam generating unit operating conditions include, but are not limited to, the degree of staged combustion (*i.e.* , the ratio of primary air to secondary and/or tertiary air) and the level of excess air (*i.e.* , flue gas O_2level);

(2) Include the data and information that the owner or operator used to identify the relationship between NO_X emission rates and these operating conditions; and

(3) Identify how these operating conditions, including steam generating unit load, will be monitored under §60.48b(g) on an hourly basis by the owner or operator during the period of operation of the affected facility; the quality assurance procedures or practices that will be employed to ensure that the data generated by monitoring these operating conditions will be representative and accurate; and the type and format of the records of these operating conditions, including steam generating unit load, that will be maintained by the owner or operator under §60.49b(j).

(d) The owner or operator of an affected facility shall record and maintain records of the amounts of each fuel combusted during each day and calculate the annual capacity factor individually for coal, distillate oil, residual oil, natural gas, wood, and municipal-type solid waste for the reporting period. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of each calendar month.

(g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the NO_X standards under §60.44b shall maintain records of the following information for each steam generating unit operating day:

(1) Calendar date;

(2) The average hourly NO_X emission rates (expressed as NO_2) (ng/J or lb/MMBtu heat input) measured or predicted;

(3) The 30-day average NO_X emission rates (ng/J or lb/MMBtu heat input) calculated at the end of each steam generating unit operating day from the measured or predicted hourly nitrogen oxide emission rates for the preceding 30 steam generating unit operating days;

(4) Identification of the steam generating unit operating days when the calculated 30-day average NO_X emission rates are in excess of the NO_X emissions standards under §60.44b, with the reasons for such excess emissions as well as a description of corrective actions taken;

(5) Identification of the steam generating unit operating days for which pollutant data have not been obtained, including reasons for not obtaining sufficient data and a description of corrective actions taken;

(6) Identification of the times when emission data have been excluded from the calculation of average emission rates and the reasons for excluding data;

(7) Identification of “F” factor used for calculations, method of determination, and type of fuel combusted;

(8) Identification of the times when the pollutant concentration exceeded full span of the CEMS;

(9) Description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specification 2 or 3; and

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_Xunder §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

(v) The owner or operator of an affected facility may submit electronic quarterly reports for $SO_2$and/or $NO_X$and/or opacity in lieu of submitting the written reports required under paragraphs (h), (i), (j), (k) or (l) of this section. The format of each quarterly electronic report shall be coordinated with the permitting authority. The electronic report(s) shall be submitted no later than 30 days after the end of the calendar quarter and shall be accompanied by a certification statement from the owner or operator, indicating whether compliance with the applicable emission standards and minimum data requirements of this subpart was achieved during the reporting period. Before submitting reports in the electronic format, the owner or operator shall coordinate with the permitting authority to obtain their agreement to submit reports in this alternative format.

(w) The reporting period for the reports required under this subpart is each 6 month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

SECTION E.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

(g) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) off spec tank for 190-proof ethanol, identified as T001, approved for construction in 2007, with a maximum capacity of 250,000 gallons. [40 CFR 60, Subpart Kb]

(2) One (1) tank for 200-proof ethanol, identified as T002, approved for construction in 2007, with a maximum capacity of 250,000 gallons of 200-proof ethanol. [40 CFR 60, Subpart Kb]

(3) One (1) denatured ethanol tank, identified as T003, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(4) One (1) denatured ethanol tank, identified as T004, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(5) One (1) denaturant tank, identified as T005, approved for construction in 2007, with a maximum capacity of 126,900 gallons of natural gasoline. [326 IAC 8-9] [40 CFR 60, Subpart Kb]

Under 40 CFR 60, Subpart Kb, storage tanks T001 through T005 are considered to be new volatile organic liquid storage tanks.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.3.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for tanks T001, T002, T003, T004, and T005, except as otherwise specified in 40 CFR Part 60, Subpart Kb.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.3.2 Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) [40 CFR Part 60, Subpart Kb] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart Kb, the Permittee shall comply with the provisions of Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), which are incorporated by reference as 326 IAC 12, for tanks T001, T002, T003, T004, and T005 as follows:

Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels)
Source: 52 FR 11429, April 8, 1987, unless otherwise noted.

§ 60.110b Applicability and designation of affected facility.

(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m^3) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.

(b) This subpart does not apply to storage vessels with a capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure less than 3.5 kilopascals (kPa) or with a capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

(c) [Reserved]

(d) This subpart does not apply to the following:

(1) Vessels at coke oven by-product plants.

(2) Pressure vessels designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.

(3) Vessels permanently attached to mobile vehicles such as trucks, railcars, barges, or ships.

(4) Vessels with a design capacity less than or equal to 1,589.874 m^3 used for petroleum or condensate stored, processed, or treated prior to custody transfer.

(5) Vessels located at bulk gasoline plants.

(6) Storage vessels located at gasoline service stations.

(7) Vessels used to store beverage alcohol.

(8) Vessels subject to subpart GGGG of 40 CFR part 63.

(e) *Alternative means of compliance*—(1) *Option to comply with part 65.* Owners or operators may choose to comply with 40 CFR part 65, subpart C, to satisfy the requirements of §§60.112b through 60.117b for storage vessels that are subject to this subpart that meet the specifications in paragraphs (e)(1)(i) and (ii) of this section. When choosing to comply with 40 CFR part 65, subpart C, the monitoring requirements of §60.116b(c), (e), (f)(1), and (g) still apply. Other provisions applying to owners or operators who choose to comply with 40 CFR part 65 are provided in 40 CFR 65.1.

(i) A storage vessel with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa; or

(ii) A storage vessel with a design capacity greater than 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa.

(2) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart C, must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for those storage vessels. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2) do not apply to owners or operators of storage vessels complying with 40 CFR part 65, subpart C, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and

operators who choose to comply with 40 CFR part 65, subpart C, must comply with 40 CFR part 65, subpart A.

(3) *Internal floating roof report.* If an owner or operator installs an internal floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.43. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

(4) *External floating roof report.* If an owner or operator installs an external floating roof and, at initial startup, chooses to comply with 40 CFR part 65, subpart C, a report shall be furnished to the Administrator stating that the control equipment meets the specifications of 40 CFR 65.44. This report shall be an attachment to the notification required by 40 CFR 65.5(b).

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 78275, Dec. 14, 2000; 68 FR 59332, Oct. 15, 2003]

§ 60.111b Definitions.

Terms used in this subpart are defined in the Act, in subpart A of this part, or in this subpart as follows:

Bulk gasoline plant means any gasoline distribution facility that has a gasoline throughput less than or equal to 75,700 liters per day. Gasoline throughput shall be the maximum calculated design throughput as may be limited by compliance with an enforceable condition under Federal requirement or Federal, State or local law, and discoverable by the Administrator and any other person.

Condensate means hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature or pressure, or both, and remains liquid at standard conditions.

Custody transfer means the transfer of produced petroleum and/or condensate, after processing and/or treatment in the producing operations, from storage vessels or automatic transfer facilities to pipelines or any other forms of transportation.

Fill means the introduction of VOL into a storage vessel but not necessarily to complete capacity.

Gasoline service station means any site where gasoline is dispensed to motor vehicle fuel tanks from stationary storage tanks.

Maximum true vapor pressure means the equilibrium partial pressure exerted by the volatile organic compounds (as defined in 40 CFR 51.100) in the stored VOL at the temperature equal to the highest calendar-month average of the VOL storage temperature for VOL's stored above or below the ambient temperature or at the local maximum monthly average temperature as reported by the National Weather Service for VOL's stored at the ambient temperature, as determined:

(1) In accordance with methods described in American Petroleum institute Bulletin 2517, Evaporation Loss From External Floating Roof Tanks, (incorporated by reference—see §60.17); or

(2) As obtained from standard reference texts; or

(3) As determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17);

(4) Any other method approved by the Administrator.

Petroleum means the crude oil removed from the earth and the oils derived from tar sands, shale, and coal.

Petroleum liquids means petroleum, condensate, and any finished or intermediate products manufactured in a petroleum refinery.

Process tank means a tank that is used within a process (including a solvent or raw material recovery process) to collect material discharged from a feedstock storage vessel or equipment within the process before the material is transferred to other equipment within the process, to a product or by-product storage vessel, or to a vessel used to store recovered solvent or raw material. In many process tanks, unit operations such as reactions and blending are conducted. Other process tanks, such as surge control vessels and bottoms receivers, however, may not involve unit operations.

Reid vapor pressure means the absolute vapor pressure of volatile crude oil and volatile nonviscous petroleum liquids except liquified petroleum gases, as determined by ASTM D323–82 or 94 (incorporated by reference—see §60.17).

Storage vessel means each tank, reservoir, or container used for the storage of volatile organic liquids but does not include:

(1) Frames, housing, auxiliary supports, or other components that are not directly involved in the containment of liquids or vapors;

(2) Subsurface caverns or porous rock reservoirs; or

(3) Process tanks.

Volatile organic liquid (VOL) means any organic liquid which can emit volatile organic compounds (as defined in 40 CFR 51.100) into the atmosphere.

Waste means any liquid resulting from industrial, commercial, mining or agricultural operations, or from community activities that is discarded or is being accumulated, stored, or physically, chemically, or biologically treated prior to being discarded or recycled.

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989; 65 FR 61756, Oct. 17, 2000; 68 FR 59333, Oct. 15, 2003]

§ 60.112b Standard for volatile organic compounds (VOC).

(a) The owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 5.2 kPa but less than 76.6 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 containing a VOL that, as stored, has a maximum true vapor pressure equal to or greater than 27.6 kPa but less than 76.6 kPa, shall equip each storage vessel with one of the following:

(1) A fixed roof in combination with an internal floating roof meeting the following specifications:

(i) The internal floating roof shall rest or float on the liquid surface (but not necessarily in complete contact with it) inside a storage vessel that has a fixed roof. The internal floating roof shall be floating on the liquid surface at all times, except during initial fill and during those intervals when the storage vessel is completely emptied or subsequently emptied and refilled. When the roof is resting on the leg supports, the process of filling, emptying, or refilling shall be continuous and shall be accomplished as rapidly as possible.

(ii) Each internal floating roof shall be equipped with one of the following closure devices between the wall of the storage vessel and the edge of the internal floating roof:

(A) A foam- or liquid-filled seal mounted in contact with the liquid (liquid-mounted seal). A liquid-mounted seal means a foam- or liquid-filled seal mounted in contact with the liquid between the wall of the storage vessel and the floating roof continuously around the circumference of the tank.

(B) Two seals mounted one above the other so that each forms a continuous closure that completely covers the space between the wall of the storage vessel and the edge of the internal floating roof. The lower seal may be vapor-mounted, but both must be continuous.

(C) A mechanical shoe seal. A mechanical shoe seal is a metal sheet held vertically against the wall of the storage vessel by springs or weighted levers and is connected by braces to the floating roof. A flexible coated fabric (envelope) spans the annular space between the metal sheet and the floating roof.

(iii) Each opening in a noncontact internal floating roof except for automatic bleeder vents (vacuum breaker vents) and the rim space vents is to provide a projection below the liquid surface.

(iv) Each opening in the internal floating roof except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells, and stub drains is to be equipped with a cover or lid which is to be maintained in a closed position at all times (i.e., no visible gap) except when the device is in actual use. The cover or lid shall be equipped with a gasket. Covers on each access hatch and automatic gauge float well shall be bolted except when they are in use.

(v) Automatic bleeder vents shall be equipped with a gasket and are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports.

(vi) Rim space vents shall be equipped with a gasket and are to be set to open only when the internal floating roof is not floating or at the manufacturer's recommended setting.

(vii) Each penetration of the internal floating roof for the purpose of sampling shall be a sample well. The sample well shall have a slit fabric cover that covers at least 90 percent of the opening.

(viii) Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof shall have a flexible fabric sleeve seal or a gasketed sliding cover.

(ix) Each penetration of the internal floating roof that allows for passage of a ladder shall have a gasketed sliding cover.

§ 60.113b Testing and procedures.

The owner or operator of each storage vessel as specified in §60.112b(a) shall meet the requirements of paragraph (a), (b), or (c) of this section. The applicable paragraph for a particular storage vessel depends on the control equipment installed to meet the requirements of §60.112b.

(a) After installing the control equipment required to meet §60.112b(a)(1) (permanently affixed roof and internal floating roof), each owner or operator shall:

(1) Visually inspect the internal floating roof, the primary seal, and the secondary seal (if one is in service), prior to filling the storage vessel with VOL. If there are holes, tears, or other openings in the primary seal, the secondary seal, or the seal fabric or defects in the internal floating roof, or both, the owner or operator shall repair the items before filling the storage vessel.

(2) For Vessels equipped with a liquid-mounted or mechanical shoe primary seal, visually inspect the internal floating roof and the primary seal or the secondary seal (if one is in service) through manholes and roof hatches on the fixed roof at least once every 12 months after initial fill. If the internal floating roof is not resting on the surface of the VOL inside the storage vessel, or there is liquid accumulated on the roof, or the seal is detached, or there are holes or tears in the seal fabric, the owner or operator shall repair the items or empty and remove the storage vessel from service within 45 days. If a failure that is detected during inspections required in this paragraph cannot be repaired within 45 days and if the vessel cannot be emptied within 45 days, a 30-day extension may be requested from the Administrator in the inspection report required in §60.115b(a)(3). Such a request for an extension must document that alternate storage capacity is unavailable and specify a schedule of actions the company will take that will assure that the control equipment will be repaired or the vessel will be emptied as soon as possible.

(3) For vessels equipped with a double-seal system as specified in §60.112b(a)(1)(ii)(B):

(i) Visually inspect the vessel as specified in paragraph (a)(4) of this section at least every 5 years; or

(ii) Visually inspect the vessel as specified in paragraph (a)(2) of this section.

(4) Visually inspect the internal floating roof, the primary seal, the secondary seal (if one is in service), gaskets, slotted membranes and sleeve seals (if any) each time the storage vessel is emptied and degassed. If the internal floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets no longer close off the liquid surfaces from the atmosphere, or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before refilling the storage vessel with VOL. In no event shall inspections conducted in accordance with this provision occur at intervals greater than 10 years in the case of vessels conducting the annual visual inspection as specified in paragraphs (a)(2) and (a)(3)(ii) of this section and at intervals no greater than 5 years in the case of vessels specified in paragraph (a)(3)(i) of this section.

(5) Notify the Administrator in writing at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by paragraphs (a)(1) and (a)(4) of this section to afford the Administrator the opportunity to have an observer present. If the inspection required by paragraph (a)(4) of this section is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, the owner or operator shall notify the Administrator at least 7 days

prior to the refilling of the storage vessel. Notification shall be made by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, this notification including the written documentation may be made in writing and sent by express mail so that it is received by the Administrator at least 7 days prior to the refilling.

§ 60.115b Reporting and recordkeeping requirements.

The owner or operator of each storage vessel as specified in §60.112b(a) shall keep records and furnish reports as required by paragraphs (a), (b), or (c) of this section depending upon the control equipment installed to meet the requirements of §60.112b. The owner or operator shall keep copies of all reports and records required by this section, except for the record required by (c)(1), for at least 2 years. The record required by (c)(1) will be kept for the life of the control equipment.

(a) After installing control equipment in accordance with §60.112b(a)(1) (fixed roof and internal floating roof), the owner or operator shall meet the following requirements.

(1) Furnish the Administrator with a report that describes the control equipment and certifies that the control equipment meets the specifications of §60.112b(a)(1) and §60.113b(a)(1). This report shall be an attachment to the notification required by §60.7(a)(3).

(2) Keep a record of each inspection performed as required by §60.113b (a)(1), (a)(2), (a)(3), and (a)(4). Each record shall identify the storage vessel on which the inspection was performed and shall contain the date the vessel was inspected and the observed condition of each component of the control equipment (seals, internal floating roof, and fittings).

(3) If any of the conditions described in §60.113b(a)(2) are detected during the annual visual inspection required by §60.113b(a)(2), a report shall be furnished to the Administrator within 30 days of the inspection. Each report shall identify the storage vessel, the nature of the defects, and the date the storage vessel was emptied or the nature of and date the repair was made.

(4) After each inspection required by §60.113b(a)(3) that finds holes or tears in the seal or seal fabric, or defects in the internal floating roof, or other control equipment defects listed in §60.113b(a)(3)(ii), a report shall be furnished to the Administrator within 30 days of the inspection. The report shall identify the storage vessel and the reason it did not meet the specifications of §61.112b(a)(1) or §60.113b(a)(3) and list each repair made.

§ 60.116b Monitoring of operations.

(a) The owner or operator shall keep copies of all records required by this section, except for the record required by paragraph (b) of this section, for at least 2 years. The record required by paragraph (b) of this section will be kept for the life of the source.

(b) The owner or operator of each storage vessel as specified in §60.110b(a) shall keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel.

(c) Except as provided in paragraphs (f) and (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 3.5 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure greater than or equal to 15.0 kPa shall maintain a record of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period.

(d) Except as provided in paragraph (g) of this section, the owner or operator of each storage vessel either with a design capacity greater than or equal to 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 5.2 kPa or with a design capacity greater than or equal to 75 m^3 but less than 151 m^3 storing a liquid with a maximum true vapor pressure that is normally less than 27.6 kPa shall notify the Administrator within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor vapor pressure values for each volume range.

(e) Available data on the storage temperature may be used to determine the maximum true vapor pressure as determined below.

(1) For vessels operated above or below ambient temperatures, the maximum true vapor pressure is calculated based upon the highest expected calendar-month average of the storage temperature. For vessels operated at ambient temperatures, the maximum true vapor pressure is calculated based upon the maximum local monthly average ambient temperature as reported by the National Weather Service.

(2) For crude oil or refined petroleum products the vapor pressure may be obtained by the following:

(i) Available data on the Reid vapor pressure and the maximum expected storage temperature based on the highest expected calendar-month average temperature of the stored product may be used to determine the maximum true vapor pressure from nomographs contained in API Bulletin 2517 (incorporated by reference—see §60.17), unless the Administrator specifically requests that the liquid be sampled, the actual storage temperature determined, and the Reid vapor pressure determined from the sample(s).

(ii) The true vapor pressure of each type of crude oil with a Reid vapor pressure less than 13.8 kPa or with physical properties that preclude determination by the recommended method is to be determined from available data and recorded if the estimated maximum true vapor pressure is greater than 3.5 kPa.

(3) For other liquids, the vapor pressure:

(i) May be obtained from standard reference texts, or

(ii) Determined by ASTM D2879–83, 96, or 97 (incorporated by reference—see §60.17); or

(iii) Measured by an appropriate method approved by the Administrator; or

(iv) Calculated by an appropriate method approved by the Administrator.

[52 FR 11429, Apr. 8, 1987, as amended at 65 FR 61756, Oct. 17, 2000; 65 FR 78276, Dec. 14, 2000; 68 FR 59333, Oct. 15, 2003]

§ 60.117b Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 111(c) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities which will not be delegated to States: §§60.111b(f)(4), 60.114b, 60.116b(e)(3)(iii), 60.116b(e)(3)(iv), and 60.116b(f)(2)(iii).

[52 FR 11429, Apr. 8, 1987, as amended at 52 FR 22780, June 16, 1987]

SECTION E.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

(o) One (1) diesel generator, identified as EU037, approved for construction in 2007, with a maximum power output rate of 2,640 HP, and exhausting to stack SV015.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.4.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for emergency generator EU037, except as otherwise specified in 40 CFR Part 60, Subpart IIII.

(b) Pursuant to 40 CFR 60.19, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.4.2 Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60, Subpart IIII] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart IIII, the Permittee shall comply with the provisions of Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, which are incorporated by reference as 326 IAC 12, for emergency generator EU037 as follows:

Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Source: 71 FR 39172, July 11, 2006, unless otherwise noted.

What This Subpart Covers

§ 60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (3) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005 where the stationary CI ICE are:

(i) Manufactured after April 1, 2006 and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of stationary CI ICE that modify or reconstruct their stationary CI ICE after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§60.4204 and 60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

Fuel Requirements for Owners and Operators

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.

(c) Owners and operators of pre-2011 model year stationary CI ICE subject to this subpart may petition the Administrator for approval to use remaining non-compliant fuel that does not meet the fuel requirements of paragraphs (a) and (b) of this section beyond the dates required for the purpose of using up existing fuel inventories. If approved, the petition will be valid for a period of up to 6 months. If additional time is needed, the owner or operator is required to submit a new petition to the Administrator.

Other Requirements for Owners and Operators

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in the previous model year?

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) In addition to the requirements specified in §§60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the

applicable requirements specified in paragraphs (a) through (f) of this section after the dates specified in paragraphs (a) through (f) of this section.

(h) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

§ 60.4209 What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in §60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine, you must install a non-resettable hour meter prior to startup of the engine.

Compliance Requirements

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. In addition, owners and operators may only change those settings that are permitted by the manufacturer. You must also meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in §60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in §60.4212, as applicable.

(e) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State, or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. Anyone may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. For owners and operators of emergency engines meeting standards under §60.4205 but not §60.4204, any operation other than emergency operation, and maintenance and testing as permitted in this section, is prohibited.

Testing Requirements for Owners and Operators

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (d) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \qquad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in §60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in §60.4204(a), §60.4205(a), or §60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in §60.4204(a), §60.4205(a), or §60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in §60.4204(a), §60.4205(a), or §60.4205(c) may follow the testing procedures specified in §60.4213, as appropriate.

Notification, Reports, and Records for Owners and Operators

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

General Provisions

§ 60.4218 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§60.1 through 60.19 apply to you.

Definitions

§ 60.4219 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary CI ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Engine manufacturer means the manufacturer of the engine. See the definition of “manufacturer” in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means either:

(1) The calendar year in which the engine was originally produced, or

(2) The annual new model production period of the engine manufacturer if it is different than the calendar year. This must include January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year. For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was originally produced.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Subpart means 40 CFR part 60, subpart IIII.

Useful life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for useful life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for useful life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

Tables to Subpart IIII of Part 60

Table 1 to Subpart IIII of Part 60._Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder [As stated in §§ 60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NOX	HC	NOX	CO	PM
KW<8 (HP<11)	10.5 (7.8)	.....	.....	8.0 (6.0)	1.0 (0.75)
8[le]KW<19 (11[le]HP<25)	9.5 (7.1)	.....	.....	6.6 (4.9)	0.80 (0.60)
19[le]KW<37 (25[le]HP<50)	9.5 (7.1)	.....	.....	5.5 (4.1)	0.80 (0.60)
37[le]KW<56 (50[le]HP<75)	.....	.....	9.2 (6.9)	.....	.....
56[le]KW<75 (75[le]HP<100)	.....	.....	9.2 (6.9)	.....	.....
75[le]KW<130 (100[le]HP<175)	.....	.....	9.2 (6.9)	.....	.....
130[le]KW<225 (175[le]HP<300)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225[le]KW<450 (300[le]HP<600)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450[le]KW[le]560 (600[le]HP[le]750)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)	.....	1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

Table 5 to Subpart IIII of Part 60._Labeling and Recordkeeping Requirements for New Stationary Emergency Engines [You must comply with the labeling requirements in § 60.4210(f) and the recordkeeping requirements in § 60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
19[le]KW<56 (25[le]HP<75)	2013
56[le]KW<130 (75[le]HP<175)	2012
KW>=130 (HP>=175)	2011

Table 8 to Subpart IIII of Part 60._Applicability of General Provisions to Subpart IIII
[As stated in § 60.4218, you must comply with the following applicable General Provisions:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1	General applicability of the General Provisions.	Yes	
§ 60.2	Definitions	Yes	Additional terms defined in § 60.4219.
§ 60.3	Units and abbreviations	Yes	
§ 60.4	Address	Yes	
§ 60.5	Determination of construction or modification.	Yes	
§ 60.6	Review of plans	Yes	
§ 60.7	Notification and Recordkeeping.	Yes	Except that § 60.7 only applies as specified in § 60.4214(a).
§ 60.8	Performance tests	Yes	Except that § 60.8 only applies to stationary CI ICE with a displacement of (>=30 liters per cylinder and engines that are not certified.
§ 60.9	Availability of information.	Yes	
§ 60.10	State Authority	Yes	
§ 60.11	Compliance with standards and maintenance requirements.	No	Requirements are specified in subpart IIII.
§ 60.12	Circumvention	Yes	
§ 60.13	Monitoring requirements	Yes	Except that § 60.13 only applies to stationary CI ICE with a displacement of (>=30 liters per cylinder.
§ 60.14	Modification	Yes	
§ 60.15	Reconstruction	Yes	
§ 60.16	Priority list	Yes	
§ 60.17	Incorporations by reference.	Yes	
§ 60.18	General control device requirements.	No	
§ 60.19	General notification and reporting requirements.	Yes	

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)_____

☐ Report (specify)_____

☐ Notification (specify)_____

☐ Affidavit (specify)_____

☐ Other (specify)_____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH

100 North Senate Avenue, MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068

This form consists of 2 pages **Page 1 of 2**

☐ This is an emergency as defined in 326 IAC 2-7-1(12)

- The Permittee must notify the Office of Air Quality (OAQ), within four (**4**) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
- The Permittee must submit notice in writing or by facsimile within two (**2**) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM-10, SO_2, VOC, NO_X, CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

FESOP Quarterly Report

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068
Facility: Truck dump pits EU001
Parameter: The amount of corn received
Limit: Less than 683,280 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature:_____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

FESOP Quarterly Report

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068
Facility: DDGS Dryers EU025-EU026
Parameter: The amount of DDGS Produced
Limit: Less than 227,760 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
Month 1			
Month 2			
Month 3			

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature:_____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

FESOP Quarterly Report

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068
Facility: Boilers EU027 and EU028
Parameter: Natural Gas Usage
Limit: Less than 2,504.4 MMCF per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature:_____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

FESOP Quarterly Report

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068
Facility: Ethanol Loading Rack EU036
Parameter: Denatured Ethanol Loadout
Limit: Less than 69 MMgal per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature:_____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

FESOP Quarterly Report

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068
Facility: Diesel Generator EU037
Parameter: Operating Hours
Limit: Less than 100 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Column 1 This Month	Column 2 Previous 11 Months	Column 1 + Column 2 12 Month Total
Month 1			
Month 2			
Month 3			

☐ No deviation occurred in this quarter.

