



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Federally Enforceable State Operating Permit New Source Review

For Morning Star Energy, LLC in Vermillion County
FESOP No.: F165-24677-00085

The Indiana Department of Environmental Management (IDEM) has received an application from Morning Star Energy, LLC, located at 12222 S. State Road 63, Clinton, Indiana, for a Federally Enforceable State Operating Permit (FESOP). IDEM's Office of Air Quality (OAQ) issues this type of permit to regulate the operation of sources that release air pollutants.

IDEM has reviewed this application, and has developed preliminary findings, consisting of a draft permit and several supporting documents, that would allow Morning Star Energy, LLC to operate an ethanol production plant. If this would operate 365 days a year, 24 hours a day, 7 days a week, it could potentially release greater than 250 tons of particulate matter (PM), greater than 100 tons of particulate matter with a size of less than ten (10) micrometers (PM-10), greater than 100 tons of volatile organic compounds (VOCs), greater than 100 tons of carbon monoxide (CO), less than 100 tons of sulfur dioxide (SO₂), less than 100 tons of nitrogen oxides (NO_x), greater than 10 tons of a single hazardous air pollutant (HAP), and greater than 25 tons of combined HAPs, per year. The FESOP will limit emissions to less 250 tons of PM, 100 tons of PM-10, 100 tons of VOCs, 100 tons of CO, 10 tons of a single HAP, and 25 tons of combined HAPs, per year. The permit requires the use of air pollution control equipment and production limits to restrict the amount of air pollution that can be released.

The applicant intends to construct and operate new equipment that will emit air pollutants. Therefore, the permit contains new permit conditions.

A copy of the permit application and IDEM's preliminary findings are available at:

**Clinton Public Library
313 South Fourth Street
Clinton, IN 47842**

A copy of the preliminary findings is available on the Internet at: www.in.gov/idem/permits/air/pending.html.

How can you participate in this process?

The day after this announcement is published in a newspaper marks the beginning of a 30-day public comment period. During that 30-day period, you may comment on this draft permit. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.

You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the **air pollution impact** of this draft permit are received, with a request for a public hearing, IDEM may hold a public hearing. If a public hearing is held, IDEM will make a separate announcement of the date, time, and location of that hearing. At a hearing, you would have an opportunity to submit written comments, make verbal comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM. If you do not want to comment at this time, but would like to be added to IDEM's mailing list to receive notice of future action related to this permit application, please contact IDEM. Please refer to permit number **F165-24677-00085** in all correspondence.

Contact IDEM at:

IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 3-6878

Pursuant to Contract No.: A305-0-00-34, IDEM, OAQ has assigned the processing of this permit application to Enviroplan Consulting. Therefore, questions should be directed to **Tanya White** of Enviroplan Consulting.

To contact the Permit Reviewer:

Tanya White
Enviroplan Consulting
Edgewater Commons II
81 Two Bridges Road
Fairfield, New Jersey 07004
Dial directly: 973-575-2555, ext. 3276
E-mail: twhite@enviroplan.com

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor or noise. For such issues, please contact your local officials.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM's response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM's decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above, at the local library indicated above, and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate, Indianapolis.

If you have any questions please contact **Tanya White** at the above address.

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

For additional information about air permits and how you can participate, please see IDEM's **Guide for Citizen Participation** and **Permit Guide** on the Internet at: www.in.gov/idem/permits/guide/.



Mitchell E. Daniels, Jr.
Governor

DRAFT

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MC 61-53 IGCN 1003
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www.IN.gov/idem

Thomas W. Easterly
Commissioner

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

**Morning Star Energy, LLC
12222 S. State Road 63
Clinton, Indiana 47842**

(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.

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.: F165-24677-00085	
Issued by: Nisha Sizemore, Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date:

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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 through A.3 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 fuel grade ethanol (ethyl alcohol) production plant.

Source Address:	12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address:	6600 Karyn Drive, Avon, Indiana 46123
General Source Phone Number:	(317) 272-7939
SIC Code:	2869
County Location:	Vermillion
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD 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) The following grain receiving and handling operations, identified as EP 01, approved for construction in 2007, equipped with a baghouse (C20) and choked flow systems for control of particulate emissions (PM/PM-10). The baghouse has an outlet gas flowrate of 48,000 acfm and an outlet grain loading of 0.005 (grains/cubic feet), and exhausts to Stack S20:
- (1) Grain unloading operations consisting of truck receiving operations, with a maximum throughput rate of 20,000 bushels of grain per hour for each pit and railcar receiving operations, with a maximum throughput rate of 40,000 bushels of grain per hour for each pit. The grain unloading operations include two unloading pits to receive grain from trucks, two unloading pits to receive wet grain, and one unloading pit to receive grain from railcars. The receiving pits are also vented to the baghouse C20.
 - (2) One (1) grain elevator with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (3) One (1) grain storage bin filler conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (4) Six (6) grain storage bins with a maximum storage capacity of 500,000 bushels of grain each and a maximum throughput rate of 20,000 bushels of grain per hour.
 - (5) One (1) storage bin emptying conveyor with a maximum throughput rate of 6,000 bushels of grain per hour.