☐ Deviation/s occurred in this quarter.
Deviation has been reported on:

Submitted by: _____
Title / Position: _____
Signature:_____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: POET Biorefining -North Manchester
Source Address: 868 East 800 North, North Manchester, Indiana 46962
Mailing Address: 2209 East 57th Street N, Sioux Falls, South Dakota 57104
FESOP Permit No.: 169-24515-00068

Months: _____ **to** _____ **Year:** _____

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

Permit Requirement (specify permit condition #)

Date of Deviation:	**Duration of Deviation:**

Number of Deviations:

Probable Cause of Deviation:

Response Steps Taken:

Permit Requirement (specify permit condition #)

Date of Deviation:	**Duration of Deviation:**

Number of Deviations:

Probable Cause of Deviation:

Response Steps Taken:

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	**Duration of Deviation:**
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

Mail to: Permit Administration & Development Section
Office of Air Quality
MC 61 - 53 IGCN 1003
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

POET Biorefining - North Manchester
868 East 800 North
North Manchester, Indiana 46962

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____,I have personal
(Company Name)

knowledge of the representations contained in this affidavit and am authorized to make

these representations on behalf of _____ .
(Company Name)

4. I hereby certify that POET Biorefining - North Manchester located at the 868 East 800 North, North Manchester, Indiana 46962, completed construction of the an ethanol production plant on _____in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on March 28, 2007, and as permitted pursuant to New Source Construction Permit and Federally Enforceable State Operating Permit No. F169-24515-00068, Plant ID No. 169-00068 issued on _____.

Further Affiant said not.
I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature_____

Date_____

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 20 _____ .

My Commission expires:

Signature_____

_____
Name (typed or printed)

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document (TSD) for a New Source Review and a Federally Enforceable State Operating Permit (FESOP)

Source Name:	POET Biorefining - North Manchester
Source Location:	868 East 800 North, North Manchester, IN 46962
County:	Wabash
SIC Code:	2869
Operation Permit No.:	F169-24515-00068
Permit Reviewer:	Jamal Naas

On June 21, 2007, the Office of Air Quality (OAQ) had a notice published in the Wabash Plain Dealer, Wabash, Indiana, stating that POET Biorefining - North Manchester had applied for a Federally Enforceable State Operating Permit to construct and operate a new ethanol production plant. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On July 19, 2007, POET Biorefining - North Manchester submitted comments on the proposed FESOP. The comments and corresponding responses are as follows (bolded language has been added and the language with a line through it has been deleted):

Comment 1:

Section A, Condition A.1 (General Information)
The facility has been assigned an address. Please change all instances currently referencing the intersection of County Road 850 North and Norfolk Southern Railroad, North Manchester, Indiana 46962 to the true address of 868 East 800 North, North Manchester, Indiana 46962.

Response to Comment 1:

The Permittee's correct source address has been updated throughout the permit including the permit cover page, Section A.1, FESOP certification form, emergency occurence report, quarterly reports, and quarterly deviation & compliance monitoring report.

Source Address: **868 East 800 North** ~~Intersection of County Road 850 North and Norfolk Southern Rail Road~~, North Manchester, IN 46962

Comment 2:

The table below lists the draft FESOP permit subsection, permit citation, and the requested change or comment.

Subsection	Citation	Requested Change or Comment
D.1.5 Particulate Emission Limitations	EU030 DDGS Silo Loading Particulate Emission Limit – 364 lb/hr.	The Particulate Emission Limit should be 36.4 lb/hr.

Response to Comment 2:

The particulate emission limit has been corrected.

Berger & Berger LLP Comments

On July 23, 2007, Charles L. Berger of Berger and Berger, LLP (referred to as the "Commenter") submitted comments on the proposed FESOP. The comments and corresponding responses are as follows (bolded language has been added, the language with a line through it has been deleted):

Comment 1:

I. The permit does not limit the facility's emissions to below the major source thresholds

A new major source of air pollution is required to have a Prevention of Significant Deterioration ("PSD") permit under 326 IAC 2-2-1 and a Part 70 operating permit under 326 IAC 2-7 unless it meets certain conditions, set out in 326 IAC 2-8-4(1). Similarily a major source can be subject to various National Emission Standards for Hazardous Air Pollutants ("NESHAP") standards under 326 IAC 2-4.1, 14 and 20, and 40 CFR Part 61 and 63[1]. Sources that are not "major" are exempt from PSD and Part 70 permits and most NESHAP standards. A "major source" means any stationary source that emits, or has the potential to emit, 10 tons per year ("ton/yr") or more of any single hazardous air pollutant ("HAP") which has been listed in Section 112(b) of the Clean Air Act; 25 ton/yr or more of any combination of such HAPs; or 100 ton/yr or more of any regulated air pollutant including fugitive emissions. To qualify for a Federally Enforceable State Operating Permit ("FESOP"), potential to emit and actual emissions must be limited to under the major source thresholds. 326 IAC 2-8-4(1).

The North Manchester facility's potential to emit ("PTE") calculations in the Technical Support Document are already very close to the major source thresholds for PM (96.4 ton/yr), NOx (96.0 ton/yr), and CO (98.9 ton/yr). Technical Support Document ("TSD"), Appendix A, p. 20. As discussed below, the potential to emit calculations underestimate some emissions and the permit limits do not control others. Further, the emission calculations in the TSD are full of errors, precluding any meaningful public review. The facility is a major for at least VOCs, PM, PM10, and acetaldehyde, making it ineligible for a FESOP.

Response to Comment 1:

Indiana has developed a state operating permit program that is enforceable by U.S. EPA and allows sources to limit their air emissions to below the Title V threshold levels. The terms and conditions of the proposed FESOP for POET Biorefining - North Manchester limit air emissions to below the Title V and PSD threshold levels as documented by the emission estimates provided in Appendix A of the TSD. These emission estimates were derived from the best information available for this facility, including published emission factors, as well as stack test data from similar facilities and/or equipment manufacturers. POET Biorefining - North Manchester will be required to test all the major emission points at this facility, and that testing will be performed using testing methodologies developed and approved by the U.S. EPA and IDEM.

This source will limit HAP emissions from the entire source to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ), NESHAP for Industrial Process Cooling Towers (40 CFR 63, Subpart Q), NESHAP for Organic Liquids Distribution (non-gasoline) (40 CFR 63, Subpart EEEE), NESHAP for Miscellaneous Organic Chemical Manufacturing (40 CFR 63, Subpart FFFF), and NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD) are not included in this permit.

No changes were made to the permit as a result of this comment.

[1] The applicable NESHAPs include (40 CFR 63, Subpart ZZZZ), (40 CFR 63, Subpart Q), (40 CFR 63, Subpart EEEE), (40 CFR 63, Subpart FFF), and (40 CFR 63, Subpart DDDDD).

Comment 2:

I.A The facility is a major source for PM

Particulate matter ("PM") and particulate matter with an aerodynamic diameter less than 10 microns ("PM") are regulated pollutants (326 IAC 1-2-52 and 1-2-52.4). The TSD claims that the Draft Permit limits the North Manchester Plant's Potential to Emit (PTE) to 96.4 ton/yr of PM and 76.7 ton/yr of PM10 (TSD, App. A, p. 20). As explained below, the PTE for PM and PM10 from the North Manchester plant under the Draft Permit actually exceeds 100 ton/yr, classifying the North Manchester plant as a major source.

I.A.1 Paved Roads

The draft permit and TSD do not appropriately estimate and limit PM and PM10 emissions from paved haul roads. The TSD PTE summary chart estimated that 19.1 ton/yr of PM and 3.73 ton/yr of PM10 will be emitted from truck travel over paved roads within the North Manchester plant.

I.A.1.a Silt Content

Particulate emissions from paved roads vary with the amount of silt on the road surface, referred to as "silt loading." According to the TSD, the paved road emissions were calculated using an equation from AP-42 (AP-42 Sec. 13.2.1(12/03)) based on a silt content of 0.6 g/m^2 for non-winter and 2.4 g/m^2 for winter (TSD, App. A, p. 14). However, the actual emissions are based on the latter winter value. The TSD's silt content value is the default silt loading for typical urban roadways. There are numerous problems with the use of the 2.4 g/m^2 value.

First, the paved roads of interest here are within the boundary of an industrial site and thus are industrial roadways, not public roadways. Silt loading values of industrial roads are much higher and are reported elsewhere in the same chapter of AP-42. See, for example, the discussion of sources of roadway silt at ethanol facilities in Comment I.A.5 that do not exist on public roadways, i.e., dust fallout in unloading and loading enclosures. These higher silt loading values for industrial roadways, which have means that range from 7.4 to 292 g/m^2, would result in much higher PM and PM10 emissions from haul roads than assumed in TSD. AP-42 Sec. 13.2.1-4, Table 13.2.1-4 (11/06).

Minnesota, which has a long history with ethanol plants, has investigated this issue. Measurements made at the ADM-Marshall ethanol facility in the summer of 2001 found silt loadings ranging from 0.76 to 2.93 g/m^2 with no road cleaning. Measurements made at the same facility in the summer of 2001 found silt loadings of 0.76 to 2.93 g/m^2 with no road cleaning. Measurements made at the same facility in the summer of 2003 with road cleaning found silt loadings of 0.70 to 0.72 g/m^2. The cleaning methds used at this ADM facility include daily road sweeping, vacuuming and washing, and truck speeds limited to 5 miles per hour, none of which are required in the North Manchester Draft Permit.[2]

In spite of these measurements, the Minnesota Pollution Control Agency (MCPA) requires the use of 10.0 g/m^2 as the default silt loading for permits. Id. at 8. MPCA also requires "good documentation for proposed silt loading values" and expects companies to do "extensive" on-site testing/cleaning or to use the silt loadings for industrial facilities in AP-42, Table 13.2.1-4, as noted above. Minnesota permits require sweeping, vacuuming or washing and testing for silt loading. Id. at 14.

Using the Minnesota default silt content of 10 g/m^2, the North Manchester paved road PM emission factor would increase from 2.35 lb/mi to 5.95 lb/mi. This increases paved haul road PM emissions from 19.11 ton/yr to 48.36 ton/yr (5.95 x 32,509 x 0.5/2000 = 48.36). This represents an increase of 29.25 ton/yr (48.36 - 19.11), which, when added to facility-wide PM emissions of 96.4 ton/yr (TSD Appx. A, p. 20), equals 125.65 ton/yr (96.4 + 29.25), putting the facility over the major source threshold of 100 ton/yr for PM. We believe this higher default value is appropriate as North Manchester has failed to supply any documented site-specific silt loadings and has failed to include any emission or other limitations or control measures to assure that a lower silt loading is achieved in practice.

[2] Air Modeling - Training, Minnesota Air, Water, and Waste Environmental Conference, February 14, 2006.

Second, AP-42 explains that there is a temporary adder for each application of antiskid abrasive. The TSD calculations did not use this adder (TSD App A, p.14). The adder is 2 g/m^2 for each application of antiskid abrasive for snow/ice control (AP-42, Table 13.2.1-3). The inclusion of the adder would increase the winter silt loading from 2.4 to 4.4 g/m^2. This would increase the paved road haul road PM emission factor from 2.35 lb/mi (TSD Appx A, p. 13) to 3.49 lb/mi and increase paved haul road PM emissions from 19.11 ton/yr to 28.36 ton/yr (3.49 x 32,509 x 0.5/2000 = 28.36). This represents an increase of 9.25 ton/yr (28.36 -19.11), which, when added to facility-wide PM emissions of 96.4 ton/yr, equals 105.65 (96.4 + 9.25), putting the facility over the major source threshold of 100 ton/yr for PM.

I.A.1.b Haul Road Fugitive Dust Control Efficiency

The paved road fugitive PM and PM10 PTE calculations in the TSD assume that emissions will be reduced by 50% by "periodic sweeping." (TSD Ap. A, p. 13). The draft Permit contains a condition that states:

> The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2 and IAC 2-8.

Draft Permit, p. 30, Condition D.1.4.d. Two problems with this condition lead to the conclusion that, for purposes of calculating potential to emit, the 50% reduction is invalid and should not be allowed.

First, this condition does not require, much less assure that sweeping will be sufficient to reduce PM and PM10 emissions by 50%. The condition only requires that "sweeping be performed in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2." The cite to 326 IAC 2-2 is ambiguous and unenforceable because this regulation has many subparts, none of which relate to sweeping of paved roads at industrial facilities or achieving a 50% control efficiency from any type of facility.

Second, the term "periodic" is ambiguous and thus unenforceable. The plain meaning of "periodic" simply means that the event occurs at regular intervals. This Draft Permit does not define the interval. Does periodic mean daily? Weekly? Monthly? Something in between? The frequency of sweeping determines the amount of control achieved. Studies done in Minnesota and elsewhere indicate that daily road sweeping, vacuuming and washing (weather permitting) plus speed limit controls (5 mph) are required to achieve 50% control of fugitive PM and PM10 emissions. MPCA at 10. The Draft Permit does not even mention vacuuming, washing, or speed limits. Permits for ethanol plants in other states require daily sweeping and periodic silt testing to confirm emissions, unless the emissions are based on a high default silt loading (e.g., 3 to 10 g/m^2[3]). Therefore, North Manchester cannot rely on this condition to reduce the potential to emit of the haul roads.

In order for a permit to be enforceable as a practical matter, a permitting agency must include specific legal obligations in the permit so that sources will observe the permit constraints and compliance can be determined. National Min. Ass'n v. U.S. EPA, 59 F.3d 1351, 1363 (D.C. Cir. 1995). Conditions that are vague, contradictory, or confusing are unenforceable. Vague and subjective terms like "periodic" are unenforceable.

Third, the purpose of a permit is to individualize a regulation to site-specific conditions. Condition D.1.4.d fails to do that. No site-specific conditions are included in the Draft Permit to add detail to the term "periodic" or to assure 50% PM/PM10 control, the level assumed in the potential to emit calculations. Furthermore, there is no reason to believe that sweeping alone, regardless of how frequent, can reduce emissions of both PM and PM10 by 50%. In fact, there are numerous studies that demonstrate that periodic street sweeping alone does not reduce PM/PM10 emissions and that PM10 is a particular challenge.[4] The impacts of street sweeping are short-lived, lasting no more than 3-4 hours. Generally, street sweeping followed by washing is required to achieve up to 30% PM control.[5]

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[3] See, for example, ADM Corn Processing; Columbus, Nebraska, Truck Traffic Fugitive Control Strategy and Monitoring Plan, ADM Haul Roads; Cargill North American Corn Milling, Truck Traffic Fugitive Control Strategy and Monitoring Plan, Cargill North American Sweeteners, Blair, Nebraska.

[4] Dennis R. Fitz, Evaluation of Street Sweeping as a PM10 Control Method, Final Report Prepared for South Coast Air Quality Management District, January 29, 1998. Available at: http://WWW.cert.ucr.edu/research/pubs/98-1p-rt4h-005-fr.pdf

This ambiguous language allows unlimited enforcement discretion in the determination of whether a violation has occurred, and thus is unenforceable. In regard to Indeck-Elwood, LLC, EAB Slip Opinion, PSD Appeal No. 03-04 (Sept. 27, 2006) at 72 n.101, a permit may not reserve agency discretion to determine whether a violation has actually occurred. A condition that only requires "periodic" sweeping, when the underlying potential to emit calculations assumes 50% control, reserves enforcement discretion to IDEM and prevents citizen enforcement of the permit without a decision by IDEM, thus allowing the source to negotiate the condition "off-permit." As a result, reserving enforcement and violation decisions as to haul roads for the agency renders the Draft Permit unenforceable by citizens.

To justify a 50% control efficiency, the Draft Permit must be modified to require at least daily street sweeping followed by washing and enforceable truck speed limits. Absent such requirements, PM emissions from paved haul roads should be recalculated assuming zero control. This would increase paved haul road PM emissions from 19.11 ton/yr to 38.22 ton/yr, or by 19.1 ton/yr. This increase, plus other facility-wide PM emissions (96.4 ton/yr equals 115.5 ton/yr (96.4 + 19.1), which exceeds the major source threshold of 100 ton/yr.

I.A.2 Omitted PM Sources

The TSD omitted several sources of fugitive PM/PM10 dust from paved surfaces.

First, the facility will require workers, who will drive to work in cars and trucks and park in a parking lot. The TSD does not include any fugitive dust PM emissions from worker trips over paved haul roads and the parking lot, nor does the Draft Permit contain any conditions to limit these emissions.

Second, the emission factors used to calculate PM emissions from paved haul road truck travel include only resuspended road surface material and exclude PM/PM10 emissions from brake wear and tire wear (AP-42, p. 13.2.1-1). These emissions must be separately estimated using a model such as EPA's MOBILE6.2 and added to the resuspended road dust emissions. Ibid.

Response to Comment 2:

Since U.S. EPA has ruled that dry corn milling facilities producing ethanol for fuel are exempt from the component term ‘‘chemical process plants’’ within the statutory definition of ‘‘major emitting facility’’ in section 169(1) of the CAA, the major source threshold for PM for this source is no longer 100 tons per year, but rather 250 tons per year. The potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the paved roads at this source are 19.11 tons per year, which is less than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are not applicable.

IDEM, OAQ has evaluated the silt loading value used in the emission calculations and investigated the claims made by the commenter with regard to the calculations included in the permit. IDEM, OAQ agrees with the commenter that there is a range of silt loading values presented in AP-42 Chapter 13. Public paved road silt loadings are dependent upon: traffic characteristics (speed, Average Daily Traffic (ADT), and fraction of heavy vehicles); road characteristics (curbs, number of lanes, parking lanes); local land use (agriculture, new residential construction) and regional/seasonal factors (snow/ice controls, wind blown dust). However, based on IDEM’s evaluation, the default silt loading number of 0.6 grams per square meter value is consistent with the ranges prescribed in AP-42 for paved roads at this type of industrial facility. According to AP- 42, Table 13.2.1-3, the default silt loading number is 0.6 g/m^2 for sites that have average daily traffic less than 500 vehicles per day. The averaged traffic at the proposed ethanol production plant will be about 156 vehicles per day. Furthermore, the types of trucks traveling onto the POET Biorefining - North Manchester property are not expected to be carrying in mud and dirt from unpaved roads because these trucks are traveling onto the POET Biorefining - North Manchester site location from paved roads. Nevertheless, IDEM, OAQ reserves the right to collect site-specific silt loading data if IDEM determines that there is a problem with heavy silt.

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[5] Y-M Chang and others, Effectiveness of Street Sweeping and Washing for Controlling Ambient TSP, Atmospheric Environment, v.39, no. 10, March 2006, pp. 1891-1902.

No adjustment was made to the emission factor to account for the application of antiskid abrasive. As AP-42 indicates, this factor is only to be considered a “temporary” adjustment for each application of such material, therefore, IDEM considers any increase in PM and PM10 emissions from such activities to be negligible.

IDEM, OAQ is aware that the term "periodic" bears a certain amount of discretion; however, IDEM, OAQ believes it is unnecessary to define "periodic". It is unreasonable to require sweeping at a predetermined interval because each facility has different geographical surroundings and will experience different weather patterns. To define "periodic" as daily, monthly, or weekly would present unnecessary requirements; especially, during events such as a snow storm or rain event. IDEM, OAQ believes it is more practical for facility owners to assess their fugitive dust generation and implement control measures (sweeping) as needed; therefore, IDEM, OAQ has included a requirement for the source to keep records of their sweeping; and at anytime, IDEM, OAQ reserves the right to require more frequent sweeping if IDEM identifies a problem.

No changes have been made to the permit as the result of this comment.

Comment 3:

I.A.3 Baghouses

The facility includes 10 baghouses that control PM/PM10 emissions from grain receiving, handling and hammermilling, and DDGS handling and loadout. Draft Permit, p.31. The Draft Permit does not properly calculate the emissions from these baghouses.

The TSD assumes 99% PM/PM10 control from the baghouses in the grain receiving, handling and milling operations (TDS Ap. A, p. 1, 8). Industry personnel, environmental control officials, and equipment vendors indicate that there is evidence that operating problems may result in significant periods during which the control equipment is shut down or operating inefficiently[6]. Typical causes of malfunctions are torn bags that allow excess emissions from the control device outlet and plugging of the bags, which creates excess emissions at the source. Therefore, the PTE calculation must include a safety factor for the operation of the baghouse and can not be solely based on emission rates determined for proper functioning of the control device.

The draft permit allows operations to continue after bag failure has occurred. For multi-compartment baghouses, the draft permit does not require that the controlled process is shutdown. Further, the draft permit only requires notification of IDEM 10 days or more after bag failure is observed (Draft permit, p.31, Condition D.1.8(b)). Such a long wait could be minimized or eliminated by requiring that the facility maintain a supply of spare equipment, including bags, air leak maintenance parts and equipment, parts for blowback equipment, and motors and gearboxes.

In the event a broken or failed bag is detected in a single-compartment baghouse, Condition D.1.12 allows continued operation if the event is an emergency or if the process is batch. The application, draft permit, and TSD are silent as to whether the baghouses are single or multi-compartment units.

The excess emissions that occur during these periods were not included in the potential to emit calculations for processes controlled by baghouses. This is especially important in this case where the TSD found the facility-wide potential to emit for PM of 96.4 ton/yr, or 96% of the allowable limit, with the baghouses functioning perfectly at all times. This should be addressed by using a safety factor or uncertainty factor, as recommended by the U.S.EPA.[7]

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[6] D. Wallace and V. Ramananthan, Review of Compliance Monitoring Programs with Respect to Grain Elevators, U.S. Environmental Protection Agency Contract No. 68-01-4139, WA 14, U.S. Environmental Protection Agency, Research Triangle Park, NC, 1980, pp. 15-16; in: A. Buonicore and W. Davis (eds.), Air Pollution Control Manual, Grain Handling and Processing, Van Nostrand Reinhold, New York, NY, 1992, pp. 517-528.

[7] U.S. EPA, Emission Factor Uncertainty Assessment, February 2007, p. ES-2 and Tables 2-1 and 2-2.

This problem is aggravated because there is no continuous direct monitoring to assure baghouses are operating at 99% control day in day out. Rather, the draft permit contains two ambiguous conditions requiring various types of indirect monitoring that virtually assure leaks will go undetected. These requirements are vague and unenforceable, do not require a valid observation method, such as EPA Method 9, and even if they did, would not ensure that the plant remains below major source emission thresholds.

First, Condition D.1.10 requires daily "visible emission notations" at baghouse stacks only "during normal daylight operations". This does not assist in identifying visible emissions during the periods of concern, abnormal operations, and exempts nighttime operations from compliance. If "abnormal" emissions are observed, one need only take "reasonable response steps". Draft permit , Condition D.1.10. These are taken as "expeditiously as practicable". Draft permit, p. 25, Condition C.16(a). "Reasonable" and "as expeditiously as practicable" mean different things to different people and are thus ambiguous and not enforceable. The draft permit contains no guidance on how the "visible emission notations" will be made. There are well established procedures for making such observations, set out in EPA test methods, such as Method 9, and include making observations with the sun behind the observer's back, perpendicular to the plume. Incorrect reading methodology could result in not observing abnormal conditions. The draft permit should be revised to cure these defects.

Second, Condition D.1.11 requires daily pressure drop measurements across the baghouses. However, inlet-to-outlet pressure drop cannot detect leaks in individual bags or even several individual bags. This requires the use of a much more effective bag leak detection system, which is not required.

When a source is avoiding the more stringent requirements of the PSD and Part 70 operating permit programs of the Clean Air Act by receiving a FESOP, the emission limits in the permit must be federally and practically enforceable. The permit and its supporting materials do not demonstrate that 99% control at the baghouses is both possible and enforceable as a practical matter at all times. Absent that showing, such as by requiring bag leak detection systems on all baghouses and process shutdown during any malfunction, the potential to emit calculations must be based on maximum potential emissions that include emissions from malfunctions. Requiring the Permittee to take "reasonable" response steps and to proceed to repair problems as "expeditiously as practicable" does not ensure that actual emissions from the facility will remain below major source thresholds.

Response to Comment 3:

In regards to the commenter's concern that the baghouses in the grain receiving, handling and milling emission calculations must include a safety factor, IDEM, OAQ feels that the specific monitoring requirements in the permit regarding baghouses ensures that baghouse malfunctions are minimized. IDEM, OAQ believes that monitoring the pressure drop across the baghouses, is important for determining the proper operation of the control equipment. The Permittee is required to take reasonable response steps when a compliance monitoring parameter is determined to be out of range or abnormal under Condition C.16 - Response to Excursions or Exceedances. This condition ensures that the control equipment is returned to proper operation as soon as practicable, while still allowing the Permittee the flexibility to respond to situations that were not anticipated. In addition, visible emission notations are also used as a trigger that the source performs some corrective action on the facility if visible emissions are abnormal, which helps ensure continuous compliance with the emission limitations.

The visible emission notations are used to ensure compliance with the permit limits for particulate matter for those emission units that are controlled by a baghouse or a bin filter. The baghouses use air flow to bring particulate matter emissions into the baghouse structure and through filter bags. The bags capture almost all the particulate matter. The bin filters capture particulate matter as air passes through the filter and out of the bin. The source is required to test each baghouse and bin filter to make sure they are operating properly. This test is done between 60 and 180 days of the source’s initial startup. If IDEM, OAQ finds that the test shows that the source is in compliance, follow up tests are required at least every five years. Before the initial test and in between tests, IDEM, OAQ requires the source to conduct preventive maintenance and parametric monitoring to ensure that the baghouses and bin filters are operating properly. Parametric monitoring has two components. The first is a requirement that the source monitors the pressure drops across the baghouses and bin filters on a daily basis. The second is that the source makes daily visible emission notations of the baghouse and bin filter exhausts, noting whether the

exhaust's emissions look "normal" or abnormal".

The visible emission notation requirement is designed as a trigger for the source to perform some corrective action on the facility if visible emissions are abnormal, which helps ensure continuous compliance with emission limitations. As the visible emissions condition states, a trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The employee does not need to be trained as a certified opacity reader, nor does the employee's training need to be done by a certified opacity reader.

The purpose of specifying that a trained employee perform the visible emissions notations is to make sure that the employee will know the difference between "normal" and "abnormal" visible emissions from the particular process. This reading does not need to be an exact determination of the opacity of the emissions. When a baghouse or bin filter has failed, the resulting change in the visible emission is quite noticeable as being different from the normal emission from that device. This "abnormal" reading is a prompt for the source to take responsive action to put the device back into proper operation. It is a permit violation if the source fails to take such action.

No changes were made to the permit as a result of this comment.

Comment 4:

I.A.4 Boilers

The facility includes two 143 MMBtu/hr natural gas-fired boilers. The Draft Permit contains a single PM emission limit for these boilers of 0.25 lb/MMBtu (Draft permit, p. 40, Condition D.3.6). This condition alone allows PM emissions from these boilers of 313.2 ton/yr (0.25 x 283 x 8760/2000 = 313.2). We believe the Draft Permit failed to include all applicable PM emission limits for the boilers. The TSD potential to emit calculations, for example, are based on a PM emission factor of 0.00186 lb/MMBtu, which should have been included in the draft permit (TSD Ap. A, p. 9).

Further, New Source Performance Standards ("NSPS") for industrial, commercial, and institutional steam generating units apply to the boilers. 40 CFR Subpart Db. The draft permit replicates portions of 40 CFR Subpart Db in Section E.2, but omits the section that contains NSPS limits on particulate matter, Section 60.43b, while retaining the section that requires compliance with the omitted PM limit, 60.46(b). Draft Permit, Sec. E.2, pp. 68-73. Further, the sections of 40 CFR Subpart Db that are included ignore the changes to Subpart Db that were promulgated on June 13, 2007.

72 FR 32709. IDEM's practice of incorporating verbatim portions of the NSPS into the Permit is unnecessary because 326 IAC 12 incorporates these by reference. This practice is confusing, creates enforcement ambiguities, and makes the permit unnecessarily voluminous and complex. We recommend that the applicable NSPS standards be listed without reproducing the text, particularly incomplete portions of the text.

The TSD potential to emit calculations assume these two boilers would emit 2.3 ton/yr of PM (TSD Ap. A, p.9, 20). These emissions were calculated from an AP-42 emission factor of 0.00186 lb/MMBtu (TSD Ap. A, p. 9). There are three problems with the TSD's boiler emission calculations.

First the TSD's boiler PM calculations are based on only filterable PM. IDEM has long regulated total PM, comprising the sum of filterable plus condensable PM. Particulate matter emissions from the RTO are correctly calculated as the sum of filterable and condensable. TSD, p. 4. The Premier facility, an identical ethanol plant, calculated total PM emissions using an emission factor of 0.00745 lb/MMBtu. Premier TSD APPx. A, p. 9. Using the Premier PM emission factor for North Manchester (which is equal to the PM10 emission factor used for North Manchester), boiler PM emissions increase from 2.33 ton/yr to 9.33 ton/yr (0.00745 x 286 x 8760/2000 = 9.33) or an increase of 7.0 ton/yr (9.33 - 2.33 = 7.00). This change alone would increase the PM facility-wide potential to emit from 96.4 ton/yr to 103.4 ton/yr.

Second, the TSD uses more significant figures in its calculation that are warranted by its source, AP-42 and its support document. The TSD used 0.00186 lb/MMBtu and 0.00745 lb/MMBtu for PM and PM10,

respectively. However, AP-42 reports these values as 0.00019 lb/MMBtu and 0.0076 lb/MMBtu (converted from lb/MMSCF assuming 1000 Btu/SCF). The TSD improperly failed to round the emission factors to the same number of significant figures reported in AP-42, thus underestimating emissions.

Third, the AP-42 PM/PM10 emission factors that the TSD relied on are rated "D" by EPA. This means: "Below average". Factor is developed from A-, B-, and/or C-rated test data from a small number of facilities, and there may be reason to suspect that these facilities do not represent a random sample of the industry. There also may be evidence of variability within the source population." AP-42, Introduction, p.10.

The EPA recommends an "uncertainty ratio" to adjust a population mean emission factor, such as used for the boiler, for a single emission unit application, as here. The "uncertainty ratio" is a value by which the mean emission factor is multiplied to estimate the desired population statistic. A 95th percentile value is appropriate, given the below-average D rating of the boiler PM/PM10 emission factors and the fact that potential to emit requires an estimate of maximum emissions. The corresponding EPA uncertainty ratio is 2.3, based on 10 measurements[8]. EPA.2/7, Table 2-2. This is consistent with POET stack tests, which show boiler PM emissions ranging from 0.12 lb/hr to 2.82 lb/hr (12.35 ton/yr) when adjusted to 69 MGY. Thus, the TSD should have used an emission factor of at least 0.015 lb/MMBtu (4.29 lb/hr) to calculate PM and PM10 potential to emit for the boilers. This would increase boiler PM emissions from 2.33 ton/yr to 18.79 ton/yr (0.015 x 286 x 8760/2000 = 18.79) or an increase of 16.46 ton/yr (18.79 - 2.33 = 16.46). This change would increase the PM facility-wide potential to emit from 96.4 ton/yr to 112.86 ton/yr and PM10 emissions from 76.7 ton/yr to 93.16 ton/yr.

Response to Comment 4:

Since U.S. EPA has ruled that dry corn milling facilities producing ethanol for fuel are exempt from the component term "chemical process plants" within the statutory definition of "major emitting facility" in section 169(1) of the CAA, the major source threshold for PM for this source is no longer 100 tons per year, but rather 250 tons per year. Nonetheless, particulate matter is defined in 326 IAC 1-2-52 and 326 IAC 1-2-52.4 as measured by an applicable reference method in 40 CFR 50 (for PM10), or as measured by the method described in Appendix B of 40 CFR 30 (for PM/TSP). The latter does not include condensable PM. Therefore, PM should include only the filterable PM.

The two identical boilers burn natural gas. The natural gas usage is limited for the purpose of controlling NOx and CO emissions. The same maximum throughput was used when calculating PM/PM10. This maximum natural gas usage will limit the facility from emitting PM/PM10 emissions such that when combined with other emission units at the source will limit the facility PM/PM10 to below the 100 tons per year threshold. State rule 326 IAC 6-2-4 limits the two boilers to 0.25 lbs/MMBtu heat input. However, the maximum throughput limit for natural gas will ensure that PM/PM10 from the two boilers remain below the emissions that are calculated based on AP-42 emissions factors, which are substantially less than the limit required by 326 IAC 6-2-4.

There are no PM standards for these natural gas boilers under 40 CFR 63, Subpart Db. The standards for PM under 60.43b apply to owners and operators of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005 that combusts coal or combusts mixtures of coal with other fuels. Section 60.46b(a) was retained because the second sentence affects NOx where it requires that NOx emission standards under 60.44b apply at all times.

There are some minor changes to Subpart Db that were promulgated on June 13, 2007. The language for the New Source Performance Standards (NSPS) for industrial, commercial, and institutional steam generating units has been updated to reflect the latest revision.

[8] U.S. EPA, Emission Factor Documentation for AP-42 Section 1.4 Natural Gas Combustion, March 1998, Table 2.2-1.

Comment 5:

I.A.5 Process Fugitives

The unloading of grain and the loading of DDGS into trucks and rail cars generate fugitive PM/PM10 emissions. These operations take place in enclosures and where feasible, are vented to baghouses (except loading of DDGS into trucks). The fugitive PM and PM10 emissions from these operations were calculated using AP-42 emission factors. TSD Appx. A, pp. 1, 8. There are four problems with these emission calculations.

First, the potential to emit is based on AP-42 emission factors with a rating of "E". A footnote indicates the emission factors are based on only two measurements. AP-42, Table 9.9.1-1, note e. EPA explains that an "E" rating means: "Poor. Factor is developed from C- and D-rated test data, and they may be reason to suspect that facilities do not represent a random sample of the industry. There also may be evidence of variability within the source category population". AP-42, introduction, p.10. As explained in Comment I.A.5, the EPA recommends an "uncertainty ratio" to adjust a population mean emission factor for a single emission unit application, as here. A 95th percentile value is appropriate, given the E rating of the emission factors and the fact that potential to emit requires an estimate of maximum emissions. The corresponding EPA uncertainty ration is 3.9, based on less than three measurements. EPA 2/07, Table 2-2.

Using this uncertainty factor, grain receiving PM emissions increase from 12.3 ton/yr to 48.0 ton/yr (12.3 x 3.9 = 48.0) and DDGS loadout PM emissions from 4.33 ton/yr to 16.9 ton/yr (4.33 x 3.9 = 16.9). This increases fugitive PM emissions by 48.3 ton/yr (48.0 - 12.3 + 16.9 - 4.33 = 48.3) and facility-wide potential to emit from 96.4 ton/yr to 144.7 ton/yr. Similarly, fugitive PM10 emissions are increased by 15.9 ton/yr ([4.04+1.46] x 3.9 - 4.03 - 1.46 = 15.9), from 76.7 ton/yr to 92.6 ton/yr. This increase in PM10, combined with other increases in PM10 discussed above, exceeds the 100 ton/yr major source threshold.

Second, the fugitive emission calculations assume that 50% of the emissions from loading DDGS is captured by an enclosure, described as a "dump shed" for grain unloading and a "shed" for DDGS loading (Ap., PTE Calculations, March 2007, pp. 29-30). The TSD assumes that 80% of the fugitive dust from unloading grain is captured by an enclosure plus baghouse CE001. TSD Appx. A, p. 1. Since baghouse CE001 is assumed to control 99% of the dust that enters it, this tacitly assumes the enclosures would only control 19% of the dust. No support is given for the assumed 50% control efficiency of the DDGS enclosure, the 19% control efficiency of the grain enclosure, nor is any explanation offered for the difference in control efficiency of the two enclosures. Finally, the Draft Permit does not require the use of any enclosures to control fugitive dust so these control assumptions are not enforceable and thus unwarranted. Potential to emit should be based on uncontrolled emissions, absent enforceable permit conditions.

Third fugitive dust would fall onto the floor of these enclosures and be repeatedly re-entrained by truck and train traffic or would be emitted through open doors at either end of enclosures. Once omitted, some of this dust would fallout on haul roads and be re-entrained by haul trucks. Further, dust that accumulates within the enclosure will be tracked out of the enclosures by trucks and trains and be deposited on haul roads within the facility. These two mechanisms for depositing dust on haul roads void the assumption that facility haul roads are comparable to urban roads with similar amounts of traffic. The enclosures would have to be continuously swept to prevent dispersal of fugitive dusts from unloading grain and loading DDGS.

Finally, the Daft Permit does not contain any limits on fugitive PM/PM10 emissions from unloading grain and loading DDGS, nor any monitoring and recordkeeping requirements. Thus, there is no way to verify that emissions conform to the assumptions in the potential to emit calculations. At a minimum, the Draft Permit should be modified to explicitly require that fugitive emissions be limited to the emission factors used in the potential to emit calculations - 0.18 lb/ton for grain unloading and 0.086 lb/ton for DDGS loading - and monitored to demonstrate compliance.

Response to Comment 5:

An emission source which qualifies as a major source under Part 70 rules, may voluntarily accept federally enforceable limits on air pollutant emissions to obtain a FESOP rather than the Title V permit. The federally enforceable limits in a FESOP are derived from sourcewide emissions calculations that account for the maximum potential emissions from each emission unit at the source. Certain operations have minimal PTE; therefore, it is sometimes unnecessary to limit these operations. However, any emissions from an unlimited emission unit are still counted in their entirety towards the sourcewide emissions when determining the permitting level. Therefore, IDEM, OAQ believes it is unnecessary to limit all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. When a PTE is limited, the Permittee is subject to record keeping and reporting requirements in order to demonstrate compliance with those limits. Collectively, the limited PTE of certain activities along with the unlimited PTE of the remaining activities located at the source must be below major thresholds to be considered a FESOP.

Since U.S. EPA has ruled that dry corn milling facilities producing ethanol for fuel are exempt from the component term ‘‘chemical process plants’’ within the statutory definition of ‘‘major emitting facility’’ in section 169(1) of the CAA, the major source threshold for PM for this source is no longer 100 tons per year, but rather 250 tons per year. Nonetheless, POET Biorefining - North Manchester has communicated to IDEM that each building (one for grain receiving and one for DDGS storage) has a roof, two solid walls, and two sets of doors. POET Biorefining - North Manchester currently closes both sets of doors on the grain receiving building when a truck is unloading. Due to the length of railcar unit trains, the doors are not closed during rail unloading. However, the unit-train itself blocks a majority of the open area to increase capture efficiencies. IDEM feels that 50% is a conservative control estimate for an unloading operation occurring within a building (in this case, a building with two sets of doors).

While the uncontrolled component of fugitive emissions were calculated using the AP-42 emission factor, the Department feels that using the site-specific baghouse design parameters provides a more reliable, and conservative, emissions estimate for each baghouse stack. POET Biorefining - North Manchester is required to conduct stack testing on the baghouse (Condition D.1.9) to verify compliance with the emission limit of 0.14 lb/hr PM/PM10 (Condition D.1.4).

Furthermore, it is not necessary to limit the total grain received by hopper truck versus total grain received by straight truck. The calculations (see page 8 of Appendix A - TSD) assume 100% of the total grain throughput received by straight trucks, a conservative value as some rail traffic and loadout would lower potential emissions.

No changes have been made to the permit as the result of this comment.

Comment 6:

I.B The Facility is a Major Source for VOCs

The conversion of grain into ethanol produces a number of process streams that contain high concentrations of VOCs. These VOCs are released to the atmosphere at many points in the process, including loading losses and equipment leaks from valves, fittings, pumps, sampling connectors, and process drains. The TSD underestimated the VOC emissions from the two major sources of VOCs--the DDGS Cooler and Loading. The RTO emission calculations also contain numerous errors, which further underestimate emissions. Finally, the Draft Permit limits do not restrict emissions to those assumed in the potential to emit calculations. When these various errors are corrected, VOC emissions exceed the major source threshold of 100 ton/yr both individually and together.

I.B.1. DDGS Cooler

The TSD estimated the VOC emissions from the DDGS Cooler using an emission factor of 5 lb/hr provided by the source and "based on engineering estimate from similar facilities." TSD Appx. A, p. 7. The TSD and application do not provide any additional information on the origin of this factor nor identify the similar facilities. Thus, it is unsupported. The TSD for an identical POET facility, Premier, reported VOC emissions of 7.3 lb/hr from the DDGS Cooler, Premier TSD Appx. A, p.7. The record is silent as to

why emissions from the DDGS Cooler differ by nearly 50% on two identical facilities permitted by IDEM.

Stack tests on other similar POET facilities indicate that DDGS Cooler VOC emissions are substantially underestimated. The June 2004 stack test at the Iowa Ethanol facility reported much higher VOC emissions, 12.82 lb/hr including below detection limit values, and 12.46 lb/hr excluding below detection limit values. This much higher value was attributed to the detection of a previously undetected chemical, 2,3 Butanediol, discovered due to new analytical procedures developed by Interpoll Laboratories.[9] It is not clear whether the engineering estimate in the TSD was based on data collected using these new procedures and thus included 2,3 Butanediol emissions.

Regardless, if emissions from the DDGS Cooler are based on the June 2004 Iowa test, a reasonable assumption given the limited amount of test data for this source,[10] the potential to emit VOC from the North Manchester DDGS Cooler would be 61.3 ton/yr.[11] These emissions, when added to those from other sources at North Manchester (TSD Appx. A, p. 20) sum to 120.3 ton/yr,[12] which exceeds the 100 ton/yr major source threshold. Thus, North Manchester is a major source, triggering PSD review and requiring a Title V permit.

Response to Comment 6:

The 5 lb/hr VOC emission rate for the DDGS Cooler is based upon results from the July 18-19, 24-26, 2006 air emission compliance testing at POET Biorefining - Jewell, formerly Horizon Ethanol Facility, in Jewell, Iowa. The design of both POET Biorefining - Jewell and POET Biorefining - North Manchester is POET's "Centerline 60" facility. The stack test data for POET Biorefining - Jewell included emissions of 2,3 Butanediol. Therefore, the potential emissions from the DDGS cooler remain unchanged, and POET Biorefining - North Manchester is limited to below major source thresholds.

No changes have been made to the permit as the result of this comment.

Comment 7:

I.B.2 Ethanol Loading Rack

The Permit and TSD inappropriately calculate and limit VOC emissions from ethanol loading. The TSD calculates VOC emissions from loading denatured ethanol into trucks and railcars based on AP-42, Chapter 5.2. TSD Appx. A, p. 11. This calculation indicates that truck loading, the worst case, would release 4.86 lb of VOC per thousand gallons of ethanol loaded ("4.86 lb/kgal"). Ibid.
First, the condition states: "The VOC emissions from enclosed flare CE015 shall not exceed 4.86 lbs/kgal". The Draft Permit restricts ethanol loadout to 69,000,000 gallons. Thus, as written, the Draft Permit allows 167.7 ton/yr of VOC, which exceeds the 100 ton/yr major source threshold. The Draft Permit errs by stipulating the 4.86 lbs/kgal as emissions from the flare. This emission factor is the uncontrolled VOC emissions from loading ethanol into tanker trucks. The Draft Permit should be modified to state: "The uncontrolled VOC emissions from loading ethanol shall not exceed 4.86 lbs/kgal".

Second, the Draft Permit does not require any testing to demonstrate that this emission factor will be achieved during facility operation. Thus, the assumed potential to emit VOC from the ethanol loading rack is not enforceable and a FESOP is not warranted.

I.B.2.b Ethanol Loading Rack Emissions Are Underestimated

The TSD estimates that the ethanol loading rack would emit 3.35 ton/yr of VOCs. TSD Appx. A, pp. 11,

[9] Broin & Associates, August 6, 2004.

[10] U.S. EPA, Emission Factor Uncertainty Assessment, February 2007.

[11] Revised DDGS Cooler Emissions: (60 MGY/55 MGY) (12.82 lb/hr)(8760 hr/yr)/2000 lb/ton = 61.25 ton/yr.

[12] Revised North Manchester Total VOC Emissions: 46.0 + 6.75 + 3.35 + 0.05 + 2.02 + 7.45 + 1.00 + 61.3 = 127.9 ton/yr

20. Elsewhere, the TSD reports VOC emissions from the loading rack of 2.48 ton/yr an evident error if the 88.6 ton/yr total shown for facility-wide VOC emissions is correct. TSD, p. 6. This error should be corrected. Further, the calculation itself (TSD Appx. A, p. 11) underestimates the potential to emit VOCs from the loading rack.

First the calculation procedure fails to follow clear EPA guidance in AP-42, which is incorporated by reference into Indiana regulations. In AP-42, EPA clearly states that the formula used in the TSD, Appx. A, p. 11, has a probable error rate of+/- 30%. AP-42, p. 5.2-4. Potential to emit must be based on maximum emissions. Thus, the TSD should account for the 30% error rate by assuming that the emission factor is 30% higher than the factor resulting from the AP-42 equation. Increasing the emission factors by 30%, the controlled VOC emissions from loading ethanol increase from 3.35 ton/yr to 4.30 ton/yr.

A 30% increase relative to the average emission factor is consistent with recent EPA studies of AP-42 emission factor uncertainty.[13] The emission factors in AP-42 were developed to assist in the preparation of emission inventories where the "average" value is relevant. These factors were not intended to determine potential to emit. EPA 2/7, pp. ES-1, 1-3. In recognition of this shortcoming, the EPA has developed uncertainty factors that apply when the intended use is to determine whether a particular source's emissions are sufficiently large to establish applicability of a rule, as here. For rule applicability, the upper end of the range should be used to reduce the chance that a specific source's applicability determination could be found to be incorrect. EPA 2/07, p. 1-3. The resulting uncertainty factor, for example, assuming 25 measurements and the 95th percentile value of the mean is 1.3, consistent with the 30% error reported in AP-42. EPA 2/07, Table 2-3.

Second, the TSD calculations assume that a flare will reduce the loading VOC emissions by 98%. EPA clearly states that this control efficiency is too high:

> Control efficiencies for the recovery units range from 90 to over 99 percent, depending on both the nature of the vapors and the type of control equipment used. However, only 70 to 90 percent of the displaced vapors reach the control device, because of leakage from both the tank truck and collection system. The collection efficiency should be assumed to be 90 percent for tanker trucks required to pass an annual leak test. Otherwise, 70 percent should be assumed.

AP-42, p. 5.2-6 (footnotes omitted).

The Permit does not require an annual leak test for tank trucks and rail cars shipping denatured ethanol from the facility. Thus, the overall capture and flare control efficiency should be no greater than 70%. The flare itself may be able to reduce 90% of the VOCs that reach it, but 100% of the VOC emissions from loading losses will not reach the flare. Using a 70% control efficiency coupled with a 30% higher emission factor, per above, increases controlled VOC emissions from truck and train loading to 65.39 ton/yr.[14] These revised VOC emissions plus those from other sources equal 150.64 ton/yr,[15] which exceeds the major source threshold of 100 ton/yr. Thus, the facility is a major source for VOCs. Note that this also increases HAP emissions as the potential to emit HAPs is keyed to the HAP fraction of the estimated VOCs.

Response to Comment 7:

The trucks receiving ethanol from POET Biorefining - North Manchester are managed and owned by different companies. These trucks are conservatively assumed to have carried gasoline prior to filling with denatured ethanol; therefore, pursuant to 326 IAC 8-4-9, the trucks dispensing gasoline and being loaded with denatured ethanol are required to have an annual pressure decay or leak test. Additionally, the enclosed flare is required to operate when the loading rack is in operation; as such, there is a requirement in the permit that does not allow for the use of vapor balancing services during ethanol loading. Furthermore, according to manufacturing specifications, the enclosed flare is expected to achieve 100% capture efficiency.

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[13] U.S. EPA Emissions Factor Uncertainty Assessment, February 2007

[14] Truck loading VOCs: (4.86 lb/kgal)(1.3)(69,000 kgal/yr)(1-0.7)/2000 lb/ton = 65.39 ton/yr.

[15] Based on the potential to emit in TSD Appx. A, p.20: total PTE - TSD loading + revised loading = 88.6-3.35 + 65.39 = 150.64 ton/yr.

IDEM, OAQ agrees with the commenter that the ethanol loading rack as calculated in TSD Ap. A, p. 11 is the correct value and it should be included in the summary sheet instead of the incorrect value of 2.48 tons per year. This would bring VOC emissions from the entire source to 89.47 tons per year instead of 88.6 tons per year. The controlled potential to emit for the loading rack is calculated to be 3.35 tons per year. IDEM, OAQ agrees with the commenter that limiting VOC emissions from the flare should be based on this limit instead of the uncontrolled VOC emission from loading ethanol before entering the flare.

The following permit condition has been revised as follows:

D.5.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for the ethanol loading racks:

...

(h) The VOC emissions from enclosed flare CE015 shall not exceed ~~4.86 lbs/kgal~~ **0.765 lbs/hr**.

No change will be made to the original TSD. The OAQ prefers that the TSD reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Comment 8:

I.B.3 Equipment Leaks

The Draft Permit and TSD also incorrectly calculate VOCs from equipment leaks. The TSD calculates VOC emissions from equipment leaks using emission factors from an EPA report based on leak rates in chemical plants, not including ethanol plants. TSD Appx. A, p. 16. The permit limits VOC emissions from these components using the New Source Performance Standards leak detection and repair provisions in 40 CFR § 60, Subpart VV. Compliance with 40 CFR § 60, Subpart VV relies in part on measuring VOC leaks by EPA Method 21, using a portable hydrocarbon detection instrument. The most commonly used instruments, a flame ionization detector ("FID") or a photoionization detector ("PID"), significantly underestimate the types of oxygenated organics that are present in VOC emissions from ethanol plants.[16] Thus the Permit does not effectively limit VOC emissions from equipment leaks to the levels assumed in the potential to emit calculations.

Response to Comment 8:

IDEM, OAQ disagrees with the commenter that the VOCs from equipment leaks were calculated incorrectly. EPA has established a Leak, Detection and Repair program (LDAR) pursuant to 40 CFR 60, Subpart VV to control VOC emissions and IDEM, OAQ believes the rule provides a reasonable approach to estimate VOC emissions from leaks.

No changes have been made to the permit as the result of this comment.

Comment 9:

I.B.4 Regenerative Thermal Oxidizer

The facility uses a Regenerative Thermal Oxidizer ("RTO") to control VOCs, HAPs, CO, and TSP from the dryers and the scrubber. The RTO is a combustion device that burns these gases together with 30

[16] U.S. Environmental Protection Agency, Response Factors of VOC Calibrated with Methane for Selected Organic Chemicals, Report PB81-13619, January 1981.

MMBtu/hr of natural gas to reduce 98% of the VOCs and 90% of CO, PM, and HAPs. The VOC and HAP potential to emit calculations for the RTO in the TSD contain numerous errors. The response to comments should include revised potential to emit calculations for the RTO that address the issues discussed below. This comment discusses the errors in the VOC calculations. The same errors occur in the HAP emission calculations, which are discussed in Comment I.C.

First, the TSD indicates that VOC emissions from the RTO are calculated from the sum of VOC emissions from the scrubber, dryers, combustion of natural gas in the dryers, and combustion of natural gas in the RTO. TSD Appx. A, p. 5, Table 4, notes. This is correct, but the TSD failed to implement it.

The calculation summary in TSD Appendix A, page 5, Table 4 omits the scrubber potential to emit, reporting instead RTO emissions as 46.0 ton/yr, calculated as the sum of dryer combustion (2.8 ton/yr), dryer process emissions (42.5 ton/yr), and RTO combustion (0.7 ton/yr). The scrubber VOC emissions are reported elsewhere as 134.9 ton/yr (TSD Ap. A, p. 5, Table 3). The reference point for these scrubber VOC emissions, i.e., inlet or outlet of the RTO, is not disclosed. If reported at the RTO outlet, scrubber VOC emissions alone exceed the 100 ton/yr significance threshold. If reported at the RTO inlet, the contribution of the scrubber to VOC emissions at the outlet of the RTO would be 2.7 ton/yr (134.9 x 0.02 = 2.70), assuming the RTO removed 98% of the VOCs. Regardless, the facility-wide VOC emissions exclude the contribution of the scrubber to RTO emissions.

Second, further confounding the RTO VOC calculation, the TSD reports conflicting information on scrubber VOC emissions on pages 2 and 5. TSD Appx. A, p.2, Table 2, and p. 5, Table 4. Page 2 first reports "PTE before control" of 153.8 ton/yr, a control efficiency of 95% and "PTE after control" of 7.7 ton/yr. However, this same table also reports "Emission Rate after control" in lb/hr of 30.8 lb/hr, which is not consistent with 7.7 ton/yr (30.8 lb/yr x 8760 hr/yr/2000 lb/ton = 134.9 ton/yr). The 30.8 lb/hr figure, however, is consistent with the "Emission Rate from Scrubber" reported on page 5, Table 3, which is shown correctly as corresponding to 134.9 ton/yr.