- (6) One (1) grain elevator with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (7) One (1) grain day bin filler conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (8) One (1) grain day storage bin with a maximum storage capacity of 10,000 bushels of grain and a maximum throughput rate of 20,000 bushels per hour.
 - (9) Two (2) grain scalpers, each with a maximum throughput rate of 6,000 bushels of grain per hour.
- (b) The following grain milling operations, identified as EP 02, approved for construction in 2007, equipped with a baghouse (C30) for control of particulate emissions (PM/PM-10). The baghouse has an outlet gas flowrate of 28,000 acfm and an outlet grain loading of 0.005 (grains/cubic feet), and exhausts to Stack S30:
- (1) One (1) hammermill feed conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (2) Four (4) hammermills each with a maximum throughput rate of 6,000 bushels of grain per hour.
- (c) One (1) DDGS handling and loadout operation, identified as EP 13, approved for construction in 2007, with a maximum throughput rate of 500 tons per hour, controlled by a baghouse (C90) with an outlet gas flowrate of 9,100 acfm and an outlet grain loading of 0.005 (grains/cubic feet), exhausting to Stack S90, and consisting of the following:
- (1) Four (4) DDGS storage bins, equipped with loadout spouts controlled by choked flow systems, each with a maximum storage capacity of 4,000 tons and a combined maximum capacity of 500 tons per hour of flat storage.
- (d) The following fermentation operation, identified as EP 03, approved for construction in 2007, with a counter-current CO₂ packed bed scrubber (C40) equipped with a demister as controls for VOC emissions, with an outlet gas flowrate of 11,000 acfm and a maximum scrubbing liquid flowrate of 13,000 gallons of ethanol per hour, and exhausting to Stack S40:
- (1) Seven (7) fermenters with a maximum capacity of 807,000 gallons each.
 - (2) One (1) beer well with a maximum capacity of 1,080,000 gallons.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (e) Two (2) recuperative thermal oxidizers (C10 and C11) with heat recovery steam generator (TO/HRSG) systems, identified as EP 04, approved for construction in 2007, each with a maximum heat input capacity of 122 MMBtu/hr, using natural gas and process waste gases from the DDGS dryers as fuels, each is equipped with low NO_x burners and exhausts to Stack S10.

Under NSPS, Subpart Db, TO/HRSG systems C10 and C11 are considered Industrial-Commercial-Institutional Steam Generating Units and are considered to be affected facilities.

- (f) One (1) distillation process, identified as EP 05, approved for construction in 2007, with a maximum throughput rate of 14,300 gallons of ethanol per hour, controlled by TO/HRSG systems C10 and C11, exhausting through Stack S10, and consisting of the following:

- (1) One (1) receiver (blend) tank with a maximum capacity of 470 gallons.
- (2) Two (2) slurry tanks with a maximum capacity of 25,000 gallons each.
- (3) Two (2) cook tubes with a maximum capacity of 5,200 gallons each.
- (4) One (1) flash tank with a maximum capacity of 4,500 gallons.
- (5) Two (2) liquefaction tanks with a maximum capacity of 128,400 gallons each.
- (6) Two (2) yeast tanks with a maximum capacity of 13,500 gallons each.
- (7) One (1) beer column.
- (8) One (1) side stripper.
- (9) One (1) rectifier column.
- (10) One (1) 190 proof condenser.
- (11) Six (6) molecular sieves.
- (12) One (1) 200 proof condenser.
- (13) Six (6) centrifuges.
- (14) Two (2) centrate tanks with a maximum capacity of 1,690 gallons each.
- (15) Eight (8) evaporators.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (g) Four (4) natural gas-fired dried distillers grains with solubles (DDGS) dryers, identified as EP 09, approved for construction in 2007, each equipped with low NOx burners, each with a heat input rating of 45 MMBtu/hr and with a combined maximum DDGS throughput rate of 45 tons per hour, controlled by the two (2) TO/HRSG systems (C10 and C11), and exhausting to Stack S10.
- (h) One (1) DDGS cooling drum, identified as EP 12, approved for construction in 2007, with a maximum throughput rate of 45 tons/hr of DDGS. Of the 50,000 acfm air flow stream from this process, up to a maximum of 30,000 acfm is vented to a baghouse (C70) for particulate control. The baghouse has a design outlet grain loading of 0.005 (grains/cubic feet) and exhausts to Stack S70. The remaining air flow stream is vented to the TO/HRSG systems (C10 or C11) for additional combustion air and is then exhausted to Stack S10.
- (i) One (1) ethanol loading rack for trucks or railcars, identified as EP 14, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour for truck loading and a maximum throughput rate of 72,000 gallons per hour for railcar loading, controlled by an enclosed flare (C50), which is fueled by natural gas and has a maximum heat input capacity of 12.4 MMBtu/hr, exhausting through Stack S50.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this rack are considered to be affected facilities.

- (j) One (1) biomethanator operation, identified as EP 15, with four (4) bottles, approved for construction in 2007. The biomethanator operation is controlled by a 6.40 MMBtu/hr biomethanator flare (C60), exhausting to Stack S60. When either of the four (4) DDGS dryers (EP 09) are in use, the biomethanator operation will be vented to the dryers and controlled by either of the recuperative thermal oxidizers (C10 or C11).

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:

- (a) Four (4) denatured ethanol storage tanks, identified as T61, T62, T66, and T67, each with a storage capacity of 1,500,000 gallons and a true vapor of greater than 3.5 kilopascals. Each tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tanks T61, T62, T66, and T67 are considered new affected sources.

- (b) One (1) 200 proof (100%) ethanol storage tank, identified as T63, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T63 is considered a new affected source.

- (c) One (1) denaturant (natural gasoline or unleaded gasoline) storage tank, identified as T64, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal. [326 IAC 8-4-3]

Under NSPS, Subpart Kb, tank T64 is considered a new affected source.

- (d) One (1) 190 proof (95%) ethanol storage tank, identified as T65, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T65 is considered a new affected source.

- (e) One (1) diesel-fired emergency fire water pump, identified as EP 16, with a maximum capacity of 300 HP, with a manufacturer's date of after July 1, 2006, and a displacement of less than 30 liters per cylinder, to be installed upon issuance of the permit.

Under NSPS, Subpart IIII, the emergency fire water pump (EP 16) is considered an affected facility.

- (f) One (1) cooling tower, identified as EP 11, with a design circulation rate of 3,000,000 gallons per hour, equipped with four (4) pumps/cells with a maximum pump rate of 375,000 gallons per hour for each cell. The cooling tower is equipped with a drift eliminator for reducing the drift rate, with manufacturer's guaranteed drift rate of 0.005% or less of the circulating water flow, and exhausting to Stack S80.

- (g) One (1) corrosion inhibitor tank with a storage capacity of 3,000 gallons and storing low vapor pressure proprietary ingredients with less than 10% Xylene.

- (h) Activities or emission units:

- (1) not regulated by a NESHAP, whose potential uncontrolled emissions are equal to or less than one (1) pound per day on an emission unit basis for any single HAP or combination of HAPs.

- (2) for which the potential uncontrolled emissions meet the exemption levels specified below:
 - (A) For lead or lead compounds measured as elemental lead, the exemption level is six-tenths (0.6) ton per year or three and twenty-nine hundredths (3.29) pounds per day.
 - (B) For carbon monoxide (CO), the exemption limit is twenty-five (25) pounds per day.
 - (C) For sulfur dioxide, the exemption level is five (5) pounds per hour or twenty-five (25) pounds per day.
 - (D) For volatile organic compounds (VOC), the exemption limit is three (3) pounds per hour or fifteen (15) pounds per day.
 - (E) For nitrogen oxides (NOx), the exemption limit is five (5) pounds per hour or twenty-five (25) pounds per day.
- (3) For an emission unit or activity with potential uncontrolled emissions of particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM-10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day.
- (i) Water related activities including:
 - (1) Production of hot water for on-site personal use not related to any industrial or production process.
 - (2) Water treatment activities used to provide potable and process water for the plant, excluding any activities associated with wastewater treatment.
 - (3) Steam traps, vents, leaks and safety relief valves.
 - (4) Demineralized water tanks and demineralizer vents.
 - (5) Boiler water treatment operations, not including cooling towers.
 - (6) Oxygen scavenging (de-aeration) of water.
- (j) Combustion activities including the following:
 - (1) Portable electrical generators that can be moved by hand from one location to another. "Moved by hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
 - (2) Fuel use related to food preparation for on-site consumption.
 - (3) Combustion emissions from propulsion of mobile sources.
- (k) Ventilation and venting related equipment including the following:
 - (1) Ventilation exhaust, central chiller water systems, refrigeration and air conditioning equipment, not related to any industrial or production process, including natural draft hoods or ventilating systems that do not remove air pollutants.
 - (2) Stack and vents from plumbing traps used to prevent the discharge of sewer gases, handling domestic sewage only, excluding those at wastewater treatment plants or those handling any industrial waste.
 - (3) Vents from continuous emissions monitors and other analyzers.
 - (4) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
 - (5) Air vents from air compressors.
 - (6) Vents for air cooling of electric motors provided the air does not commingle with regulated air pollutants.