The application indicates that the scrubber is vented to emergency stack SV008 during periods of startup, shutdown, and malfunction of the RTO. Application, p. 3-10, Process Flow Diagram 4, and PTE Calculations, p. 19 of 35. It further clarifies that the uncontrolled 153.8 ton/yr figure and the controlled 7.7 ton/yr figure on page 2 of TSD Appendix A are scrubber emissions from the "emergency stack" during 500 hours of RTO shutdown, when the scrubber is vented directly to the atmosphere rather than to the RTO. The Draft Permit lists emergency stack SV008 (p. 2, Sec.(g)), but is silent as to this mode of operation and contains no limits on VOC or HAP emissions from any emergency stack, an apparent omission based on the Application.

Given this emergency mode of operation, scrubber VOC emissions should have been calculated as 500 hrs of emergency operation at 30.8 lb/hr and 8,260 hrs of normal operation assuming the scrubber vents to the RTO and VOC emissions are controlled at 98% or 0.62 lb/hr (30.8 x 0.02=0.62). This amounts to 7.7 ton/yr of VOCs during emergency venting (as reported in Ap. and the TSD Appx. A, p. 2) and 2.56 ton/yr during normal operation (0.62 x 8260/2000 = 2.56) for a total of 10.3 ton/yr of VOC at the RTO stack. This single change increases the VOC potential to emit for the facility from 88.6 ton/yr to 98.9 ton/yr, perilously close to 100 ton/yr major source threshold. When this increase is combined with other increases in VOC emissions, as discussed in Comments 1.B.1, 1.B.2, and 1.B.3 above, the North Manchester facility substantially exceeds this threshold.

Response to Comment 9:

The RTO has been designed to achieve a minimum of 98% reduction in VOC and 97% reduction in HAP emissions. For the purpose of calculating potential emissions a reduction of 90% in HAP emissions was used. An emission factor of 615.2 lb/hr as well as the control efficiency from the scrubber are based on performance tests at similar POET facilities. Based on this emission factor and the yearly operating limit of 500 hours for the emergency stack, the TSD, Ap. A, page 2, shows uncontrolled emissions of 153.8 tons per year. TSD, Ap. A, p. 5, shows an emission factor of 30.80 lb/hr, which is also based on stack tests at similar POET facilities. This emission factor was used to calculate the emission rate from a scrubber operating 8760 hours. The emission rate from the scrubber is 134.9 tons per year as indicated in TSD, Ap. A, p. 5. These emissions are then vented to the RTO, hence it is unnecessary to double count emissions. Furthermore, the Permittee is required to test the RTO system stack to confirm

compliance with the VOC emission limit in the permit. Compliance with these limits will ensure that the source remains a minor source of VOCs.

The RTO must occasionally be temporarily shut down for unscheduled maintenance or other operational reasons. In this event, the DDGS dryers will be shut down; however, the fermentation tanks and the distillation systems will continue to be operated in normal mode. The emissions from these sources will be vented to an emergency stack after VOC emissions are controlled by the wet scrubber at 98% efficiency; which satisfies the requirements of 326 IAC 8-5-6 and ensures emissions are limited to below 100 tons per year.

IDEM, OAQ does not feel that it is necessary to limit the emissions from startup, shutdown, and malfunction. The duration of startup and shutdown are expected to be minimal. Furthermore, emission calculations for the RTO are based on continuous operation (8760 hours per year); therefore, the calculations do not account for times of shutdown (when the RTO and dryers are not operating) and may overestimate the actual annual emissions. Nevertheless, the sourcewide emissions are still calculated to below major source thresholds even with these conservative assumptions. Condition D.2.5 in the permit requires POET Biorefining - North Manchester to comply with 326 IAC 8-5-6.

IDEM, OAQ agrees with the commenter that when the scrubber (CE008) is vented directly to the atmosphere through the emergency stack (SV008), the emergency stack VOC and Acetaldehyde emissions should be limited. Testing and recordkeeping requirements are also revised in the permit as follows:

D.2.4 FESOP Limits [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable**:**

(1) The Permittee shall comply with the following emission limits for the RTO system (CE009), which is used to control the emissions from the fermentation and distillation processes, and the DDGS dryers (EU025 and EU026):

(a) PM/PM10 emissions shall not exceed 6.90 lbs/hr.

(b) VOC emissions shall not exceed 10.5 lbs/hr.

(c) CO emissions shall not exceed 10.5 lbs/hr.

(d) NOx emissions shall not exceed 11.0 lbs/hr.

(e) SO2 emissions shall not exceed 10.8 lbs/hr.

(f) Acetaldehyde emissions shall not exceed 0.54 lbs/hr.

(g) Total HAP emissions shall not exceed 0.98 lbs/hr.

(2) The Permittee shall comply with the following requirements for the fermentation and distillation scrubber (CE008):

(a) The scrubber (CE008) shall not vent to the atmosphere more than 500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.

(b) VOC emissions shall not exceed 30.8 lbs/hr.

(c) Acetaldehyde emissions shall not exceed 2.9 lbs/hr.

Combined with the PM/PM10, VOC, SO_2, CO, and NOx emissions from other units, the PM/PM10, SO_2, VOC, CO, NOx emissions from the entire source are each limited to less than 100 tons/yr. Combined with the HAP emissions from other units, the HAP emissions from the entire source are

limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.

D.2.5 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6, the Permittee shall control the VOC emissions from the fermentation and distillation processes and the DDGS dryers (EU025 and EU026) using the following controls:

(a) The VOC emissions from the fermentation and distillation process shall be controlled by **scrubber CE008 when venting to the emergency stack, or by the combination of** scrubber CE008 followed by a thermal oxidizer CE009.

(b) The overall efficiency for the scrubber CE008 and thermal oxidizer CE009 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The overall efficiency for the scrubber CE008 (including the capture efficiency and the destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(d)~~(c)~~ The VOC emissions from the DDGS dryers (EU025 and EU026) shall be controlled by thermal oxidizer CE009.

(e)~~(d)~~ The overall efficiency for the thermal oxidizer CE009 controlling the DDGS dryers (EU025 and EU026) (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

D.2.9 VOC and HAP Control

In order to comply with Conditions D.2.4 and D.2.5~~,~~**:**

(a) The scrubber CE008 shall be in operation, and control emissions from the fermentation and distillation processes at all times that the fermentation and distillation processes are in operation.

(b) ~~t~~Thermal oxidizer CE009 shall be in operation and control emissions from the DDGS dryers (EU025 and EU026) at all times that the dryers are in operation and the scrubber CE008 and thermal oxidizer CE009 shall be in operation, and control emissions from the fermentation and distillation processes at all times that these units are in operation.

D.2.10 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 8-5-6]

In order to demonstrate compliance with Conditions D.2.4, D.2.5, and D.2.7~~,~~**:**

(a) ~~t~~The Permittee shall perform PM, PM10, VOC (including emission rate, and destruction efficiency), NOx, SO2, CO, and Acetaldehyde testing for the RTO system stack (SV009) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM10 includes filterable and condensible PM10. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

(b) The Permittee shall perform VOC and Acetaldehyde (including emission rate, and destruction efficiency) testing for the scrubber (CE008) within 60 days after achieving maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

D.2.16 Record Keeping Requirements

(a) **To document compliance with Condition D.2.4(b)(1), the Permittee shall maintain monthly records of the amount of hours the scrubber (CE008) is vented to the atmosphere.**

(b)~~(a)~~ To document compliance with Condition D.2.11, the Permittee shall maintain a daily record of visible emission notations of the stack SV009. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(c)~~(b)~~ To document compliance with Condition D.2.12, the Permittee shall maintain continuous temperature records for the thermal oxidizer and the three (3) hour average temperature used to demonstrate compliance during the most recent compliant stack test.

(d)~~(c)~~ To document compliance with Condition D.2.13, the Permittee shall maintain a daily record of the duct pressure or fan amperage for the RTO system (CE009). The Permittee shall include in its daily record when the duct pressure or fan amperage is not taken and the reason for the lack of the reading (e.g., the process did not operate that day).

(e)~~(d)~~ To document compliance with Condition D.2.14, the Permittee shall maintain a daily record of pressure drop and flow rate for scrubber CE008. The Permittee shall include in its daily record when pressure drop and flow rate are not taken and the reason for the lack of the readings (e.g., the process did not operate that day).

(f)~~(e)~~ All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

No change will be made to the original TSD. The OAQ prefers that the TSD reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Comment 10:

1.C The Facility is a Major Source for Acetaldehyde

The Permit states that it limits the source's potential to emit to less than 10 ton/yr for any individual HAP and less than 25 ton/yr for any combination of HAPs. Thus, the source is not major for hazardous air pollutants ("HAP"). 326 IAC 2-7-1, Sec. 1(22)(A)(i)(AA). However, stack tests and other information set out below indicate that that the potential to emit acetaldehyde exceeds 10 ton/yr, thus rendering North Manchester a major source with respect to HAPs and requiring Maximum Achievable Control Technology ("MACT") for HAPs and a Title V operating permit.

Acetaldehyde, a carcinogen, is produced during fermentation, distillation, and DDGS drying. Thus, it is also present in fugitive emissions from tanks. Valves, connectors, and pumps that process the byproducts of these processing steps. The process emissions from these three processing steps are controlled using a regenerative thermal oxidizer ("RTO"). The emissions from fermentation and distillation are first routed through a scrubber and then the RTO. The emissions from drying are routed directly to the RTO. Acetaldehyde is also produced by the combustion of fuels, including in the dryers, boilers, flare, and RTO, but the TSD ignored all combustion sources of acetaldehyde. Finally, we note that ethanol vapors are photochemically oxidized to aldehydes, including acetaldehyde in the atmosphere.

The Application and the Appendix to the TSD used engineering estimates based on unidentified stack tests to estimate HAP emissions from the facility. See, for example, TSD Appx. A, pp. 2, 4, 7. These estimates suggest the facility would emit only 12.9 ton/yr of total HAPs (TSD Appx A, p. 20), of which 7.38 ton/yr is acetaldehyde (2.37 + 4.91). The acetaldehyde emissions admitted in the TSD include: 2.37 ton/yr from the RTO stack (TSD Appx. A, p. 5), which controls emissions from the dryers and

fermentation/distillation scrubber; 4.91 ton/yr from the DDGS Cooler (TSD Appx. A, p.7); and 0.00075 ton/yr from fugitive sources such as valves and pumps (TSD Appx. A, p. 17). Stack tests from other POET facilities indicate that these emissions are underestimated.

I.C.1 Regenerative Thermal Oxidizer (RTO)

The Regenerative Thermal Oxidizer (RTO) would combust vapors from the fermentation/distillation scrubber and the dryers. The acetaldehyde emissions from the RTO contain the same errors previously discussed in Comment I.B.4 for VOC emissions from the RTO. These emissions were reportedly calculated as the sum of emissions from the scrubber, plus process emissions from the dryers, plus combustion emissions from burning fuel in the dryers, plus combustion emissions from burning fuel in the RTO. TSD Appx. A, p. 5, notes. However, the actual calculations exclude most of these sources and are not transparent due to errors, omissions, and failure to disclose sources.

First, the RTO stack PTE table, which summarized the RTO emissions calculations (Appx A, p. 5, Table 4), omits Dryer Combustion PTE, Scrubber PTE, and RTO Combustion PTE (all are shown as blank). This table reports 2.37 ton/yr as the total RTO stack PTE. This value is elsewhere reported as the dryer contribution alone. TSD Appx. A, p. 4, Table 1.2. Thus, RTO emissions are underestimated because the contributions from the scrubber and fuel combustion are excluded.

Second, the scrubber acetaldehyde emissions reported on page 2 (TSD Appx. A, p. 2, Table 2) are inconsistent with the scrubber acetaldehyde emissions reported on page 5, creating confusion. TSD Appx. A, p. 5, Table 3. Page 2 reports "PTE before Control" of 1.4 ton/yr, a control efficiency of 50% and "PTE after control" of 0.7 ton/yr. However, this same table also reports also reports "Emission Rate after Control" in lb/hr of 2.9 lb/hr, which is not consistent with the adjacent 0.7 ton/yr (2.9 lb/hr x 8760 hr/yr/2000 lb/ton = 12.7 ton/yr, not 0.7 ton/yr). The 2.9 lb/hr (12.7 ton/yr) figure, however, is consistent with the "Emission Rate from Scrubber" reported on page 5, Table 3, which is shown correctly as corresponding to 12.7 ton/yr. This confusion can only be sorted out by consulting the Application.

The application clarifies that the uncontrolled 1.4 ton/yr figure and the controlled 0.7 ton/yr figure on page 2 of TSD Appendix A are scrubber emissions from the "emergency stack" during 500 hours of RTO shutdown, when the scrubber is vented directly to atmosphere rather than to the RTO. Ap., PTE Calculations, March 2007, p. 19 of 35. The Draft Permit is silent as to this mode of operation and contains no limits on VOC or HAP emissions from any emergency stack. Further, these emissions are excluded from the potential to emit calculations. Given this emergency mode of operation, scrubber acetaldehyde emissions should have been calculated as the sum of 500 hours of emergency operation and 8,260 hors of normal operation. The TSD did not include any scrubber acetaldehyde emissions in the PTE calculations, let alone emergency venting.

Third, it is not clear whether the various components of the RTO emissions reported in the various tables in TSD Appendix A - scrubber, dryer, combustion - are controlled relative to the RTO stack or relative to the device itself. For example, it is not clear whether the dryer emissions in the TSD, Appx. A, page 4, Table 1.2 are at the stack (i.e., include a 90% RTO control efficiency) or are at the inlet to the RTO.

Fourth, acetaldehyde emissions are based on undisclosed stack tests at "similar" sources. These "similar" sources are not identified and excerpts of the stack tests relied upon are not included in either the Application or the TSD. Thus, meaningful public review is not possible. The response to comments should disclose these "similar" tests and provide copies of appropriate excerpts that support claimed emissions and set out any adjustments to test values.

I.C.1.a Fermentation/Distillation Scrubber

The TSD appears to assume that the fermentation/distillation scrubber would only emit 2.9 lb/hr or 12.7 ton/yr of acetaldehyde, based on tests at "similar" facilities. TSD Appx. A, pp. 2, 5.[17] (These emissions were not included in the RTO emissions and hence are excluded from the acetaldehyde PTE.) The "similar" facilities were not identified. However, ten separate stack tests on similar POET facilities indicate

[17] As discussed supra, there is an error on TSD Appx. A page 2, which reports controlled scrubber acetaldehyde emissions of 0.7 ton/yr on page 5. These are emergency venting emissions. This and other errors on page 2 of Appendix A should be corrected.

that acetaldehyde emissions from POET scrubbers are highly variable, ranging from 0.01 lb/hr at the Great Plains facility to 8.2 lb/hr at the Hanlontown facility, adjusted to 60 MGY of undenatured ethanol.

Acetaldehyde Emissions Based on Stack Tests at Other POET Ethanol Production Facilities:

Plant	Test Date	Capacity (MGY)	Concentration (ppm)	Emission Rate (lb/hr)	Adjusted Emission Rate (lb/hr)
James, Groton, SD	Sep-05	50	10.56	0.57	0.68
Great Plains, Chancellor, SD	Oct-05	50	0.18	0.009	0.01
Voyager, Emmetsburg, IA	Jun-05	50	26.67	1.5	1.8
Sioux, Hudsun, SD	Nov-04	55	12.31	0.5	0.55
Northstar, Lake Crystal, MN	Jul-05	50	45.98	3	3.60
Iowa, Hanlotown, IA	June-04	55	150.21	7.5	8.18
Frontier, Gowrie, IA	Sep-06	60	44.36	3.42	3.42
Otter Creek, Ashton, IA	Aug/Oct -04	55	55.82	2.39	2.61
Horizon, Jewell, IA	Nov-06	60	29.57	1.47	1.47
Horizon, Jewell, IA	Jul-06	60	61.39	2	2

Adjusted emission rate = stack test emission rate x (60 MGY/capacity)

The scrubber emission rate used for North Manchester (2.9 lb/hr) is roughly equal to the average of these ten POET stack tests adjusted to 60 MGY of undenatured ethanol (2.43 lb/hr). An average should not be used to calculate the potential to emit to qualify as a FESOP because a FESOP limit must be the maximum emissions, and met day in and day out under all operating conditions.

The June 2004 stack test at the 55 million gallon per year ("MGY") Iowa Ethanol facility in Hanlontown, IA indicates that the potential to emit acetaldehyde from the scrubber, besides being excluded, is substantially underestimated. This stack test indicates that the fermentation bypass stack[18] emitted 7.5 lb/hr of acetaldehyde during the test.[19] This amounts to 8.18 lb/hr, when adjusted to the 60 MGY ethanol capacity of North Manchester.[20] Thus, the TSD underestimated the potential to emit acetaldehyde from the scrubber by nearly a factor of three based on this test (8.18/2.9 = 2.82).

As explained above, the EPA has estimated the uncertainty in emission factors calculated from means and applied to specific facilities, especially for purposes of rule compliance, such as here (2.9 lb/hr). The EPA concluded that "data for HAP emission factors exhibit the highest degree of variability and result in the largest emissions factor uncertainty ratios." EPA 2/07, p. ES-2. This study determined that uncertainty ratios for HAPs for the 95th percentile when 10 samples are available, as here, range from 2.8 to 6.0. EPA 2/07, Table 2-3, p. 2-8. In other words, for purposes of calculating potential to emit, an emission rate of 6.27 lb/hr (2.24 x 2.8) to 13.44 lb/hr (2.24 x 6.0) lb/hr is warranted, consistent with using the upper bound from Hanlontown.

The acetaldehyde emissions from this scrubber are controlled by the RTO. The Application assumes that the RTO would remove 90% of the acetaldehyde. Ap., PTE Calculations, March 2007, p. 15 of 35. The scrubber acetaldehyde emissions, using this revised emission rate, are the sum of emissions from 500 hrs of emergency operation at 8.18 lb/hr and 8,260 hrs of normal operation at 0.82 lb/hr (8.18 x 0.1). This amounts to 2.05 ton/yr during emergency venting (8.18 x 500/2000 = 2.05) and 3.39 ton/yr during normal operation (0.82 x 8260/2000 = 3.39). The total acetaldehyde emissions from the scrubber are 5.44 ton/yr. The TSD did not include any scrubber acetaldehyde emissions in the potential to emit calculations for the

[18] This stream is the outlet of the fermentation scrubber and would otherwise be routed to the RTO. Thus, it represents an underestimate of the fermentation/distillation scrubber as distillation vapors are not included.
[19] Broin & Associates, Performance Stack Test Report for Iowa Ethanol, LLC, August 6, 2006, Test Number 6, Fermentation Bypass Stack.
[20] Acetaldehyde emissions from fermentation/distillation scrubber: (60 MGY/55 MGY)(7.5 lb/hr) = 8.18 lb/hr.

facility. TSD Appx. A, pp. 5, 20. This single change increases acetaldehyde facility-wide potential to emit from 7.28 ton/yr to 12.72 ton/yr, which exceeds the major source thresholds of 10 ton/yr.

The record contains no evidence that a 90% control efficiency for acetaldehyde could be maintained day in and day out, under all operating conditions at this facility. The Permit only requires one stack test every five years. Permit, Condition D.2.10, p. 35. A stack test is conducted under optimized conditions to assure the limit is met, while routine operation is rarely at optimized condition. Thus, there is no evidence that this degree of control has ever been or will be obtained on a continuous basis, which is required to qualify as a FESOP.

I.C.1.b Dryers

The TSD reports that the dryers will emit 2.37 ton/yr of acetaldehyde at the RTO stack but fails to support this estimate. TSD Appx. A, p. 4, Table 1.2. The POET stack tests produced in the Premier case do not include any tests for controlled or uncontrolled DDGS dryer process emissions. However, the Premier TSD assumed RTO dryer emissions would be 5.0 ton/yr. It is unclear why identical plants would have dryer acetaldehyde emissions that differ by a factor of two. The response to comments should provide an explanation or use the higher of the two estimates.

I.C.1.c Combustion Emissions

Acetaldehyde is a byproduct of combustion. The facility will burn 436.055 MMBtu/hr of natural gas in two 60 MMBtu/hr dryers, one 30 MMBtu/hr RTO, two 143 MMBtu/hr boilers, and a flare with a 0.055 MMBtu/hr pilot. The TSD did not include acetaldehyde emissions from these sources.

The California Air Resources Board's ("CARB's") CATEF emission factor database reports an emission factor of 1.47×10^{-2} lb/MMBtu for acetaldehyde emissions from natural gas fired boilers.[21] Applying this factor to all natural gas combustion, acetaldehyde emissions would be 0.03 ton/yr.[22] The combustion of fuel oil in the emergency diesel generator would produce additional acetaldehyde. However, the record does not contain sufficient information to estimate these emissions. Thus, combustion emissions are expressed as >0.03 ton/yr. This revised value, along with other acetaldehyde emissions summarized below in Section I.C.2, exceeds 10 ton/yr.

I.C.2 Total Acetaldehyde Emissions

The potential to emit acetaldehyde is the sum of emissions from the DGS Cooer, the RTO, fugitive sources, and combustion sources. The above sections revised the RTO emissions, based on stack tests produced by POET in response the Premier case. The revised values are highlighted in bold in the above text and summarized as follows:

Acetaldehyde Potential to Emit (ton/yr)

Source	TSD Appx. A	Revised
DDGS Cooler	4.91	4.91
RTO Scrubber	0	5.44
RTO Dryers	2.37	5.0
RTO & Dryer Combustion	0	>0.03
Total	7.28	15.38

This revised summary indicates that acetaldehyde emissions are greater that 15.38 ton/yr. Thus, the potential to emit acetaldehyde as proposed to be permitted exceeds 10 ton/yr, classifying North Manchester as a major source for HAPs. This revised estimate is likely an underestimate because it is based on one-time snapshot tests conducted under optimized, ideal conditions. The emissions from the RTO would only be tested once every five years and other sources would not be tested at all. There is no guarantee that the facility would be run under the optimized conditions that occur during formal stack

[21] http://www.arb.ca.gov/app/emsinv/catef_list.php

[22] Natural gas combustion acetaldehyde emissions: (436.055 MMBtu/hr)(8760)(1.47×10^{-2} lb/MMSCF)/ [(1000 SCF/Btu)(2000 lb/ton)] = 0.028 ton/yr.

testing day in and day out. Thus, we believe that HAP emissions are likely much higher that we have estimated above.

I.D Toxic Release Inventory

Section 313 of the 1986 Emergency Planning and Community Right-to-Know Act (EPCRA) requires facilities to complete a Toxic Release Inventory ("TRI") Form annually for specified chemicals. This TRI data is posted on the U.S. EPA's website.[23] Acetaldehyde is one of the chemicals that must be reported. We downloaded TRI data for HAP releases to air from POET ethanol production facilities. These data are summarized in Exhibit 1.

Exhibit 1 shows that in 2005, James Valley Ethanol in Groton, SD, a 50 MGY POET ethanol facility, reported releases to air of 17,491 pounds of acetaldehyde. In 2004, this facility reported releases to air of 18,500 pounds. Converting these values to ton/yr and adjusting to a 60 MGY basis, the corresponding acetaldehyde emissions from North Manchester would be 10.0 to 11.1 ton/yr.[24] Exhibit 1 also shows in 2004, the 55 MGY Otter Creek facility released 18,282 pounds of acetaldehyde. The corresponding emissions from North Manchester would be 10 ton/yr.[25] These values, self-reported by other POET ethanol facilities, are consistent with the estimate developed above from POET stack tests. Thus the proposed North Manchester facility, as currently permitted, is a major source for HAPs.

Response to Comment 10:

The Acetaldehyde emission rate for the DDGS Cooler, RTO and Scrubber are based upon results from the July 18-19, 24-26, 2006 air emission compliance testing at POET Biorefining - Jewell, formerly Horizon Ethanol Facility, in Jewell, Iowa. The design of both POET Biorefining - Jewell and POET Biorefining - North Manchester is POET's "Centerline 60" facility. The results are all outlet concentrations, therefore individual scrubber and fuel combustion factors are not included in the calculations. Furthermore, the Permittee is required to test the RTO system stack to confirm compliance with the Acetaldehyde emission limit in the permit. Compliance with these limits will ensure that the source remains a minor source of HAPs.

HAP emissions from the natural gas combustion for the boilers and DDGS dryers are based on the five highest organic and metal HAPs emission factors identified in AP-42. HAP emissions from remaining HAPs is expected to be minimal.

Therefore, the potential emissions from the DDGS Cooler, RTO and Scrubber remain unchanged, and POET Biorefining - North Manchester is limited to below major source thresholds for Acetaldehyde and all other HAPs.

No changes have been made to the permit as the result of this comment.

Comment 11:

II. The Draft Permit does not contain all required emission limits and compliance provisions to qualify as a FESOP

North Manchester is attempting to avoid the requirements of the Title V operating permit, PSD, and NESHAP programs by obtaining a Federal Enforceable State Operating Permit (FESOP). Therefore, the permit must meet certain minimum requirements to qualify as a FESOP. These include: (1) emission limits and standards that assure that it is not a major source and that "assure compliance with all applicable requirements" (326 IAC 2-8-4); (2) "testing, monitoring, reporting and record keeping

[23] http://www.epa.gov/tri/tridata/index.htm

[24] Premier acetaldehyde emissions, based on James Valley Ethanol emissions reported in the 2005 TRI database: (17,491 lb/yr)(60 MGY/50 MGY)/2000 lb/ton = 10.49 ton/yr. James Valley for 2004: (18,500 lb/yr)(60 MGY/50 MGY)/2000 lb/ton = 11.10 ton/yr.

[25] Otter Creek: (18,282 lb/hr)(60 MGY/55MGY)/2000 lb/ton = 9.97 ton/yr.

requirements sufficient to assure compliance with the terms and conditions of the FESOP;" (326 IAC 2-8-5); and (3) be federally enforceable by the U.S. EPA and citizens under the CAA (326 IAC 2-8-6). A limit is federally enforceable if it is contained in a permit that is federally enforceable and if it is enforceable as a practical matter. See U.S. v. Louisiana-Pacific Corp., 682 F. Supp. 1122, (D.C. Colo. 1988). FESOP limits must thus be practically enforceable. Practical enforceability means the source must be able to show continuous compliance with each limitation or requirements.[26] The U.S. EPA has repeatedly concluded that "in accordance with the 1989 potential to emit policy, when an emission limit is taken to restrict potential to emit {as in this Permit}, some type of continuous monitoring of compliance with that emission limits required."[27] In addition, the U.S. EPA has concluded that "i]n order for emission limitations to be federally enforceable from the practical stand point, they must be short term and specific so as to enable the Agency to determine compliance at any time.[28] As explained below, many emission units have no emission limits at all. AP-42 calculations in the TSD cannot substitute for emission limits in a permit.

IDEM's regulations also require that the FESOP include "[m]onitoring and related record keeping and reporting requirements which assure that all reasonable information is provided to evaluate continuous compliance with the applicable requirements." 326 IAC 2-8-4(3) (emphasis added). The proposed monitoring is not adequate to assure continuous compliance. As explained below, the Draft Permit has failed to specify continuous direct monitoring where feasible; it has failed to require sufficient direct periodic monitoring where feasible; and it has failed to specify indirect monitoring where feasible. The Draft Permit should be revised to strengthen all monitoring provisions.

Response to Comment 11:

An emission source which qualifies as a major source under Part 70 rules, and hence needs a Title V permit, may voluntarily accept federally enforceable limits on air pollutant emissions to obtain a FESOP rather than the Title V permit. The federally enforceable limits in a FESOP are derived from sourcewide emissions calculations that account for the maximum potential emissions from each emission unit at the source. Certain operations have minimal PTE; therefore, it is sometimes unnecessary to limit and/or require monitoring for these operations. However, any emissions from an unlimited emission unit are still counted in their entirety towards the sourcewide emission when determining the permitting level. Therefore, IDEM, OAQ believes it is unnecessary to limit all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. When a PTE is limited, the Permittee is subject to record keeping and reporting requirements in order to demonstrate compliance with those limits. Collectively, the limited PTE of certain activities along with the unlimited PTE of the remaining activities located at the source must be below major source thresholds to be considered a FESOP.

No changes have been made to the permit as the result of this comment.

Comment 12:

II.A The Draft Permit Lacks Emission Limits for Certain Sources to Limit the Potential to Emit to Below Major Source Thresholds

A FESOP permit must contain:

Emission limitations and standards, including those operational requirements and limitations that limit the source's capacity to emit any air pollutants such that it does not fall within any of the categories listed in 326 IAC 2-7-2(a) and that assure compliance with all applicable requirements

[26] Memorandum from Terrell F. Hunt, Associate Enforcement Counsel, OECA, and John Seitz, Director, OAQPS, to EPA Regional Offices, Re: Guidance on Limiting Potential to Emit in New Source Permitting, June 13, 1989.

[27] Memorandum John B. Rasnic, Director Stationary Source Compliance Division, to David Kee, Director Air and Radiation Division, Re: Policy Determination on Limiting Potential to Emit for Koch Refining Company's Clean Fuels Project, March 13, 1992.

[28] Memorandum from John S. Seitz to Air Management Division directors, Re: Clarification of New Source Review Policy on Averaging Times for Production Limitations, April 8, 1987.

at the time of FESOP issuance.

316 IAC 2-8-4(1)

The Draft Permit is a FESOP. To meet the requirements of a FESOP, the Draft Permit must limit emissions below major source thresholds. The Draft Permit states that it limits the source's potential to emit to less than the major source levels, including less than 100 ton/yr for PM10, NOx, CO, SO2, and VOC; less than 10 ton/yr for any individual HAP; and less than 25 ton/yr for any combination of HAPs. However, the Draft Permit falls short of this goal for the reasons set below.

II.A.1 Roads

Haul roads within the facility are a source of PM and PM10 emissions. TSD Ap. A, p. 13, 20. The Draft Permit does not limit emissions from these roads. Thus, the Draft Permit does not limit the potential to emit PM and PM10 from haul roads. The Draft Permit should be modified to contain enforceable emission limits for the haul roads, based on the correct potential to emit as discussed in Comment I.A.1.

Response to Comment 12:

An emission source which qualifies as a major source under Part 70 rules, and hence needs a Title V permit, may voluntarily accept federally enforceable limits on air pollutant emissions to obtain a FESOP rather than the Title V permit. The federally enforceable limits in a FESOP are derived from sourcewide emissions calculations that account for the maximum potential emissions from each emission unit at the source. Certain operations have minimal PTE; therefore, it is sometimes unnecessary to limit and/or require monitoring for these operations. See response to comment 2 for further details.
No changes have been made to the permit as the result of this comment.

Comment 13:

II.A.2 DDGS Cooler

The potential to emit calculations assume that the DDGS cooler will emit 4.91 ton/yr of acetaldehyde, representing 67% of the acetaldehyde emissions and the major source of these emissions from the facility (TSD Appx. A, p. 7). The Draft Permit does not contain any emission limit for acetaldehyde emissions from the DDGS Cooler nor require any testing for them. Draft Permit, p. 41-42. Thus, there is no assurance that acetaldehyde emissions will remain below the 10 ton/yr significance threshold. The Permit should be modified to contain enforceable emissions limits on acetaldehyde.

Response to Comment 13:

IDEM, OAQ agrees with the commenter that an emission limit and testing for acetaldehyde is warranted due to the potential to emit estimate for this hazardous air pollutant in order to ensure that the facility is minor under 40 CFR Part 63 and 326 IAC 2-4.1.

The facility is required to submit to IDEM, for approval, all analytical methods proposed for applicable emission testing, according to the test protocol requirement included within Permit Condition C.9(a). Results of the emission testing according to the methods proposed and approved within the test protocol will be compared to the major source thresholds for both the individual HAP threshold of 10 tons per year and the combined HAPs threshold of 25 tons per year.

The following permit conditions have been revised:

D.4.5 VOC Emissions [326 IAC 2-2] [326 IAC 2-8-4] **[326 IAC 2-4.1]**

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

(a) VOC emissions from EU029, exhausting to stack SV010 shall not exceed 5.0 lbs/hr.

(b) Acetaldehyde emissions from EU029, exhausting to stack SV010 shall not exceed 1.12 lbs/hr.

Combined with the VOC emissions from other emission units, the VOC emissions from the entire source are limited to less than 100 tons/yr. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable. **Combined with Acetaldehyde emissions from other units, emissions from the entire source are limited to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program), 326 IAC 2-2 (PSD), and 326 IAC 2-4.1 (MACT) are not applicable.**

D.4.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.4.4, D.4.5 and D.4.6, the Permittee shall perform PM, PM10, **Acetaldehyde** and VOC testing for the DDGS cooler (EU029) within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 includes filterable and condensible PM10.

Comment 14:

II.A.3 Cooling Tower

The potential to emit calculations assumed the cooling tower at the facility will emit 7.13 ton/yr of PM and PM10 (TSD Ap. A, p. 20). The Permit does not contain any emission limits or require any testing for these emissions. Thus, there is no assurance PM/PM10 emissions will remain below the levels assumed in the potential to emit calculations. The Draft permit should be modified to contain enforceable emissions limits for the cooling tower.

Response to Comment 14:

An emission source which qualifies as a major source under Part 70 rules, may voluntarily accept federally enforceable limits on air pollutant emissions to obtain a FESOP rather than the Title V permit. The federally enforceable limits in a FESOP are derived from sourcewide emissions calculations that account for the maximum potential emissions from each emission unit at the source. Certain operations have minimal PTE; therefore, it is sometimes unnecessary to limit these operations. However, any emissions from an unlimited emission unit are still counted in their entirety towards the sourcewide emissions when determining the permitting level. Therefore, IDEM, OAQ believes it is unnecessary to limit all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. When a PTE is limited, the Permittee is subject to record keeping and reporting requirements in order to demonstrate compliance with those limits. Collectively, the limited PTE of certain activities along with the unlimited PTE of the remaining activities located at the source must be below major thresholds to be considered a FESOP.

No changes have been made to the permit as the result of this comment.

Comment 15:

II.A.4 Boilers

The potential to emit calculations assumed the boilers at the facility will emit 2.33 ton/yr of PM and 9.33 ton/yr of PM10 (TSD Appx. A, p. 20). The Draft Permit does not contain any emission limits or require any testing for these emissions (Draft Permit, Sec. D.3). Thus, there is no assurance PM/PM10 emissions will remain below the levels assumed in the potential to emit calculations. The Draft permit should be modified to contain enforceable emissions limits for the PM/PM10 emissions from the boilers, based on the correct potential to emit, as discussed in Comment I.A.4.

Response to Comment 15:

Emissions from the boilers are estimated using AP-42 emission factors and are uncontrolled. Emissions from the boilers are counted in their entirety towards the sourcewide emissions when determining the permitting level. Therefore, IDEM, OAQ believes it is unnecessary to limit all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. Furthermore, emission calculations for the boilers are based on continuous operation (8,760 hours per year); therefore, the calculations do not account for periods when the boilers are not operating, and may overestimate the actual annual emissions. Nevertheless, the sourcewide emissions are still calculated to be below FESOP thresholds even with these conservative assumptions.

No changes were made to the permit as a result of this comment.

Comment 16:

II.A.5 Diesel Generator

The potential to emit calculations assumed the diesel generator at the facility will emit 0.23 ton/yr of PM, 0.23 ton/yr PM10, 2.77 ton/yr of NOx, and 0.05 ton/yr of VOC (TSD Appx. A, p. 20). The Draft Permit does not contain any emission limits or require any testing for these emissions. Draft Permit, Sec. D.6. Thus, there is no assurance that these emissions will remain below the levels assumed in the potential to emit calculations. The Draft permit should be modified to contain enforceable emissions limits for all these pollutants.

Response to Comment 16:

Emissions from the diesel generator are estimated using AP-42 emission factors that are well below the emissions limitations set forth in 40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines). However, IDEM, OAQ does not feel emission limits are needed for the diesel generator given that it is only permitted to run 100 hours per year.

No changes were made as a result of this comment.

Comment 17:

II.A.6 Process Fugitive Emissions

The potential to emit calculations assume that process fugitive emissions from the facility will be 0.18 lb/ton of PM (12.3 ton/yr) and 0.059 lb/ton of PM10 (4.03 ton/yr) during unloading of grain (TSD Ap. A, p. 1). The potential to emit calculations also assume the facility will emit 0.086 lb/ton of PM (4.33 ton/yr) and 0.029 lb/ton of PM10 (1.46 ton/yr) of PM10 during loading of DDGS (TSD Ap. A, p. 8). The Draft Permit does not contain any restriction on fugitive emissions from these operations at all. The Draft Permit must contain enforceable emission limits based on the correct potential to emit.

Response to Comment 17:

An emission source which qualifies as a major source under Part 70 rules, may voluntarily accept federally enforceable limits on air pollutant emissions to obtain a FESOP rather than the Title V permit. The federally enforceable limits in a FESOP are derived from sourcewide emissions calculations that account for the maximum potential emissions from each emission unit at the source. Certain operations have minimal PTE; therefore, it is sometimes unnecessary to limit these operations. However, any emissions from an unlimited emission unit are still counted in their entirety towards the sourcewide emissions when determining the permitting level. Therefore, IDEM, OAQ believes it is unnecessary to limit all emission units where sourcewide emissions are already below major source thresholds due to limitations imposed on other emission units at the source. When a PTE is limited, the Permittee is subject to record keeping and reporting requirements in order to demonstrate compliance with those limits. Collectively, the limited PTE of certain activities along with the unlimited PTE of the remaining activities located at the source must be below major thresholds to be considered a FESOP.

No changes were made to the permit as the result of this comment.

Comment 18:

II.A.7Startup, Shutdown and malfunction

The rules for FESOPs require that:

> Emission limitations applicable to startup, shutdown, and emergency bypasses shall be addressed on a case-by-case basis in the permit. Such limitations shall be designed so as to minimize the frequency of such events and to minimize the excess emissions caused by these events, to the extent feasible, taking into consideration available technologies, safety, cost, and other relevant factors.

326 IAC 2-8-4(1)(D).

The Draft Permit does not address startups, shutdowns, and malfunctions. The TSD does not disclose any analysis or design to minimize the frequency of such events and to minimize such excess emissions.

Further, the potential to emit calculations do not appear to have included startup and shutdown emissions, which by themselves could be high enough to exceed the major source threshold. See calculations for emergency bypass stack SV008 for acetaldehyde in Comment I.C.a.

The North Manchester facility contains equipment that will produce more of certain pollutants when startup, shutdown, and being maintained, than when operating at steady state. This is critical here because CO (98.9 ton/yr), NOx (96.0 ton/yr), PM (96.4 ton/yr), and VOC emissions (88.6 ton/yr) are close to the major source threshold of 100 ton/yr. Emissions of these pollutants are higher during these periods for at least four reasons.

First, the combustion equipment, including the DDGS dryers, the emergency generators, thermal oxidizers, and natural gas boilers, will generate more NOx, CO, and VOC emissions during strartup and shutdown because combustion is incomplete. Complete combustion is not achieved until the equipment reaches steady state operation. The potential to emit calculations assume steady state, full load operation 100% of the time.

Second, equipment is bypassed during emergency conditions. As discussed in Comment I.C.1.a, the scrubber is vented directly to atmosphere during startup, shutdown and malfunction of the RTO. The Permit also includes bypasses for the silos and centrifuges.

Third, the RTO requires on-stream maintenance. The media in the RTO accumulates condensed organic and particulate material, which must be periodically baked out, much like a self-cleaning oven. This releases pulses of VOCs, PM, and PM10. These releases were not included in the potential to emit and would not be detected by the proposed compliance monitoring, which is not continuous.

Fourth, some of this equipment operates intermittently and may frequently operate at low loads that generate more VOCs and CO emissions that at other times. The flow direction in an RTO, for example, is periodically reversed through the chambers to optimize thermal efficiency. When this occurs, a puff of untreated air is emitted.[29] The boilers frequently operate at low loads, generating higher emissions than at the full load operation assumed in the potential to emit calculations. The TSD for other ethanol plants have included these low load emissions.

The Draft Permit fails to place any limits on the increased emissions that may result during periods of startup, shutdown, maintenance and malfunction and does not appear to consider those excess emissions in calculating the potential to emit. Without limits on increased emissions during startup, shutdown, and malfunction, the North Manchester facility may emit pollutants in an amount over the major source threshold.

[29] See for example, MEGTEC Systems, The Clean Air Compliance Handbook, August 2003.

Thus, the permit should be revised to address the startup, shutdown, maintenance, and malfunction emissions. Without such revision, it is likely that emissions will exceed both the individual unit Permit limits and major source thresholds. These exceedances would not be discovered because no monitoring is required during these events.

Response to Comment 18:

IDEM, OAQ does not feel that it is necessary to limit emissions from startup, shutdown, and malfunction. The combustion equipment is much smaller than a typical large utility boiler, and the duration of startup and shutdown are expected to be minimal. Furthermore, emission calculations for the emission units are based on continuous operation (8,760 hours per year); therefore, the calculations do not account for periods when the emission units are not operating, and may overestimate the actual annual emissions. Nevertheless, the sourcewide emissions are still calculated to be below FESOP thresholds even with these conservative assumptions.

No changes were made as a result of this comment.

Comment 19:

II.A.8 Ethanol Loading Rack

The facility will use one flare to combust vapors from loading ethanol into trucks and railcars. Combustion of ethanol vapors in the flares will generate VOC, NOx, CO, PM and PM10 emissions. The Draft Permit restricts NOx, CO, and VOC emissions but fails to limit HAPs, PM or PM10 emissions. Draft Permit, pp. 43-46. The pollutants PM and PM10 are combustion byproducts. The magnitude of these emissions depends upon the design of the flares. The PTE calculations did not include PM and PM10 emissions from the flares. See TSD, Appx. A, p. 20. These emissions should be calculated, included in the potential to emit evaluation, and limited in the permit to the level relied upon in the PTE calculations.

Response to Comment 19:

IDEM, OAQ has determined that it is appropriate to require the flares to have smokeless designs if the applicant indicates there are no particulate emissions from the flares as these types of flares will emit negligible PM/PM10 emissions. Condition D.5.4(g) requires the flare to be designed as a smokeless flare. HAP emissions are negligible due to the negligible HAP presence in the gas stream.

No changes were made as a result of this comment.

Comment 20:

II.B Testing and Monitoring is not Adequate to assure continuous compliance

> A FESOP must contain:
>
> Monitoring and related record keeping and reporting requirements which assure that all reasonable information is provided to evaluate continuous compliance with the applicable requirements.

326 IAC 2-8-4(3) (emphasis added).

As explained below, the monitoring required in the Draft Permit is not adequate to assure continuous compliance.

Permit limits can only be enforced through appropriate monitoring, testing and reporting of emissions. An appropriate hierarchy for specifying monitoring to determine compliance is: (1) continuous direct measurement where feasible; (2) initial and periodic direct measurement where continuous monitoring is not feasible; (3) use of indirect monitoring, e.g. surrogate monitoring, where direct monitoring is not feasible; and (4) equipment and work practice standards where direct and indirect monitoring are not

feasible. New Source Review Workshop Manual, p I.3. The Draft Permit in some instances does not require any testing to demonstrate that the emission limits will be complied with when the source is operating.

II.B.1 Testing, Monitoring and Reporting for Missing Emission Limits

Section II.A above details various missing emission limits. For each of these missing emission limits, the Permit must include testing, monitoring and reporting to assure continuous compliance.

II.B.2 The Permit Should Require NOx and CO CEMS For The RTO Stack And NOx And CO CEMS For The Boilers Stacks

As mentioned above, an appropriate hierarchy for specifying monitoring to determine compliance begins with continuous direct measurement, where feasible, as the first option. NSR Manual, p. I.3. A continuous direct measurement, in the form of a continuous emissions monitoring system ("CEM") is necessary for at least NOx and CO emissions from the RTO and the two natural gas fired boiler stacks. (A parametric emission monitoring system ("PEMS") may be used on the boiler to satisfy NSPS, but is less accurate than a CEMS.) The CO potential to emit is only 1.1 ton/yr shy and the NOx potential to emit is only 4 ton/yr shy of the 100 ton/yr major source threshold. This is too close for the skimpy monitoring specified in the Draft Permit.

There can be no doubt that a CEMS for NOx and CO is possible for the RTO and boiler stacks. The CEMS would cost no more that $100,000. In a plant costing nearly $100 million, the cost of the CEMS is not a relevant factor for its exclusion. A CEMS is also important because, as explained above, combustion sources can have highly variable emissions during different levels of operation. Only a CEMS will accurately reflect these actual emissions on a continuous basis, as required to qualify for a FESOP.

Further, it is very likely that the source will be installing a CEMS (or PEMS) on the natural gas boilers to comply with NSPS Subpart Db. Therefore, it is irrational to not require the use of CEMS (or PEMS) to demonstrate compliance with the FESOP permit limits.

Response to Comment 20:

The thermal oxidizer is subject to several monitoring requirements, including continuous temperature monitoring, visible emissions notations, and duct pressure or fan amperage monitoring. In addition, there are stack testing requirements in the permit for both boilers (NOx, and CO) and the thermal oxidizer (PM, PM10, VOC, NOx, CO, SO2, and acetaldehyde). IDEM, OAQ believes these testing and monitoring requirements are sufficient to ensure continuous compliance with all permit terms and conditions.

The proposed boilers are subject to the Standard of Performance for Industrial-Commercial-Institutional Steam Generating Units Requirements (40 CFR Part 60, Subpart Db), which allows facilities to use either a PEMS or CEMS to monitor NOx emissions from these units. Section E.2 of the permit under 60.48b(1) requires POET Biorefining - North Manchester to install, calibrate , maintain, and operate a continuous monitoring system to monitor NOx emissions from the boilers.

No changes were made to the permit as a result of this comment.

Comment 21:

II.B.3 Stack Testing

The method of demonstrating compliance with the source-specific emission limits is by an initial stack test, repeated once every 5 years or longer, and sometimes various parametric testing through indicator operating parameters (e.g., baghouse pressure drop, scrubber pressure drop and flow rate, thermal oxidizer temperature). The Draft Permit does not require the demonstration of any relationship between the various parametric indicators and the relevant emission limits, nor does it state that a violation of the indicator constitutes a per se violation of the pollutant of interest. This missing, or minimal and infrequent testing does not satisfy the obligation for testing sufficient to "evaluate continuous compliance" nor does it

allow IDEM, U.S. EPA or the public to ensure compliance with the Permit limits.

For some parameters, stack testing is missing. In addition to the missing monitoring discussed in II.B.1, the Draft Permit is missing a requirement for the total HAPs testing. Condition D.2.4 contains an emission limit for total HAPs as well as for one particular HAP, acetaldehyde. However, Condition D.2.10 only requires testing for acetaldehyde. This condition must also require testing for total HAPs. The fact that there is parametric monitoring and a requirement to operate the scrubber and RTO does nothing to ensure compliance with the total HAPs emission limit in Condition D.2.4 because there is no way to know if the plant will violate the total HAPs emission limit in Condition D.2.4, even when the controls are operating within acceptable ranges.

In addition, Condition D.1.9 should require PM/PM10 testing for baghouses - all baghouses, not just one of baghouses CE001 through CE007, and one of either CE011 or CE012.

More frequent stack tests are also necessary, especially if the comments regarding CEMS are rejected. Annual or more frequent testing is feasible, is commonly required for similar facilities, and should be required here. For example, the Draft Permit currently requires stack testing on some of the natural gas-fired boilers and baghouses once every 5 years after initial testing. Using a stack test every 5 years to demonstrate continuous compliance is clearly arbitrary. Thus, the Draft Permit should be modified to require yearly direct emission testing.

Response to Comment 21:

IDEM, OAQ requires testing for the major emission points located at the source. IDEM believes that testing every five (5) years is sufficient for this source considering the stability of the operation and control devices. There are other types of operations that are not associated with an ethanol production plant that do require more frequent testing such as municipal waste combustors, sulfuric acid plants, and secondary lead smelters. However for the types of operations this source is proposing to construct, five (5) year testing along with frequent monitoring of the control equipment (to ensure the controls are operating correctly) is sufficient. As the two boilers are identical, IDEM believes that testing on any one of the two once every five (5) years is sufficient to estimate compliance with the emission limits for each boiler. IDEM also has the authority to require additional testing at any time if monitoring or other information indicates that a change may have occurred in the operation of the process and/or control device.

As stated in the permit, a parameter reading that is outside the determined range is not a deviation from the permit, Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances would be considered a deviation from the permit. The parameter reading does not indicate a violation; however, monitoring the parameter ensures that equipment is operating normally.

The source has provided emissions estimates consistent with other ethanol plants that show Acetaldehyde as the major HAP emitted, and IDEM, OAQ believes that Acetaldehyde is the HAP that is emitted at the highest rate at dry-mill ethanol plants. Additionally, IDEM, OAQ believes that the current required HAP testing for this source is adequate because the vast majority of Acetaldehyde is emitted from the fermentation and distillation processes, and the dryer and the cooling systems, all of which require stack testing. IDEM, OAQ acknowledges that certain operations will emit other types of HAPs; yet, it is unnecessary to limit these operations because HAP emissions from an unlimited emission unit are counted in their entirety towards the sourcewide emissions when determining the permitting level.

Comment [e1]: The permit does not require testing for the DDGS Cooler.

No changes were made to the permit as a result of this comment.

Comment 22:

III. BACT IS Still Required By The Indiana SIP

The TSD claims that:

The fermentation process, distillation process, DDGS dryers, and ethanol loadout operation located at this source are subject to the requirements of 326 IAC 8-5-6. Therefore, these operations are not subject to the requirements of 326 IAC 8-1-6 (BACT).

TSD at 15. This statement is incorrect. This statement may be correct under Indiana regulations, however, the Clean Air Act requires that sources comply with the Indiana SIP. See e.g. United States v. General Motors, 496 U.S. 530, 540 (1990); 42 U.S.C. §§ 7413(b)(2); 7604(a). 326 IAC 8-5-6 is not a part of the Indiana SIP. 326 IAC 8-1-6 remains the applicable requirement until US EPA issues its final approval, if it ever does, of a SIP revision containing 326 IAC 8-5-6. See General Motors, 496 U.S. at 540-541. Therefore, 326 IAC 8-1-6 applies to the fermentation process, distillation process, and DDGS dryers. Failure to comply with this is a violation of the Indiana SIP.

Moreover, IDEM cannot just claim that the emission limits in 326 IAC 8-5-6 represent BACT because BACT is a case-by-case analysis that is technology-forcing, and thus advances with time. Moreover, BACT must be supported by a reasoned analysis. The Draft Permit does not require BACT for the fermentation and distillation processes and the DDGS dryers, which are controlled by the scrubber and RTO. In response to comments on POET's Premier facility, IDEM increased the overall VOC control efficiency of this equipment from 98% to 99% to satisfy BACT. Addendum to Premier TSD, Response to Comment 1, pp. 4-5. The same BACT determination would apply to this facility.

In addition to evidence we have presented in other similar cases, three permits have been issued in California requiring 99% plus VOC control from similar scrubber-RTO combinations, and two of these have been successfully stack tested (Pacific Madera and Phoenix Bioenergy). Further, recent conversations with major RTO vendors indicate they will guarantee an RTO with a VOC destruction efficiency in excess of 99%.[30] Thus, the Draft Permit fails to require BACT for these processes.

Response to Comment 22:

The application of 326 IAC 8-5-6 to the fermentation process, distillation process, DDGS dryers, and ethanol loadout operation at the source complies both with Indiana law and the Clean Air Act by way of the Indiana SIP. The SIP-approved applicability section 326 IAC 8-1-1 refers to the entirety of Article 8 and states that, "this rule (Rule 1) contains general provisions applicable to all other rules in this article" SIP-approved 326 IAC 8-1-6 applies to new facilities located anywhere in Indiana having potential VOC emissions of 25 tons per year and "are not otherwise regulated by this article". There is nothing in the SIP approved portions of Article 8 that suggest that "otherwise regulated by other provisions of this article" means that the provision must be SIP-approved.

The origin of Article 8 stemmed from a desire by EPA and the state to reduce VOC levels statewide at a lower regulatory threshold than major new source review permitted. Categories of sources were to have specifically developed limits and standards and the "general reduction requirements" of 326 IAC 8-1-6 were only to apply for those sources in a category that had not yet had their own specifically tailored regulations.

No changes were made to the permit as a result of this comment.

[30] Durr (www.durr.com); Gulf Coast Environmental (www.gcesystems.com); AHL Geoenergy (www.lundbergassociates.com); MEGTEC (www.megtec.com); Dedert Corp., the U.S. distributor of the Swiss Combi dryer system (www.dedert.com).

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a New Source Review and a Federally Enforceable State Operating Permit (FESOP)

Source Background and Description

Source Name:	POET Biorefining - North Manchester
Source Location:	868 East 800 North, North Manchester, Indiana 46962
County:	Wabash
SIC Code:	2869
Operation Permit No.:	F169-24515-00068
Permit Reviewer:	Jamal Naas

The Office of Air Quality (OAQ) has reviewed a FESOP renewal application from POET Biorefining - North Manchester relating to the construction and operation of an ethanol production plant.

History

POET Biorefining - North Manchester submitted an application on March 28, 2007, to IDEM, OAQ applying for a Federally Enforceable State Operating Permit to construct and operate a new ethanol production plant at North Manchester, Indiana 46962. This is the first permit approval for this source.

Permitted Emission Units and Pollution Control Equipment

There are no permitted emission units at the POET Biorefining - North Manchester plant during this review process.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

New Emission Units and Pollution Control Equipment

The application includes information relating to the prior approval for the construction and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

(a) One (1) grain receiving and handling operation, approved for construction in 2007, controlled by baghouse CE001, exhausting through stack SV001, and consisting of the following:

(1) Two (2) truck dump pits, identified as EU001, approved for construction in 2007, with a maximum throughput rate of 840 tons of corn per hour.

(2) Two (2) grain legs and conveying system, identified as EU002, approved for construction in 2007, with a maximum throughput rate of 840 tons per hour.

(3) Six (6) grain bins, identified as EU003, approved for construction in 2007, with a maximum throughput rate of 840 tons per hour. Total storage capacity will be three million bushels.

(b) One (1) corn scalper, identified as EU004, approved for construction in 2007, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouse CE002, and exhausting through stack SV002.

(c) One (1) surge bin, identified as EU005, approved for construction in 2007, with a maximum throughput rate of 140 tons of corn per hour, controlled by baghouse CE002, and exhausting through stack SV002.

(d) Five (5) hammermills, identified as EU006, EU007, EU008, EU009, and EU010, approved for construction in 2007, each with a maximum throughput rate of 20 tons of corn per hour, controlled by baghouses CE003, CE004, CE005, CE006, and CE007, respectively, and exhausting through stacks SV003, SV004, SV005, SV006, and SV007, respectively.

(e) One (1) fermentation process, approved for construction in 2007, with a maximum throughput rate of 55,400 gallons per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through SV009. This process consists of the following:

(1) One (1) slurry tank, identified as EU011, approved for construction in 2007.

(2) Five (5) fermenters, identified as EU012 through EU016, approved for construction in 2007.

(3) One (1) yeast propagation tank, identified as EU017, approved for construction in 2007.

(4) One (1) beer well, identified as EU018, approved for construction in 2007.

(f) One (1) regenerative thermal oxidizer, identified as CE009, approved for construction in 2007, with a maximum heat input capacity of 30 MMBtu/hr, using natural gas as fuel, with emissions exhausted through stack SV009.

(g) One (1) distillation process, approved for construction in 2007, with a maximum throughput rate of 54,000 gallons of ethanol per hour, controlled by scrubber CE008 and thermal oxidizer CE009, with emissions exhausted through stack SV008 or SV009, respectively. This process consists of the following:

(1) One (1) beer stripper, identified as EU019, approved for construction in 2007.

(2) One (1) rectifier column, identified as EU020, approved for construction in 2007.

(3) One (1) side stripper, identified as EU021, approved for construction in 2007.

(4) One (1) set of three (3) molecular sieves, identified as EU022, approved for construction in 2007.

(5) One (1) set of four (4) evaporators, identified as EU023, approved for construction in 2007.

(h) One (1) set of four (4) centrifuges, identified as EU024, approved for construction in 2007, controlled by thermal oxidizer CE009 during normal operation, with emissions exhausted through stack SV009. During wetcake production, emissions from EU024 are exhausted through bypass stack SV017.

(i) Two (2) natural gas fired DDGS dryers, identified as EU025 and EU026, approved for construction in 2007, each with a maximum heat input rate of 60 MMBtu/hr, with a total maximum throughput rate of 23 tons of DDGS per hour, controlled by multiclones CE013 and CE014, respectively, with emissions venting to thermal oxidizer CE009, and exhausting to stack SV009.

(j) Two (2) natural gas fired boilers, identified as EU027 and EU028, approved for construction in 2007, each with a maximum heat input rate of 143 MMBtu/hr each, with emissions exhausting to stacks SV013 and SV014, respectively.

(k) One (1) fluidized DDGS cooler, identified as EU029, approved for construction in 2007, with a maximum throughput rate of 26 tons/hr of DDGS, controlled by baghouse CE010, and exhausting to stack SV010.

(l) One (1) DDGS handling and storage operation, approved for construction in 2007, with a maximum throughput rate of 220 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS storage silo, identified as EU030, approved for construction in 2007, controlled by baghouse CE011, with emissions exhausted to stack SV011.

(2) One (1) DDGS silo bypass, identified as EU031, approved for construction in 2007, controlled by baghouse CE012, with emissions exhausted to stack SV012.

(3) One (1) DDGS storage building, identified as EU032, approved for construction in 2007, controlled by baghouse CE016, with emissions exhausted to stack SV018.

(m) One (1) DDGS loadout operation, approved for construction in 2007, with a maximum throughput rate of 220 tons/hr of DDGS, and consisting of the following:

(1) One (1) DDGS conveyor, identified as EU033, approved for construction in 2007, controlled by baghouse CE016, with emissions exhausted to stack SV018.

(2) One (1) DDGS truck loadout spout, identified as EU034, approved for construction in 2007.

(3) One (1) DDGS rail loadout spout, identified as EU035, approved for construction in 2007, controlled by baghouse CE016, with emissions exhausted to stack SV018.

(n) One (1) ethanol loading system, identified as EU036, consisting of one (1) rack for trucks and two (2) racks for railcars, approved for construction in 2007, with a maximum throughput rate of 39,000 gallons per hour when loading trucks, and 144,000 gallons per hour when loading railcars. This unit is controlled by enclosed flare CE015, which is fueled by natural gas and has a pilot gas flare heat input capacity of 54,000 Btu/hr, and exhausts through stack SV016.

(o) One (1) diesel generator, identified as EU037, approved for construction in 2007, with a maximum power output rate of 2,640 HP, and exhausting to stack SV015.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

(a) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(b) Forced and induced draft cooling tower system not regulated under a NESHAP.

(c) Replacement or repair of bags in baghouses and filters in other air filtration equipment.

(d) Paved roads and parking lots with public access. [326 IAC 6-4]

(e) Underground conveyors, including underground grain and product transfer conveyors.

(f) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

(g) Other emission units, not regulated by a NESHAP, with PM10, NOx, and SO_2 emissions less than five (5) pounds per hour or twenty-five (25) pounds per day, CO emissions less than twenty-five (25) pounds per day, VOC emissions less than three (3) pounds per hour or fifteen (15) pounds per day, lead emissions less than six-tenths (0.6) tons per year or three and twenty-nine hundredths (3.29) pounds per day, and emitting greater than one (1) pound per day but less than five (5) pounds per day or one (1) ton per year of a single HAP, or emitting greater than one (1) pound per day but less than twelve and five tenths (12.5) pounds per day or two and five tenths (2.5) ton per year of any combination of HAPs:

(1) One (1) off spec tank for 190-proof ethanol, identified as T001, approved for construction in 2007, with a maximum capacity of 250,000 gallons. [40 CFR 60, Subpart Kb]

(2) One (1) tank for 200-proof ethanol, identified as T002, approved for construction in 2007, with a maximum capacity of 250,000 gallons of 200-proof ethanol. [40 CFR 60, Subpart Kb]

(3) One (1) denatured ethanol tank, identified as T003, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(4) One (1) denatured ethanol tank, identified as T004, approved for construction in 2007, with a maximum capacity of 2,000,000 gallons of denatured ethanol. [40 CFR 60, Subpart Kb]

(5) One (1) denaturant tank, identified as T005, approved for construction in 2007, with a maximum capacity of 126,900 gallons of natural gasoline. [326 IAC 8-9] [40 CFR 60, Subpart Kb]

(6) One (1) diesel storage tank, identified as T006, approved for construction in 2007, with a maximum storage capacity less than 2,000 gallons of diesel fuel.

(7) One (1) thin stillage tank, identified as T007, approved for construction in 2007, with a maximum storage capacity of 500,000 gallons of thin stillage.

(8) One (1) syrup tank, identified as T008, approved for construction in 2007, with a maximum storage capacity of 61,000 gallons of syrup.

Existing Approvals

No air approvals have been issued to this source.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the FESOP be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete FESOP application for the purposes of this review was received on March 28, 2007.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 20). The PTE for the storage tanks is 2.02 tons per year (tons/yr) of VOC, which was calculated using EPA TANKS 4.0 software.

Potential to Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, inclulding air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential to Emit (tons/yr)
PM	Greater than 100
PM-10	Greater than 100
SO_2	Less than 100
VOC	Greater than 100
CO	Greater than 100
NO_x	Greater than 100

HAPs	Potential to Emit (tons/yr)
Acetaldehyde	>10
Acrolein	<10
Formaldehyde	>10
Methanol	<10
Propionaldehyde	<10
n-hexane	>10
Other HAPs	Negligible
Total HAPs	greater than 25

The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10, VOC, CO, and NOx are equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is greater than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its HAP emissions below the Title V levels.

(b) Fugitive Emissions
Since this type of operation is in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD applicability.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

	Potential To Emit (tons/year)						
Process/Emission Unit	PM	PM10	SO_2	NOx	VOC	CO	HAPs
Grain Receiving and Handling	14.8	14.8	-	-	-	-	-
Grain Receiving - Fugitive	12.3	4.03	-	-	-	-	-
RTO Stack	30.2	30.2	47.69	48.2	46.0	45.9	4.32
DDGS Cooler	3.57	3.57	-	-	21.9	-	5.91
DDGS Handling and Loadout	1.20	1.20	-	-	-	-	-
DDGS Loadout - Fugitive	4.33	1.46	-	-	-	-	-
Boilers	2.33	9.33	0.74	43.8	6.75	50.1	2.36
Ethanol Loadout and Flare	-	-	-	1.15	2.48	2.88	0.19
Paved Roads (Fugitive)	19.1	3.73	-	-	-	-	-
Cooling Tower (Insignificant)	7.13	7.13	-	-	-	-	-
Diesel Fire Pump (Insignificant)	0.23	0.23	0.53	2.77	0.05	0.06	Negligible
Storage Tanks* (Insignificant)	-	-	-	-	2.02	-	Negligible
Equipment Leaks (Insignificant)	-	-	-	-	7.45	-	0.08
Wet Cake Storage**	-	-	-	See Note	-	-	See Note
Other Insignificant Activities	1.00	1.00	-	1.00	1.0	-	-
Total Emissions	96.4	76.7	49.0	96.0	88.6	98.9	12.9

Note: "-" pollutant not emitted by the facility.

* Emissions from the storage tanks were calculated by the Permittee using EPA TANKS software (version 4.09d) and have been verified.

** This plant is capable of producing both DDGS and WDGS. The emissions from DDGS production is the worst case scenario. Therefore, the PTE of wet cake storage is not included in the PTE for the entire source.

County Attainment Status

The source is located in Wabash County.

Pollutant	Status
PM-10	Attainment
PM-2.5	Attainment
SO_2	Attainment
NO_2	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

(a) Wabash County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.

(b) Volatile organic compounds (VOC) and Nitrogen Oxides are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Wabash County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Wabash County has been classified as attainment or unclassifiable in Indiana for all remaining pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

Source Status

New Source PSD Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	96.4
PM10	76.7
SO_2	49.0
NO_x	96.0
VOC	88.6
CO	98.9
Single HAP	Less than 10
Combination HAPs	Less than 25

This new source is not a PSD major stationary source because no attainment regulated pollutant is emitted at a rate of one hundred (100) tons per year or greater, and it is in one of the twenty-eight (28) listed source categories.

Federal Rule Applicability

(a) This source does have a grain elevator with a permanent storage capacity greater than 2.5 million bushels. Therefore, the requirements of the New Source Performance

Standards for Grain Elevators (326 IAC 12, 40 CFR 60.300-304, Subpart DD) are included in this permit.

(b) The two 143 MMBtu/hr boilers (EU027 and EU028) are used to produce steam and each of them has a maximum heat input capacity greater than 100 MMBtu/hr and will be constructed after June 19, 1984. Therefore, they are both subject to the New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12, 40 CFR 60.40b-49b, Subpart Db).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed natural gas-fired boilers (EU027 and EU028) are subject to the following portions of 40 CFR 60, Subpart Db.

1. 40 CFR 60.40b
2. 40 CFR 60.41b
3. 40 CFR 60.44b(a), (h) and (i)
4. 40 CFR 60.46b(a)
5. 40 CFR 60.46b(c)
6. 40 CFR 60.46b(e)(1)
7. 40 CFR 60.48b(b)
8. 40 CFR 60.48b(b)(1)
9. 40 CFR 60.48b(c)
10. 40 CFR 60.48b(d)
11. 40 CFR 60.48b(e)(2)
12. 40 CFR 60.48b(f)
13. 40 CFR 60.48b(g)(2)
14. 40 CFR 60.49(a)(1) and (3)
15. 40 CFR 60.49b(b)
16. 40 CFR 60.49b(c)
17. 40 CFR 60.49b(d)
18. 40 CFR 60.49b(g)(1-10)
19. 40 CFR 60.49b(v)
20. 40 CFR 60.49b(w)

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the gas-fired boilers (EU027 and EU028), except when otherwise specified in 40 CFR 60, Subpart Db.

(c) Tanks T001 through T005 have capacities greater than 75 cubic meters (19,813 gallons) and will be used to store volatile organic liquids. Therefore, these tanks are subject to the New Source Performance Standards for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after July 23, 1984 (326 IAC 12, 40 CFR 60.110b - 117b, Subpart Kb).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed storage tanks (T001 through T005) are subject to the following portions of 40 CFR 60, Subpart Kb.

1. 40 CFR 60.110b
2. 40 CFR 60.111b
3. 40 CFR 60.112b(a)(1)
4. 40 CFR 60.113b(a)
5. 40 CFR 60.115b(a)
6. 40 CFR 60.116b(a-e)

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the storage tanks T001 through T005, except when otherwise specified in 40 CFR 60, Subpart Kb.

(d) Ethanol is one of the chemicals listed in 40 CFR 60.489. Therefore, this ethanol production plant is subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (326 IAC 12, 40 CFR 60.480 - 489, Subpart VV). The Permittee has elected to comply with 40 CFR 60.480(e) - Alternative means for compliance using a 500 parts per million (ppm) leak definition, rather than as defined in 40 CFR 60, Subpart VV (10,000 ppm).

Nonapplicable portions of the NSPS will not be included in the permit. The proposed ethanol production plant is subject to the following portions of 40 CFR 60, Subpart VV.

1. 40 CFR 60.480
2. 40 CFR 60.481
3. 40 CFR 60.482-1
4. 40 CFR 60.482-2
5. 40 CFR 60.482-3
6. 40 CFR 60.482-4
7. 40 CFR 60.482-5
8. 40 CFR 60.482-6
9. 40 CFR 60.482-7
10. 40 CFR 60.482-8
11. 40 CFR 60.482-9
12. 40 CFR 60.482-10
13. 40 CFR 60.483-1
14. 40 CFR 60.483-2
15. 40 CFR 60.484
16. 40 CFR 60.485
17. 40 CFR 60.486
18. 40 CFR 60.487

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to this source, except when otherwise specified in 40 CFR 60, Subpart VV.

(e) Ethanol is one of the chemicals listed in 40 CFR 60.667. However, according to the EPA memorandum from Mr. George T. Czerniak dated December 6, 2002, the manufacture of ethanol using a fermentation process (biological synthesis) was excluded from the scope of NSPS, Subpart NNN. Therefore, the distillation unit at this new ethanol production plant is not subject to the requirements of New Source Performance Standards for Volatile Organic Liquid Storage Vessels VOC Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (326 IAC 12, 40 CFR 60.660 - 667, Subpart NNN).

(f) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 20, and 40 CFR Part 61 and 63) included in this permit.

(g) This source will limit HAP emissions from the entire source to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ) are not included in this permit.

(h) The requirements of 40 CFR Part 63, Subpart F (National Emission Standards for Organic Hazardous Air Pollutants From Synthetic Organic Chemical Manufacturing Industry), 40 CFR Part 63, Subpart G (National Emission Standards for Organic Hazardous Air Pollutants from Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater), and 40 CFR Part 63, Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks), are not included in this permit because (1) this source has accepted limits that make it a minor source of hazardous air pollutants; (2) the source does not manufacture as a primary product any of the chemicals listed in Table 1 of 40

CFR 63, Subpart F, Tetrahydro-benzaldehyde, or Crotonaldehyde; and (3) the source does not use as a reactant, manufacture as a product or co-product any of the chemicals listed in Table 2 of 40 CFR 63, Subpart F.

(i) The requirements of 40 CFR 63, Subpart I – National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks are not included in this permit. The source does not operate any of the processes specified in 40 CFR 63.190(b).

(j) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements for the NESHAP for Industrial Process Cooling Towers (40 CFR 63, Subpart Q) are not included in this permit.

(k) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Organic Liquids Distribution (non-gasoline) (40 CFR 63, Subpart EEEE) are not included in this permit.

(l) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Miscellaneous Organic Chemical Manufacturing (40 CFR 63, Subpart FFFF) are not included in this permit.

(m) This source has accepted limits that make it a minor source of hazardous air pollutants. Therefore, the requirements of the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD) are not included in this permit.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

The source will be approved for construction in 2007. The source is in one of the twenty-eight (28) source categories as defined in 326 IAC 2-2-1 and the potential to emit PM, PM10, VOC, CO, and NOx from the entire source before control is greater than one hundred (100) tons/yr.

In order to make the requirements of 326 IAC 2-2 (PSD) not applicable, the source shall comply with the following emission limitations:

(a) The PM emissions from the grain receiving, handling, and DDGS load-out operations shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Baghouse ID	PM Emission Limit (lbs/hr)
EU001, EU002, EU003	Grain Receiving, Conveyors, and Storage Bins	CE001	1.20
EU032, EU033, EU035	DDGS conveying, storage, and loadout	CE016	0.69
EU004, EU005	Corn Scalper, Surge Bin	CE002	0.09
EU006	Hammermill #1	CE003	0.41
EU007	Hammermill #2	CE004	0.41
EU008	Hammermill #3	CE005	0.41
EU009	Hammermill #4	CE006	0.41
EU010	Hammermill #5	CE007	0.41
EU029	DDGS Cooler	CE010	0.82
EU030	DDGS Silo Loading	CE011	0.14
EU031	DDGS Silo Bypass	CE012	0.14

This is equivalent to 22.47 tons/yr of PM. The source will use baghouses to ensure compliance with these limits. With baghouse control, the source is capable of complying with these limits.

(b) The PM emissions from the thermal oxidizer, which is used to control emissions from the fermentation and distillation operations and the dryers, shall not exceed 6.90 lbs/hr. This is equivalent to 30.2 tons/yr of PM emissions.

(c) The Permittee shall use periodic sweeping to control PM emissions from the unpaved roads. The sweeping shall be applied in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-2.

Combined with the PM emissions from the boilers, flare, grain receiving/loadout fugitives, unpaved roads, and other insignificant activities at this source, the PM emissions from the entire source are limited to less than one hundred (100) tons/yr.

The source also accepted limits on the throughput and on the emission rates of PM10, VOC, CO, and NOx, which limit emissions of all regulated pollutants from the entire source to less than one hundred (100) tons/yr (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-2 are not applicable.

326 IAC 2-4.1 (New Sources of Hazardous Air Pollutants)

The source also accepted FESOP limits on the HAP emissions from the entire source, which limits the emissions from the source to less ten (10) tons/yr for a single HAP and less than twenty-five (25) tons/yr for any combination of HAPs (see the discussion of 326 IAC 2-8-4 below). Therefore, the requirements of 326 IAC 2-4.1 are not applicable.

326 IAC 2-8-4 (FESOP)

The potential to emit PM10, VOC, CO, and NOx, before controls, for the entire source is greater than one hundred (100) tons/yr. In addition, the potential to emit HAPs before control from this source is greater than ten (10) tons/yr for a single HAP (Acetaldehyde) and greater than twenty-five (25) tons/yr for total HAPs. Pursuant to 326 IAC 2-8-4 (FESOP), the source shall comply with the following:

(a) The PM10 emissions from the grain receiving, handling, and DDGS handling and load-out operations shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Baghouse ID	PM10 Emission Limit (lbs/hr)
EU001, EU002, EU003	Grain Receiving, Conveyors, and Storage Bins	CE001	1.20
EU032, EU033, EU035	DDGS conveying, storage, and loadout	CE016	0.69
EU004, EU005	Corn Scalper, Surge Bin	CE002	0.09
EU006	Hammermill #1	CE003	0.41
EU007	Hammermill #2	CE004	0.41
EU008	Hammermill #3	CE005	0.41
EU009	Hammermill #4	CE006	0.41
EU010	Hammermill #5	CE007	0.41
EU029	DDGS Cooler	CE010	0.82
EU030	DDGS Silo Loading	CE011	0.14
EU031	DDGS Silo Bypass	CE012	0.14

This is equivalent to 22.47 tons/yr of PM10. The use of baghouses ensures compliance with the PM10 limits above.

(b) The total grain received by grain receiving EU001 shall not exceed 683,280 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(c) The total DDGS produced shall not exceed 201,480 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

(d) The Permittee shall use periodic sweeping to control PM and PM10 emissions from the paved roads. The sweeping shall be applied in a manner and at a frequency sufficient to ensure compliance with 326 IAC 2-8.

(e) The emissions from thermal oxidizer CE009, which is used to control emissions from the fermentation and distillation processes and the dryers, shall not exceed the following:

(1) PM10 emissions shall not exceed 6.90 lbs/hr. This is equivalent to 30.2 tons/yr of PM.

(2) VOC emissions shall not exceed 10.5 lbs/hr. This is equivalent to 46.1 tons/yr of VOC.

(3) CO emissions shall not exceed 10.5 lbs/hr. This is equivalent to 45.9 tons/yr of CO.

(4) NOx emissions shall not exceed 11.0 lbs/hr. This is equivalent to 48.2 tons/yr of NOx.

(4) SO2 emissions shall not exceed 10.9 lbs/hr. This is equivalent to 47.7 tons/yr of SO2.

(5) Total HAP emissions shall not exceed 1.88 lbs/hr. This is equivalent to 8.25 tons/yr. Acetaldehyde emissions shall not exceed 1.19 lbs/hr, which is equivalent to 5.21 tons/yr.

(f) The Permittee shall comply with the following requirements for the ethanol loading rack (EU036):

(1) The denatured ethanol load-out rate shall not exceed 69,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.

(2) The Permittee shall use flare CE015 to control the emissions from the loading rack when loading denatured ethanol to trucks or railcars.

(3) CO emissions from flare CE015 shall not exceed 0.084 lbs/kgal.

(4) NOx emissions from flare CE015 shall not exceed 0.0334 lbs/kgal.

(5) VOC emissions from flare CE015 shall not exceed 4.86 lbs/kgal.

(6) The ethanol loading rack (EU036) shall utilize submerged loading method when loading railcars.

(7) The railcars and trucks shall not use vapor balance services during ethanol loading.

(g) The VOC emissions from the DDGS cooler shall not exceed 7.3 lbs/hr.

Combined with the PM10, VOC, CO, NOx, and HAP emission units, the emissions from the entire source are limited to less than one hundred (100) tons/yr for PM10, VOC, CO and NOx, and less than ten (10) tons/yr for a single HAP and less than twenty-five (25) tons/yr total HAPs. Therefore, the requirements of 326 IAC 2-7 (Part 70 Program) and 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-6 (Emission Reporting)

This source is located in Wabash County, is not required to operate under a Part 70 permit, and emits less than 5 tons per year of lead. Therefore, the requirements of 326 IAC 2-6 are not applicable to this source.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity for sources shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Emissions Limitations)

The potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the paved roads at this source are less than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are not applicable.

State Rule Applicability – Boilers

326 IAC 6-2-4 (PM Emissions for Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-4(a), indirect heating facilities constructed after September 12, 1983, shall be limited by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where Pt = emission rate limit (lbs/MMBtu)
Q = total source heat input capacity (MMBtu/hr)

The total source heat input capacity is 143 x 2 = 286 MMBtu/hr. Therefore, the PM emission limit for the boilers is:

$$Pt = \frac{1.09}{286^{0.26}} = 0.250 \text{ lbs/MMBtu.}$$

According to AP-42, Table 1.4-2, the PM emission factor for natural-gas fired boilers is 7.6 lbs/MMCF x 1 MMCF/1,000 MMBtu = 0.0076 lbs/MMBtu. Therefore, this boiler can comply with the PM emission limit of 0.250 lbs/MMBtu.

State Rule Applicability - Grain Receiving and Handling Operations

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the pound per hour limit listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU001, EU002, EU003	Grain Receiving, Conveyors, and Storage Bins	840	75.4
EU004, EU005	Corn Scalper, Surge Bin	140	54.7
EU006	Hammermill #1	20	30.5
EU007	Hammermill #2	20	30.5
EU008	Hammermill #3	20	30.5
EU009	Hammermill #4	20	30.5
EU010	Hammermill #5	20	30.5

The pounds per hour limitations were calculated using one of the following equations:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

Interpolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

According to the emission calculations (see Appendix A), the potential to emit PM after control from these grain receiving, handling, and ship out operations is less than the emission limits above. Therefore, these operations can comply with 326 IAC 6-3-2. The use of the baghouses with these operations ensures compliance with these limits.

State Rule Applicability – Fermentation Process, Distillation Process, DDGS Drying and Cooling Process, and Ethanol Loading Rack

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, particulate emissions from each of the DDGS dryers (EU025 and EU026), the DDGS cooler (EU029), and the DDGS loadout operations (EU016 and EU017) shall not exceed the pound per hour limits listed in the table below:

Unit ID	Unit Description	Max. Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EU029	DDGS Cooler	26	36.4
EU030	DDGS Silo Loading	26	36.4
EU031	DDGS Silo Bypass	26	36.4
EU025	DDGS Dryer	26	36.4
EU026	DDGS Dryer	26	36.4
EU032	DDGS Storage Building	220	59.5
EU033	DDGS Conveyor	220	59.5
EU035	DDGS Rail Loadout Spout	220	59.5

The pounds per hour limitations were calculated using the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 55.0\ P^{0.11} - 40$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emission may exceed the emission limits shown in the table above, provided the concentration of particulate matter in the gas discharged to the atmosphere is less than 0.10 pounds per 1,000 pounds of gases.

The use of the thermal oxidizer system (CE009) and the DDGS storage and handling baghouses (CE001, CE011, and CE012) is necessary to ensure compliance with the emission limits above.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process, distillation process, DDGS dryers, and ethanol load-out operation located at this source are subject to the requirements in 326 IAC 8-5-6. Therefore, these operations are not subject to the requirements of 326 IAC 8-1-6 (BACT). The DDGS cooler (EU029) will be constructed after January 1, 1980 and has potential VOC emissions less than 25 tons per year. Therefore, the cooler is not subject to 326 IAC 8-1-6.

326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills)

The proposed ethanol production plant will be constructed after April 1, 2007, will use dry mill operations, and have combined potential VOC emissions from the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol load-out operation at this source are subject to the requirements in 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills) and shall comply with the following:

(a) Pursuant to 326 IAC 8-5-6(c), the Permittee has chosen to control the VOC emissions from the fermentation process with a wet scrubber, the distillation process and DDGS dryers by a thermal oxidizer, and the ethanol load-out operation by an enclosed flare. Therefore, the following conditions apply:

(1) The VOC emissions from the fermentation and the distillation processes shall be controlled by scrubber CE008 and thermal oxidizer CE009.

(2) The overall efficiency for the scrubber CE008 and thermal oxidizer CE009 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

(3) The VOC emissions from the DDGS dryers (EU025 through EU026) shall be controlled by thermal oxidizer CE009.

(4) The overall efficiency (including the capture efficiency and destruction efficiency) for the thermal oxidizer CE009, controlling the DDGS dryers shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

(5) The VOC emissions from the ethanol loading rack (EU036) shall be collected and controlled by enclosed flare CE015.

(6) The overall control efficiency for the vapor collection system and enclosed flare CE015 (including the capture efficiency and destruction efficiency) shall be at least 98%.

(b) Pursuant to 326 IAC 8-5-6(d), the Permittee shall determine initial compliance with the control efficiency requirements within sixty (60) days after achieving maximum production levels but no later than one hundred and eighty (180) days after startup.

(c) Pursuant to 326 IAC 8-5-6(e), the Permittee shall ensure and verify initial and continuing compliance with the control efficiency requirements by doing the following:

(1) The Permittee shall meet the following requirements for the scrubber CE008:

(A) The pressure drop across the scrubber must be within the normal range established during the latest stack test. The pressure drop of the scrubber must be monitored at least once per day when the associated emission unit is in operation to ensure that the pressure drop across the scrubber is within the normal range established during the latest stack test.

(B) The scrubber flow rate must be greater than the minimum flow rate for the scrubber during normal operation. The scrubber flow rate must be monitored at least once per day when the associated emission unit is in operation to ensure that the flow rate of the scrubber is greater than the minimum flow rate established during the latest stack test.

(C) Maintain daily records of pressure drop and flow rate for the scrubber during normal operation.

(2) The Permittee shall meet the following requirements for the thermal oxidizer CE009:

(A) The three (3) hour average operating temperature of the oxidizer, as measured by a continuous temperature monitor, must be greater than or equal to the minimum operating temperature established during the most recent compliance demonstration.

(B) Maintain continuous temperature records for the thermal oxidizer and the three (3) hour average operating temperature used to demonstrate compliance during the most recent compliant stack test.

(C) The three (3) hour average duct pressure or fan amperage, as measured by a continuous parameter monitoring system, must be within the normal range established during the most recent compliance demonstration.

(D) Maintain daily records of the duct pressure or fan amperage for the thermal oxidizer.

(3) The Permittee shall meet the following requirements for the enclosed flare CE015:

(A) Maintain a flare pilot flame when the associated emission unit is in operation and continuously monitor the presence of a flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame when the associated emission unit is in operation.

(B) Maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when the loading rack is in operation.

(C) The overall efficiency for the enclosed flare CE015 (including the capture efficiency and destruction efficiency) shall be at least 98%.

State Rule Applicability - Cooling Tower (Insignificant Activity)

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(11), particulate emissions from the noncontact cooling tower systems are exempt from the requirements of 326 IAC 6-3.

State Rule Applicability – Storage Tanks T001 through T005 (Insignificant Activities)

326 8-4-3 (Petroleum Liquid Storage Facilities)

The denaturant storage tank (T005) has a maximum capacity greater than 39,000 gallons and will be used to store gasoline which has a vapor pressure greater than 1.52 psi. Therefore, tank T005 is subject to the requirements of 326 IAC 8-4-3. Tank T005 will be equipped with an internal floating roof.

(a) Pursuant to 326 IAC 8-4-3(b)(1)(B), storage tank T005 shall be maintained such that there are no visible holes, tears, or other openings in the seal or any seal fabric or materials.

(b) Pursuant to 326 IAC 8-4-3(b)(1)(C), all openings, except stub drains, are equipped with covers, lids, or seals such that:

(1) The cover, lid or seal in the closed potion at all times except when in actual use;

(2) Automatic bleeder vents are closed at all times except when the roof is floated off or landed on the roof leg supports;

(3) Rim vents, if provided, are set to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

(c) Pursuant to 326 IAC 8-4-3(d), the Permittee shall maintain the following records for a period of two (2) years for tank T005:

(1) The types of volatile petroleum liquid stored;

(2) The maximum true vapor pressure of the liquids as stored; and

(3) The results of the inspections performed on the storage vessels.

The above records shall be made available to the IDEM, OAQ upon written request. Tanks T001, T002, T003, T004, T006, T007, and T008 will not be used to store petroleum. Therefore, these tanks are not subject to requirements of 326 IAC 8-4-3.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

The source is not located in Clark, Floyd, Lake, or Porter County. Therefore, the requirements of 326 IAC 8-9-1 are not applicable to the tanks at this source.

Testing Requirements

In order to demonstrate compliance with the FESOP, PSD minor limits, and 40 CFR 60, Subpart Db, the Permittee shall perform the following tests within 60 days after achieving the maximum capacity but not later than 180 days after initial startup of the ethanol production plant:

(a) PM and PM10 tests for baghouses CE001 through CE007, CE010, CE011, CE012, and CE018 which are used to control the particulate emissions from the two (2) truck dump pits identified as EU001, the two (2) grain legs and conveying system identified as EU002, the six (6) grain bins identified as EU003, the corn scalper identified as EU004, the surge bin identified as EU005, the five (5) hammermills identified as EU006, EU007, EU008, EU009 and EU010, the DDGS cooler identified as EU029, the DDGS storage silo identified as EU030, the DDGS silo bypass identified as EU031, the DDGS storage

building identified as EU032, the DDGS conveyor identified as EU033, and the DDGS rail loadout spout identified as EU035.

(b) PM, PM10, VOC, NOx, SO2, CO, and Acetaldehyde tests for the thermal oxidizer system CE009. The thermal oxidizer system (CE009) is used to control the emissions from the fermentation and distillation processes and the DDGS dryers (EU025 and EU026).

(c) NOx and CO emissions from boilers EU027 and EU028.

(d) VOC, NOx, and CO emissions from the enclosed flare CE015, which is used to control the emissions from the ethanol loading rack.

(e) PM and PM10 emissions from the DDGS cooler (EU029).

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the approporiate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

1. The two (2) truck dump pits identified as EU001, the two (2) grain legs and conveying system identified as EU002, the Six (6) grain bins identified as EU003, the corn scalper identified as EU004, the surge bin identified as EU005, the five (5) hammermills identified as EU006, EU007, EU008, EU009 and EU010, the DDGS cooler identified as EU029, the DDGS storage silo identified as EU030, the DDGS silo bypass identified as EU031, the DDGS storage building identified as EU032, the DDGS conveyor identified as EU033, and the DDGS rail loadout spout identified as EU035 have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses CE001 through CE007, CE010, CE011, CE012, and CE018.

   <u>Visible Emissions Notations</u>

   (a) Visible emission notations of the baghouse stack exhausts (stacks SV001 through SV007, SV010, SV011, and SV012) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor shall record whether emissions are normal or abnormal.

   (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee or contractor is a person who has worked or trained at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Parametric Monitoring

(a) The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving and handling operations (EU001 through EU005), the hammermills (EU006 through EU010), and the DDGS handling and loadout operations (EU030 through EU033, and EU035), at least once per day when these units are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.0 to 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(b) The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ and shall be calibrated at least once every six (6) months.

(c) In the event that bag failure has been observed:

(1) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(2) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

These monitoring conditions are necessary because the baghouses controlling the two (2) truck dump pits identified as EU001, the two (2) grain legs and conveying system identified as EU002, the six (6) grain bins identified as EU003, the corn scalper identified as EU004, the surge bin identified as EU005, the five (5) hammermills identified as EU006, EU007, EU008, EU009 and EU010, the DDGS cooler identified as EU029, the DDGS storage silo identified as EU030, the DDGS silo bypass identified as EU031, the

DDGS storage building identified as EU032, the DDGS conveyor identified as EU033, and the DDGS rail loadout spout identified as EU035 must operate properly to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8 (FESOP), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

2. The fermentation and distillation process and the DDGS dryers (EU025 and EU026), which are controlled by the thermal oxidizer system (CE009), have applicable compliance monitoring conditions as specified below:

Visible Emissions Notations

(a) Visible emission notations of the stack exhaust from the RTO system stack (SV009) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

(f) A continuous monitoring system shall be calibrated, maintained, and operated on the thermal oxidizer system (CE009) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of this system shall be recorded as a 3-hour average. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature of 1,400°F.

(g) The Permittee shall determine the 3-hour average temperature from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM.

(h) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizers at or above the 3-hour average temperature as observed during the compliant stack test.

(i) The Permittee shall determine fan amperage or duct pressure from the most recent valid stack test that demonstrates compliance with limits in this permit, as approved by IDEM, OAQ.

(j) The duct pressure or fan amperage shall be observed at least once per day when the thermal oxidizer is in operation. On and after the date the approved stack test results are available, the duct pressure or fan amperage shall be maintained within the normal range as established in most recent compliant stack test.

These monitoring conditions are necessary because the thermal oxidizer (CE009) must operate properly at all times the fermentation and distillation processes and the DDGS dryers (EU025 and EU026) are in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), 326 IAC 8-5-6, and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

3. The ethanol loading rack (EU036), which is controlled by enclosed flare CE015, has applicable compliance monitoring conditions as specified below:

   The presence of a flare flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.

   These monitoring conditions are necessary because flare CE015 must operate properly at all times that the ethanol loading rack (EU047) is in operation to ensure compliance with 326 IAC 2-2 (PSD), 326 IAC 2-8-4 (FESOP), and 326 IAC 8-5-6).

Conclusion

The construction and operation of this ethanol production plant shall be subject to the conditions of the New Construction and FESOP 169-24515-00068.

Appendix A: Emission Calculations
PM and PM10 Emissions
From the Grain Receiving and Handling Operations

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Potential to Emit PM/PM10 - Captured Emissions:

Baghouse ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 before Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)
CE001	Grain Receiving (EU001), Conveyors (EU 002), and Storage Bins (EU003)	Baghouse	0.004	36,000	541	99%	1.23	5.41
CE002	Corn Scalper (EU 004), Surge Bin (EU 005)	Baghouse	0.004	2,500	38	99%	0.09	0.38
CE003	Hammermill #1 (EU 006)	Baghouse	0.004	12,000	180	99%	0.41	1.80
CE004	Hammermill #2 (EU 007)	Baghouse	0.004	12,000	180	99%	0.41	1.80
CE005	Hammermill #3 (EU 008)	Baghouse	0.004	12,000	180	99%	0.41	1.80
CE006	Hammermill #4 (EU 009)	Baghouse	0.004	12,000	180	99%	0.41	1.80
CE007	Hammermill #5 (EU 010)	Baghouse	0.004	12,000	180	99%	0.41	1.80
Total					1,479			14.8

Assume all PM emissions equal PM10 emissions.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr
PTE of PM/PM10 after Control (tons/yr) = Outlet Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr x 8760 hr/yr x 1 ton/2000 lbs
PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency)

2. Potential to Emit PM/PM10 - Fugitive Emissions:

Unit ID	Unit Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	Baghouse ID	Capture Efficiency (%)	Fugitive PM Emissions (tons/yr)	Fugitive PM10 Emissions (tons/yr)
F001	Grain Receiving	683,280	0.180	0.0590	CE001	80%	12.30	4.03

Note: Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-1 (04/03). Assume all the grain receiving and loadout is by truck, which is the worst case scenario.
There are no fugitive emissions from the grain handling operations because the emissions from these units are 100% captured.

Methodology

Fugitive PM/PM10 Emissions (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x (1-Capture Efficiency%) x 1 ton/2000 lbs

Appendix A: Emission Calculations
VOC and HAP Emissions
From the Fermentation and Distillation Process

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Process Description:

The exhaust from the fermentation/distillation scrubber (CE008) and RTO (CE009).

2. Potential to Emit (PTE) of VOC and HAP from the scrubber:

Pollutant	PTE before Control (tons/yr)	Control Efficiency (%)**	Emission Rate after Control (lbs/hr)*	PTE after Control (tons/yr)
VOC	153.8	95%	30.80	7.7
HAP				
Acetaldehyde	1.4	50%	2.9	0.7
Methanol	0.00	50%	0.1	0.0
Formaldehyde	0.00	50%	0	0.0
Propionaldehyde	0.00	50%	0	0.0
Total HAPs	1.40	50%	3.00	0.7

* VOC and HAP emission factors provided by the source and are based on stack tests at similar facilities.
The Permittee will perform stack testing of the RTO stack.
** The HAP control efficiency information is based on the information from other similar plants.

Methodology

PTE after Control (tons/yr) = Emission Rate after Control (lbs/hr) x 8,760 hr/yr x 1 ton/2000 lbs
PTE before Control (tons/yr) = PTE after Control (tons/yr) / (1- Control Efficiency)

Appendix A: Emission Calculations
RTO stack (2 DDGS Dryers, Fermentation/Distillation)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Dryer Emissions

1.1 Combustion Emissions from the two (2) 60 MMBtu/hr dryers (EU025 and EU026)

Heat Input Capacity MMBtu/hr	Potential Throughput MMBtu/yr
120.0	1051200.0

	Pollutant				
	PM	PM10	SO2	NOx	VOC
Emission Factor in lb/MMBtu*	0.00745	0.00745	0.00059	0.0817	0.0054
Potential Emission in tons/yr	3.9	3.9	0.3	42.9	2.8

*PM emissions assumed equal to PM10 emissions. Emission factors for PM, PM10, SO2, and VOC from AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2 (AP-42, 07/98). Emission Factors for NOx from Stack Test at similar facility. CO emissions addressed on Page 4.

Methodology

Potential Throughput (MMBtu/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr

PTE (tons/yr) = Potential Throughput (MMBtu/yr) x Emission Factor (lbs/MMBtu) x 1 ton/2000 lbs

Appendix A: Emission Calculations
RTO stack (2 DDGS Dryers, Fermentation/Distillation)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1.2 Process Emissions from the two (2) 60 MMBtu/hr dryers

	Pollutant						
	VOC	**SO2	PM	CO	Acetaldehyde	Acrolein	Methanol
Emission Rate Controlled (lbs/hr)*	9.70	10.80	5.80	8.00	0.54	0.07	0.04
Potential Emission in tons/yr	42.5	47.30	25.40	35.04	2.37	0.31	0.18

* Emission Factors provided by source based on engineering estimates at similar facilities. CO emission factor includes both combustion and process emissions.
**Emission Factors based on engineering estimates at similar facilities. The Permittee will perform stack testing to demonstrate compliance with the emission rate.

Methodology

Potential Emissions (tons/yr) = Emission Rate before Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

2. Combustion Emissions from the RTO (30 MMBtu/hr)

Heat Input Capacity MMBtu/hr	Potential Throughput MMBtu/yr
30.0	262800.0

	Pollutant					
	PM	PM10	SO2	NOx**	VOC	CO
Emission Factor in lb/MMBtu*	0.00745	0.00745	0.00059	0.04	0.0054	0.0824
Potential Emission in tons/yr	1.0	1.0	0.1	5.3	0.7	10.8

*PM emissions assumed equal to PM10 emissions. Emission factors for PM, PM10, SO2, VOC, and CO from AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2 (AP-42, 07/98).
** Emission Factor for NOx from Manufacturer's guarantee.

Methodology

Potential Throughput (MMBtu/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr
Potential Emissions (tons/yr) = Potential Throughput (MMBtu/yr) x Emission Factor (lbs/MMBtu) x 1 ton/2000 lbs

Appendix A: Emission Calculations
RTO stack (2 DDGS Dryers, Fermentation,Distillation)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

3. Fermentation/Distillation Scrubber Emissions

Pollutant	Emission Rate from scrubber (lb/hr)*	Emission Rate from scrubber (tons/yr)*
VOC	30.80	134.9
HAPs:		
Acetaldehyde	2.9	12.7
Methanol	0.1	0.4
Formaldehyde	0	0.0
Propionaldehyde	0	0.0

* See scrubber calculations on page 2.

Methodology

Emission Rate from scrubber (tons/yr) = Emission Rate from scrubber (lbs/hr) x 8,760 hr/yr x 1 ton/2000 lbs

4. Total RTO Stack PTE (tons/yr)

Pollutant	Dryer Combustion PTE (tons/yr)	Dryer Process PTE (tons/yr)	Scrubber PTE (tons/yr)	RTO Combustion PTE (tons/yr)	Total RTO Stack PTE (tons/yr)	Total RTO Stack PTE (lb/hr)	Total RTO Stack Uncontrolled PTE (tons/yr)
PM	3.9	25.4		1.0	30.20	6.89	302
PM10	3.9	25.4		1.0	30.2	6.9	302
SO2	0.3	47.3		0.1	47.7	10.9	47.69
VOC	2.8	42.5		0.7	46.0	10.5	2302
CO		35		10.8	45.9	10.5	459
NOx	42.9			5.3	48.2	11.0	48.20
Acetaldehyde		2.4			2.37	0.54	23.7
Methanol		0.18			0.18	0.04	1.8
Formaldehyde		1.18	0.00		1.18	0.27	11.8
Acrolein		0.31			0.31	0.07	3.1
Propionaldehyde			0.00		0.00	0.00	0.0
Total HAP*	0.03	4.0	0.0	0.25	4.3	0.99	43.2

* See page 6 for Dryer and RTO Combustion HAP calculations.

Methodology

PTE Controlled (tons/yr) = Uncontrolled Emission Rate (tons/yr) x (1 - Control Efficiency)
Total RTO Stack PTE (tons/yr) = Dryer Combustion PTE + Dryer Process PTE (Controlled) + Scrubber PTE (Controlled) + RTO Combustion PTE
Total RTO Stack PTE (lb/hr) = (Dryer Combustion PTE + Dryer Process PTE (Controlled) + RTO Combustion PTE + Scrubber PTE (Controlled)) * 2000/8760
Total RTO Stack Uncontrolled PTE (tons/yr) = Total RTO Stack PTE (tons/yr) * (1/(1 - Control Efficiency))

Appendix A: Emission Calculations
HAP Emissions from Natural Gas Combustion
From Two (2) 60 MMBtu/hr DDGS Dryers and One (1) 30 MMBtu/hr RTO System

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

SV009 HAP Emissions from Natural Gas Combustion

1. Dryer Combustion HAPs - There are two DDGS dryers, each with a capacity of 60 MMBtu/hr, burning natural gas. The dryers will exhaust to the RTO at all times when the dryers are operated. The source indicated that the RTO has an estimated HAP control effiency of 90% for the dryer.

	Emission Factor*	Potential to Emit Emissions (Uncontrolled)		PTE (Controlled)	
HAP Pollutant	**(lb/MMscf)**	**(lb/hr)**	**(ton/yr)**	**(lb/hr)**	**(ton/yr)**
Benzene	0.0021	2.52E-04	1.10E-03	7.56E-06	3.31E-05
Formaldehyde	0.075	9.00E-03	3.94E-02	2.70E-04	1.18E-03
Hexane	1.8	2.16E-01	9.46E-01	6.48E-03	2.84E-02
Naphthalene	0.00061	7.32E-05	3.21E-04	2.20E-06	9.62E-06
Toluene	0.0034	4.08E-04	1.79E-03	1.22E-05	5.36E-05
Arsenic	0.0002	2.40E-05	1.05E-04	7.20E-07	3.15E-06
Berylium	0.000012	1.44E-06	6.31E-06	4.32E-08	1.89E-07
Cadmium	0.0011	1.32E-04	5.78E-04	3.96E-06	1.73E-05
Chromium	0.0014	1.68E-04	7.36E-04	5.04E-06	2.21E-05
Cobalt	0.000084	1.01E-05	4.42E-05	3.02E-07	1.32E-06
Lead	0.0005	6.00E-05	2.63E-04	1.80E-06	7.88E-06
Manganese	0.00038	4.56E-05	2.00E-04	1.37E-06	5.99E-06
Mercury	0.00026	3.12E-05	1.37E-04	9.36E-07	4.10E-06
Nickel	0.0021	2.52E-04	1.10E-03	7.56E-06	3.31E-05
Selenium	0.000025	3.00E-06	1.31E-05	9.00E-08	3.94E-07
	Total:	**0.226**	**0.992**	**0.007**	**0.030**

* Emission factors from AP-42, Chapter 1.4, Tables 1.4-3 and 1.4-4 (07/98).

Methodology

PTE (Uncontrolled) (tons/yr) = 120 (MMBtu/hr) x 8,760 (hr/yr) x Emission Factor (lbs/MMscf) x 1 MMCF/1,000 MMBtu x 1 ton/2000 lbs
PTE (Controlled) (tons/yr) = 120 (MMBtu/hr) x 8,760 (hr/yr) x Emission Factor (lbs/MMscf) x 1 MMCF/1,000 MMBtu x 1 ton/2000 lbs (1 - 97%)

2. RTO Combustion HAPs - This facility will operate an RTO to control emissions from the fermentation and distillation systems and the the DDGS dryers. The RTO is equipped with five natural gas fired burners rated at 6 MMBtu/hr each for a total of 30 MMBTU/hr.

	Emission Factor*	PTE	
HAP Pollutant	**(lb/MMscf)**	**(lb/hr)**	**(ton/yr)**
Benzene	0.0021	6.30E-05	2.76E-04
Formaldehyde	0.075	2.25E-03	9.86E-03
Hexane	1.8	5.40E-02	2.37E-01
Naphthalene	0.00061	1.83E-05	8.02E-05
Toluene	0.0034	1.02E-04	4.47E-04
Arsenic	0.0002	6.00E-06	2.63E-05
Berylium	0.000012	3.60E-07	1.58E-06
Cadmium	0.0011	3.30E-05	1.45E-04
Chromium	0.0014	4.20E-05	1.84E-04
Cobalt	0.000084	2.52E-06	1.10E-05
Lead	0.0005	1.50E-05	6.57E-05
Manganese	0.00038	1.14E-05	4.99E-05
Mercury	0.00026	7.80E-06	3.42E-05
Nickel	0.0021	6.30E-05	2.76E-04
Selenium	0.000025	7.50E-07	3.29E-06
	Total:	**0.057**	**0.248**

* Emission factors from AP-42, Chapter 1.4, Tables 1.4-3 and 1.4-4 (07/98).

Methodology

PTE (tons/yr) = 30 (MMBtu/hr) x 8,760 (hr/yr) x Emission Factor (lbs/MMscf) x 1 MMCF/1,000 MMBtu x 1 ton/2000 lbs

3. Total HAPs

	CAS	PTE	
HAP Pollutant		**(lb/hr)**	**(ton/yr)**
Benzene	71-43-2	7.06E-05	3.09E-04
Formaldehyde	50-00-0	2.52E-03	1.10E-02
Hexane	110-54-3	6.05E-02	2.65E-01
Naphthalene	91-20-3	2.05E-05	8.98E-05
Toluene	108-88-3	1.14E-04	5.00E-04
Arsenic	7440-38-2	6.72E-06	2.94E-05
Berylium	7440-41-7	4.03E-07	1.77E-06
Cadmium	7440-43-7	3.70E-05	1.62E-04
Chromium	7440-47-3	4.70E-05	2.06E-04
Cobalt	7440-48-4	2.82E-06	1.24E-05
Lead	NA	1.68E-05	7.36E-05
Manganese	7439-96-5	1.28E-05	5.59E-05
Mercury	7439-97-6	8.74E-06	3.83E-05
Nickel	7440-02-0	7.06E-05	3.09E-04
Selenium	7782-49-2	8.40E-07	3.68E-06
	Total:	**0.063**	**0.278**

Methodology

PTE (tons/yr) = Potential Emissions from Dryers (tons/yr) + Potential Emissions from RTO (tons/yr)

Appendix A: Emission Calculations
PM/PM10 and VOC Emissions
From the DDGS Cooler (EU029)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Potential to Emit PM/PM10

Baghouse ID	Process Description	Control Device		Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 before Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)
CE010	DDGS Cooler	Baghouse		0.004	23,800	357	99%	0.82	3.57

Assume all PM emissions equal PM10 emissions.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr
PTE of PM/PM10 after Control (tons/yr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr x 8760 hr/yr x 1 ton/2000 lbs
PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency)

2. Potential to Emit VOC:

VOC Emission Factor = 5 (lb/hr) (Source-provided, based on engineering estimate from similar facilities.)

PTE of VOC (tons/yr) = 5.0 (lb/hr) x 8760 (hr/yr) x 1 (ton/2000 lbs) = **21.90 (tons/yr)**

3. Potential to Emit HAPs:

	Pollutant				
	Acetaldehyde	Acrolein	Methanol	Formaldehyde	Total
Emission Rate after Control (lbs/hr) *	1.12	0.07	0.08	0.08	1.35
PTE after Control in tons/yr	**4.91**	**0.31**	**0.35**	**0.35**	**5.91**

*HAP emission rates were provided by the source based on engineering estimates from a similar facility.

Methodology

PTE after Control (tons/yr) = Emission Rate after Control (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

Appendix A: Emission Calculations
PM and PM10 Emissions
From the DDGS Handling and Loadout Operations

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Potential to Emit PM/PM10 - Captured Emissions:

Baghouse ID	Process Description	Control Device	Outlet Grain Loading (gr/dscf)	Maximum Air Flow Rate (scfm)	PTE of PM/PM10 before Control (tons/yr)	Control Efficiency (%)	PTE of PM/PM10 after Control (lbs/hr)	PTE of PM/PM10 after Control (tons/yr)
CE011	DDGS Silo Loading (EU030)	Baghouse	0.004	4,000	60.1	99%	0.14	0.60
CE012	DDGS Silo Bypass (EU031)	Baghouse	0.004	4,000	60.1	99%	0.14	0.60
Total					120.14			1.20

Assume all PM emissions equal PM10 emissions.

Methodology

PTE of PM/PM10 after Control (lbs/hr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr
PTE of PM/PM10 after Control (tons/yr) = Grain Loading (gr/dscf) x Max. Air Flow Rate (scfm) x 60 mins/hr x 1/7000 lb/gr x 8760 hr/yr x 1 ton/2000 lbs
PTE of PM/PM10 before Control (tons/yr) = PTE of PM/PM10 after Control (tons/yr) / (1-Control Efficiency)

2. Potential to Emit PM/PM10 - Fugitive Emissions:

Unit ID	Unit Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)	Uncontrolled PM10 Emission Factor (lbs/ton)	Capture Efficiency (%)	Fugitive PM Emissions (tons/yr)	Fugitive PM10 Emissions (tons/yr)
EU034	DDGS Loadout Operation	201,480	0.0860	0.0290	50%	4.33	1.46

Note: Emission factors are from AP-42, Chapter 9.9.1 - Grain Elevators, Table 9.9.1-2 (03/03).
The loading of DDG solids into trucks and railcars will be conducted inside a shed.
The rail loading operations will be aspired to a fabric filter. Due to physical constraints of the loading operations, the truck loadout will not be aspired to the fabric filter. The shed will provide 50% control of emissions during truck loading. Therefore, DDG loading will be a source of fugitiv
The emissions from the loading operations into trucks are higher than railcar loading. Therefore, PTE calculations will be based on truck loading for all DDG.

Methodology

Fugitive PM/PM10 (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled PM Emission Factor (lbs/ton) x (1-Capture Efficiency) x 1 ton/2000 lbs

Appendix A: Emission Calculations
Criteria and HAP Emissions
From two (2) 143 MMBtu/hr Boilers (EU027 and EU028)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

Heat Input Capacity MMBtu/hr	Potential Throughput MMBtu/yr	Potential Throughput MMCF/yr
286.0	2505360.0	2505.4

Criteria Pollutants

	PM*	PM10*	SO2	NOx**	VOC	CO***
Emission Factor in lb/MMBtu	0.00186	0.00745	0.00059	0.035	0.0054	0.04
Potential Emission in tons/yr	2.3	9.3	0.7	43.8	6.8	50.1

*PM emission factor is filterable PM only. PM10 emission factor is condensable and filterable PM10 combined.
** Emission Factor for NOx from manufacturer guarantee. Permit requires verification through stack testing.
*** Emission Factor for CO from performance test data for similar unit. Permit requires verification through stack testing.

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMBtu	2.1E-06	1.2E-06	7.4E-05	1.8E-03	3.3E-06
Potential Emission in tons/yr	2.58E-03	1.47E-03	9.21E-02	2.21E+00	4.18E-03

HAPs - Metals

	Lead	Cadmuim	Chromium	Manganese	Nickel
Emission Factor in lb/MMBtu	4.9E-07	1.1E-06	1.4E-06	3.7E-07	2.1E-06
Potential Emission in tons/yr	6.14E-04	1.35E-03	1.72E-03	4.67E-04	2.58E-03

Total HAPs = 2.36 tons/yr
The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All Emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF - 1,000,000 Cubic Feet of Gas

Potential Throughput (MMBtu) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04
unless otherwise noted (AP-42 Supplement D 3/98)
Potential Emission (tons/yr) = Throughput (MMBtu/yr) x Emission Factor (lb/MMBtu)/2,000 lb/ton

Appendix A: Emission Calculations
VOC and HAP Emissions
From the Wetcake Production

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Process Description:

Max. Throughput Rate: 60 tons/hr of wetcake (provided by the source)

2. Potential to Emit (PTE) of VOC and HAP from Wetcake Storage:

Pollutant	*Emission Factor (lbs/ton)	PTE (tons/yr)
VOC	8.30E-03	**2.17**
HAP		
Acetaldehyde	1.00E-04	**0.03**
Acrolein	2.00E-05	**5.23E-03**
Formaldehyde	2.00E-04	**0.05**
Methanol	4.00E-05	**0.01**
Total HAP		**0.09**

* Emission Factors provided by the source based on the stack test results for DENCO, LLC in Morris, MN.

Methodology

PTE (tons/yr) = Max. Throughput Rate (tons/hr) x Emission Factor (lbs/ton) x 8760 hr/yr x 1 ton/2000 lbs

3. Potential to Emit (PTE) of VOC from Centrifuge bypass Stack (SV017):

Pollutant	*Emission Factor (lbs/hr)	PTE (tons/yr)
VOC	8.09E-02	**0.35**

* Emission Factors provided by the source based on engineering calculations.

Methodology

PTE (tons/yr) = Emission Factor (lbs/hr) x 8760 hr/yr x 1 ton/2000 lbs

4. Potential to Emit (PTE) of VOC and HAP from Wetcake Production:

Pollutant	PTE (tons/yr)
VOC	**2.52**
HAP	
Acetaldehyde	**0.03**
Acrolein	**0.01**
Formaldehyde	**0.05**
Methanol	**0.01**
Total HAP	**0.09**

Methodology

PTE (tons/yr) = PTE from Wetcake Storage (tons/yr) + PTE from Centrifuge bypass Stack (tons/yr)

Appendix A: Emission Calculations
VOC and HAP Emissions from Ethanol Loading Racks (EU036)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Emission Factors: AP-42

Denatured ethanol will be shipped by either truck loading rack or railcar loading rack. Railcars will be dedicated fleets, but the trucks may be used to carry gasoline prior to filling with ethanol. Both railcars and trucks will be filled by submerged loading process. Truck and rail loadout operations will be controlled by a flare (CE015), which has a control efficiency of 98% for VOC and HAPs.

According to AP-42, Chapter 5.2 - Transportation and Marketing of Petroleum Liquids (01/95), the VOC emission factors for the truck and rail loading racks can be estimated from the following equation:

L = 12.46 x (SPM)/T

where:

L = loading loss (lbs/kgal)
S = a saturation factor (see AP-42, Table 5.2-1)
P = true vapor pressure of the liquid loaded (psia)
M = molecular weight of vapors
T = temperature of the bulk liquid loaded (degree R)

Previous Stored Liquid	*S	P (psia)	M (lbs/mole lbs)	T (degree R)	L (lbs/kgal)
Gasoline (normal)	1.0	5.9169	62	511	8.95
Gasoline (clean cargo)	0.5	5.9169	62	511	4.47
Denatured Ethanol (normal)	0.6	0.63	49.9	511	0.46
Denatured Ethanol (clean cargo)	0.5	0.63	49.9	511	0.38

Therefore, the emission factor for loading denatured ethanol to trucks which stored gasoline previously
= L (gasoline, normal) - L (gasoline, clean cargo) + L (denatured ethanol, clean cargo) = 4.86 (lbs/kgal)

2. Potential to Emit VOC Before Control:

(1) Assume all ethanol loaded out via truck:
Loading rate for trucks: 69 MMgal/yr
PTE of VOC before Control (tons/yr) = 69 MMgal/yr x 4.86 lbs/kgal x 1 ton/2000 lbs = **167.5 tons/yr**

(2) Assume all ethanol loaded out via rail:
Loading rate for rail: 69 MMgal/yr
PTE of VOC before Control (tons/yr) = 69 MMgal/yr x 0.46 lbs/kgal x 1 ton/2000 lbs = **15.8 tons/yr**

3. Limited Potential to Emit:

Annual Production Limit: 69,000 kgal/yr (total)
Flare Control Efficiency: 98%

(1) Assume all ethanol loaded out via truck:
PTE of VOC from truck loading (tons/yr) = 4.86 lbs/kgal x 69,000 kgal/yr x (1-98%) x 1 ton/2000 lbs = **3.35 tons/yr**

(2) Assume all denatured ethanol is loaded to railcars (controlled by flare):
PTE of VOC (tons/yr) = 0.46 lbs/kgal x 69,000 kgal/yr x (1-98%) x 1 ton/2000 lbs = **0.32 tons/yr**

Worst case scenario is when loading 69 MMgal/yr denatured ethanol to trucks = 3.35 tons/yr

4. Potential to Emit HAPs:

HAP emissions are mainly from the unloading process for trucks, which may have been used to ship gasoline previously.

HAP	HAP Fraction*	PTE of HAP before Control (tons/yr)	PTE of HAP after Control (tons/yr)
Benzene	2.50E-03	0.42	8.37E-03
Carbon Disulfide	2.00E-05	0.003	6.70E-05
Cumene	1.00E-04	0.02	3.35E-04
Ethyl benzene	5.00E-05	0.01	1.67E-04
n-Hexane	5.00E-02	8.37	1.67E-01
Toluene	5.00E-03	0.84	1.67E-02
Xylene	5.00E-04	0.08	1.67E-03
Total	**0.06**	9.7	0.19

* This is the HAP fraction for gasoline vapors.

Methodology

PTE of HAP before Control (tons/yr) = PTE of VOC before Control (tons/yr) x HAP Fraction
Limited PTE of HAP after Control (tons/yr) = Limited PTE of VOC by Trucks (tons/yr) x HAP Fraction

Appendix A: Emission Calculations
Combustion Emissions
From Flare CE013 for Ethanol Loading Rack (EU036)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

Heat Input Capacity MMBtu/hr	Annual Production Limit kgal/yr
0.055	69,000

	Pollutant					
	PM*	PM10*	SO_2*	NOx**	VOC***	CO**
Emission Factor	NA	NA	NA	0.0334 (lbs/kgal)	-	0.084 (lbs/kgal)
Limited Potential to Emit in tons/yr	**NA**	**NA**	**NA**	**1.15**	**0.00**	**2.88**

*PM, PM10, and SO_2 emission factors are negligible due to the smokeless design and minimal H_2S levels.
**Emission factors for NO_x and CO are based on the information provided by the flare manufacturer (John Zink Company).
*** VOC emission calculations can be found in page 11 of this appendix.

Methodology

Limited PTE of NOx and CO (tons/yr) = Annual Production Limit (kgal/yr) x Emission Factor (lbs/kgal) x 1 ton/2000 lbs

Appendix A: Emission Calculations
Fugitive Emissions From Roads

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Paved Road Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (11/06), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E =	emission factor (lb/vehicle mile traveled)	
sL (non-winter)=	road surface silt loading (g/m2) =	0.6 (g/m2) (AP-42, Table 13.2.1-3)
sL (Winter)=	sL (non-Winter) x 4 (g/m2) =	2.4 (g/m^2) (AP-42, Table 13.2.1-3)
w =	mean vehicle weight (tons) =	27.5 tons
k =	empirical constant =	0.082 for PM and 0.016 for PM10
a =	empirical constant =	0.65
b =	empirical constant =	1.5
C =	emission factor for exhaust, brake and tire wear	0.00047 for PM and PM10
p =	number of days per year with 0.01 inches precipitation	120

PM Emission Factor = $(0.082 \times (2.4/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **2.35** lbs/mile

PM10 Emission Factor = $(0.016 \times (0.2.4/2)^{0.65} \times (27.5/3)^{1.5} - 0.00047) \times (1 - 120/1460)$ = **0.46** lbs/mile

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	*Ave Weight of Vehicles (tons)	*Trip Number (trips/yr)	* Round Trip Distance (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
DDGS Load Out	27.5	7,008	0.75	5,256	16.2%	4.45	6.18	1.20
Ethanol Load Out	27.5	8,625	0.75	6,469	19.9%	5.47	7.60	1.48
Denaturant Delivery	27.5	381	0.75	286	0.88%	0.24	0.34	0.07
Grain Delivery	27.5	27,331	0.75	20,498	63.1%	17.34	24.10	4.70
Total				**32,509**	**100%**	**27.5**	**38.2**	**7.45**

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/yr) x Round-Trip Distance (mile/trip)
Traffic Component (%) = VMT / Total VMT
Component Vehicle Weight = Ave. Weight of Vehicles (ton) x Traffic Component (%)
PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source will use periodic sweeping to control the fugitive dust emissions.
The control efficiency from sweeping is assumed to be 50%.

PTE of PM after Control = 38.2 tons/yr x (1-50%) = **19.11 tons/yr**

PTE of PM10 after Control = 7.45 tons/yr x (1-50%) = **3.73 tons/yr**

3. Unpaved Road Emission Factors: AP-42

According to AP-42, Section 13.2.2 Unpaved Roads, November 2006, the PM/PM10 emission factors for unpaved roads can be estimated from the following equation:

lbs/VMT Equation: $E = k\,(s/12)^a\,(W/3)^b$

Where:

Particle size multiplier	k	4.9	dimensionless (PM-30 or TSP)	1.5	dimensionless PM-10
surface material silt content (%)	s	8.5	Table 13.2.2-1		
mean vehicle weight	W	5.00	tons		
Equation constants	a	0.7	PM-30 or TSP Table 13.2.2-2	0.9	PM-10 Table 13.2.2-2
	b	0.45	PM-30 or TSP Table 13.2.2-2	0.45	PM-10 Table 13.2.2-2

PM Emission Factor = $(4.9) \times (8.5/12)^{0.7} \times (5/3)^{0.45}$ = **4.84** lbs/mile

PM10 Emission Factor = $(1.5) \times (8.5/12)^{0.9} \times (5/3)^{0.45}$ = **1.38** lbs/mile

4. Potential to Emit (PTE) of PM/PM10 from unpaved Roads:

Emission Area	Vehicle Weight (tons)	Unpaved Total VMT	Total Vehicle Emissions (lb/yr)	Total Vehicle Emissions (tpy)
Maintenance Roads (PM)	5.00	78	378	**0.19**
Maintenance Roads (PM10)	5.00	78	108	**0.05**

Methodology

Total Vehicle Emissions (tons/yr) = Unpaved Total VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

Appendix A: Emission Calculations
PM/PM10 Emissions
From the the Cooling Tower (Insignificant Activity)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Process Description:

Type of Cooling Tower:	Induced Draft	
Circulation Flow Rate:	26,000	gal/min
Total Drift:	0.005%	of the circulating flow
Total Dissolved Solids:	2,500	ppm
Density:	8.345	lbs/gal

Note: The information above was provided by the cooling tower manufacturer for the same units located at a similar source.

2. Potential to Emit PM/PM10:

Assume all the dissolved solids become PM10 emissions and assume PM emissions are equal to PM10 emissions.

PTE of PM/PM10 (lbs/hr) = 26,000 gal/min x 60 min/hr x 0.005% x 8.345 lbs/gal x 2,500 ppm x 1/1,000,000 ppm = **1.63 lbs/hr**

PTE of PM/PM10 (tons/yr) = 1.63 lbs/hr x 8760 hr/yr x 1 ton/2000 lbs = **7.1 tons/yr**

Appendix A: Emission Calculations
Criteria Pollutants
From the Diesel Emergency Generator (EU037)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

Power Output (HP)	Operation Limit (hr/yr)
2,640	100

	Pollutant					
	PM*	PM10*	SO_2	NO_x	**VOC	CO
Emission Factor in lb/HP-hr	1.72E-03	1.72E-03	4.00E-03	2.10E-02	3.66E-04	4.58E-04
PTE (tons/yr)	**0.23**	**0.23**	**0.53**	**2.77**	**0.05**	**0.06**

*Assume PM10 emissions are equal to PM emissions.
** Assume TOC (total organic compounds) emissions are equal to VOC emissions.
Emission factors are from manufacturer data, except for SO2, which is from AP-42, Chapter 3.4, Table 3.4-1, SCC #2-02-004-01 (AP-42 Supplement B, 10/96).

Methodology

PTE (tons/yr) = Power Output (HP) x Emission Factor (lb/HP-hr) x Operation Limit (hr/yr) x 1 ton/2000 lbs

Appendix A: Emission Calculations
VOC and HAP Emissions
From Equipment Leaks - Components in Denatured Ethanol service

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Emission Factors

Equipment Type	Service	Emission Factor (lbs/hour/source)*
Pump Seals	light liquid	0.04378
Valves	light liquid	0.008866
Valves	gas	0.013134
Compressors	gas	0.5016
Relief Valves	gas	0.2288
Sampling Connections	all	0.033
Open Ended Lines	all	0.00374
Connectors	all	0.004026

* Emission Factors from EPA-453/R-95-017, Table 2-1.

2. Uncontrolled Emissions

Sources in Denaturant service (Assume 15% VOC by weight)

Equipment Type	Component Count	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)
Pump Seals	6	0.04	0.18
Valves lt. Liq.	117	0.16	0.70
Valves gas	1	0.00	0.00
Compressors	0	0.00	0.0
Relief Valves	0	0.00	0.0
Sampling Connections	0	0.00	0.0
Open Ended Lines	0	0.00	0.0
Connectors	379	0.23	1.0
	Total	**0.43**	**1.9**

Sources in Denatured Ethanol service (assume 100% VOC by weight)

Equipment Type	Component Count	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)
Pump Seals	7	0.31	1.3
Valves lt. Liq.	236	2.09	9.2
Valves gas	32	0.42	1.8
Compressors	0	0.00	0.0
Relief Valves	9	2.06	9.0
Sampling Connections	0	0.00	0.0
Open Ended Lines	0	0.00	0.0
Connectors	1098	4.42	19.4
	Total	**9.30**	**40.7**

Methodology

VOC Emissions (tons/yr) = Component Count x Emission Factor (lbs/hr/source) x VOC by weight (%) x 8760 hr/yr x 1 ton/2000 lbs

3. Controls

Since all of these sources are subject to the NSPS subpart VV; credit for emission reduction attributable to control equipments and a Leak Detection and Repair (LDAR) Program is applied as follows in accordance with EPA-453/R-95-017, chapter 5:

Summary of Equipment Controls and Control Efficiency

Equipment Type	Number of Sources controlled	Control Modification	Control %
Pump Seals	0	Dual mechanical seal with barrier fluid at higher pressure	100
Valves lt. Liq.	0		
Valves gas	0		
Compressors	0		
Relief Valves	2	Rupture disk assembly	100
Sampling Connections	0		
Open Ended Lines	0	Blind, cap, plug or second valve	100
Connectors	0		

Control Effectiveness for a LDAR Program

Equipment Type	Control effectiveness (%) for at least Monthly monitoring 10,000 ppmv leak definition
Pump Seals	75
Valves lt. Liq.	88
Valves gas	92
Connectors	93
Relief Valves	92

Appendix A: Emission Calculations
VOC and HAP Emissions
From Equipment Leaks (continued)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

4. Controlled VOC Emissions

Assume:
- 84% control for all valves in light liquid service,
- 92% control for all valves in gas/vapor service and relief valves;

Controlled Emissions

Equipment Type	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)
Pump Seals	0.09	0.4
Valves lt. Liq.	0.27	1.2
Valves gas	0.03	0.1
Relief Valves	0.13	0.6
Open Ended Lines	0.00	0.0
Connectors	0.33	1.4
Total VOCs	**0.9**	**3.7**

Methodology

VOC Emissions (tons/yr) = Uncontrolled emissions (tons/yr) x (1-Control Effectiveness)

4. Controlled HAP Emissions

HAP	HAP Fraction*	Fugitive HAP Emissions (tons/yr)
Acetaldehyde	2.00E-04	7.45E-04
Methanol	2.11E-05	7.84E-05
Formaldehyde	2.81E-05	1.05E-04
Acrolein	1.40E-05	5.23E-05
Benzene	3.60E-03	1.34E-02
Ethylbenzene	1.00E-04	3.73E-04
n-Hexane	1.80E-02	6.71E-02
Toluene	6.00E-04	2.24E-03
Xylene	3.00E-04	1.12E-03
Total		**0.08**

* This is the worst-case HAP fraction for denatured ethanol or denaturant (gasoline vapors).

Methodology

Fugitive HAP Emissions (tons/yr) = Total Controlled VOC Emissions (tons/yr) x HAP Fraction

Appendix A: Emission Calculations
VOC Emissions
From Equipment Leaks - Components in Ethanol service

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

1. Emission Factors

Equipment Type	Service	Emission Factor (lbs/hour/source)*
Pump Seals	light liquid	0.04378
Valves	light liquid	0.008866
Valves	gas	0.013134
Compressors	gas	0.5016
Relief Valves	gas	0.2288
Sampling Connections	all	0.033
Open Ended Lines	all	0.00374
Connectors	all	0.004026

* Emission Factors from EPA-453/R-95-017, Table 2-1.

2. Uncontrolled Emissions

Sources in Beer service (Assume 15% VOC by weight)

Equipment Type	Component Count	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)
Pump Seals	6	0.04	0.17
Valves lt. Liq.	117	0.16	0.68
Valves gas	1	0.00	0.01
Compressors	0	0.00	0.0
Relief Valves	0	0.00	0.0
Sampling Connections	0	0.00	0.0
Open Ended Lines	0	0.00	0.0
Connectors	379	0.23	1.0
	Total	**0.43**	**1.9**

Sources in Ethanol service (assume 100% VOC by weight)

Equipment Type	Component Count	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)
Pump Seals	7	0.31	1.3
Valves lt. Liq.	236	2.09	9.2
Valves gas	32	0.42	1.8
Compressors	0	0.00	0.0
Relief Valves	9	2.06	9.0
Sampling Connections	0	0.00	0.0
Open Ended Lines	0	0.00	0.0
Connectors	1098	4.42	19.4
	Total	**9.30**	**40.7**

Methodology

VOC Emissions (tons/yr) = Component Count x Emission Factor (lbs/hr/source) x VOC by weight (%) x 8760 hr/yr x 1 ton/2000 lbs

3. Controls

Since all of these sources are subject to the NSPS subpart VV; credit for emission reduction attributable to control equipments and a Leak Detection and Repair (LDAR) Program is applied as follows in accordance with EPA-453/R-95-017, chapter 5:

Summary of Equipment Controls and Control Efficiency

Equipment Type	Number of Sources controlled	Control Modification	Control %
Pump Seals	0	Dual mechanical seal with barrier fluid at higher pressure	100
Valves lt. Liq.	0		
Valves gas	0		
Compressors	0		
Relief Valves	2	Rupture disk assembly	100
Sampling Connections	0		
Open Ended Lines	0	Blind, cap, plug or second valve	100
Connectors	0		

Control Effectiveness for a LDAR Program

Equipment Type	Control effectiveness (%) for at least Monthly monitoring 10,000 ppmv leak definition
Pump Seals	75
Valves lt. Liq.	88
Valves gas	92
Connectors	93
Relief Valves	92

Appendix A: Emission Calculations
VOC Emissions
From Equipment Leaks - Components in Ethanol service (continued)

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

4. Controlled VOC Emissions

Assume:
- 84% control for all valves in light liquid service,
- 92% control for all valves in gas/vapor service;

Controlled Emissions

Equipment Type	VOC Emissions (lbs/hr)	VOC Emissions (tons/yr)
Pump Seals	0.09	0.4
Valves lt. Liq.	0.27	1.2
Valves gas	0.03	0.1
Relief Valves	0.13	0.6
Open Ended Lines	0.00	0.0
Connectors	0.33	1.4
Total VOCs	**0.9**	**3.7**

Methodology

VOC Emissions (tons/yr) = Uncontrolled emissions (tons/yr) x (1-Control Effectiveness)

Appendix A: Emission Calculations
PTE Summary

Company Name: POET Biorefining - North Manchester
Address: North Manchester, Indiana
FESOP: 169-24515-00068
Reviewer: Jamal Naas
Date: May 16, 2007

Limited Potential To Emit after Control

Emission Units	PM	PM10	SO_2	NO_x	VOC	CO	Total HAPs
Grain Receiving and Handling	14.8	14.8	-	-	-	-	-
Grain Receiving - Fugitive	12.3	4.03	-	-	-	-	-
RTO Stack	30.2	30.2	47.69	48.2	46.0	45.9	4.32
DDGS Cooler	3.57	3.57	-	-	21.90	-	5.91
DDGS Handling and Loadout	1.20	1.20	-	-	-	-	-
DDGS Loadout - Fugitive	4.33	1.46	-	-	-	-	-
Boilers	2.33	9.33	0.74	43.8	6.75	50.1	2.36
Wet Cake Production*	-	-	-	-	See Note	-	See Note
Ethanol Loadout and Flare	-	-	-	1.15	3.35	2.88	0.19
Paved Roads (Fugitive)	19.1	3.73	-	-	-	-	-
Unpaved Roads (Fugitive)	0.19	0.05					
Cooling Tower	7.13	7.13	-	-	-	-	-
Diesel Fire Pump(Emergency Generator)	0.23	0.23	0.53	2.77	0.05	0.06	Negligible
Storage Tanks**	-	-	-	-	2.02	-	Negligible
Leaks	-	-	-	-	7.45	-	0.08
Other Insignificant Activities	1.00	1.00	-	-	1.00	-	-
Total PTE	**96.4**	**76.7**	**49.0**	**96.0**	**88.6**	**98.9**	**12.9**

Note:
* This plant is capable of producing both DDGS and MDGS. The emissions from the DDGS production is the worst case scenario. Therefore, the PTE of the wet cake production is not included in the PTE for the entire source.
** Emissions from the storage tanks were calculated by the Permittee using EPA TANKS software (version 4.09d) and have been verified.