- (l) Activities related to routine fabrication, maintenance and repair of buildings, structures, equipment or vehicles at the source where air emissions from those activities would not be associated with any commercial production process including the following:
 - (1) Activities associated with the repair and maintenance of paved and unpaved roads, including paving or sealing, or both, of parking lots and roadways.
 - (2) Painting, including interior and exterior painting of buildings, and solvent use, excluding degreasing operations utilizing halogenated organic solvents.
 - (3) Brazing, soldering, or welding operations and associated equipment.
 - (4) Portable blast-cleaning equipment with enclosures.
 - (5) Blast-cleaning equipment using water as the suspension agent and associated equipment.
 - (6) Batteries and battery charging stations, except at battery manufacturing plants.
 - (7) Lubrication, including hand-held spray can lubrication, dipping metal parts into lubricating oil, and manual or automated addition of cutting oil in machining operations.
 - (8) Non-asbestos insulation installation or removal.
 - (9) Instrument air dryer and filter maintenance.

- (m) Activities performed using hand-held equipment including the following:
 - (1) Application of hot melt adhesives with no VOC in the adhesive formulation.
 - (2) Buffing.
 - (3) Cutting, excluding cutting torches.
 - (4) Drilling.
 - (5) Grinding.
 - (6) Machining wood, metal, or plastic.
 - (7) Polishing.
 - (8) Sanding.
 - (9) Sawing.
 - (10) Turning wood, metal, or plastic.
 - (11) Surface grinding.

- (n) Housekeeping and janitorial activities and supplies including the following:
 - (1) Vacuum cleaning systems used exclusively for housekeeping or custodial activities, or both.
 - (2) Steam cleaning activities.
 - (3) Rest rooms and associated cleanup operations and supplies.
 - (4) Alkaline or phosphate cleaners and associated equipment.
 - (5) Mobile floor sweepers and floor scrubbers.

- (o) Office related activities including the following:
 - (1) Office supplies and equipment.
 - (2) Photocopying equipment and associated supplies.
 - (3) Paper shredding.

- (p) Lawn care and landscape maintenance activities and equipment, including the storage, spraying or application of insecticides, pesticides and herbicides.

- (q) Storage equipment and activities including:
 - (1) Pressurized storage tanks and associated piping for the following:
 - (a) Anhydrous ammonia.

- (b) Acetylene.
 - (c) Carbon Monoxide.
 - (d) Inorganic compounds.
 - (e) Liquid natural gas (LNG)(propane).
- (2) Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.
 - (3) Storage tanks, reservoirs, and pumping and handling equipment of any size containing soap, wax, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
 - (4) Storage of drums containing maintenance raw materials.
 - (5) Storage of the following:
 - (a) Any non-HAP containing material in solid form stored in a sealed or covered container.
 - (6) Portable containers used for the collection, storage, or disposal of materials provided the container capacity is equal to or less than 0.46 cubic meters and the container is closed except when the material is added or removed.
- (r) Emergency and standby equipment including:
- (1) Safety and emergency equipment, except engine driven fire pumps, including fire suppression systems and emergency road flares.
 - (2) Process safety relief devices installed solely for the purpose of minimizing injury to persons or damage to equipment which could result from abnormal process operating conditions, including the following:
 - (a) Explosion relief vents, diaphragms or panels.
 - (b) Rupture discs.
 - (c) Safety relief valves.
 - (3) Activities and equipment associated with on-site medical care not otherwise specifically regulated.
- (s) Sampling and testing equipment and activities including the following:
- (1) Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
 - (2) Hydraulic and hydrostatic testing equipment.
 - (3) Sampling activities including:
 - (a) Sampling of waste.
 - (4) Instrument air dryers and distribution.
- (t) Use of consumer products and equipment where the product or equipment is used at a source in the same manner as normal consumer use and is not associated with any production process.
- (u) Activities generating limited amounts of fugitive dust including:
- (1) Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes under 326 IAC 2-7-1(21)(B), and any required fugitive dust control plan or its equivalent is submitted.
 - (2) Road salting and sanding.

- (v) Activities associated with production including the following:
 - (1) Electrical resistance welding.
 - (2) Application equipment for hot melt adhesives with no VOC in the adhesive formulation.
 - (3) Drop hammers or hydraulic presses for forging or metalworking.
 - (4) Air compressors and pneumatically operated equipment, including hand tools.
 - (5) Compressor or pump lubrication and seal oil systems.
 - (6) Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
 - (7) Equipment for washing or drying fabricated glass or metal products, if no VOCs or HAPs are used in the process, and no gas, oil or solid fuel is burned.
 - (8) Handling of solid steel, including coils and slabs, excluding scrap burning, scarfing, and charging into steel making furnaces and vessels.

- (w) Miscellaneous equipment, but with no emissions associated with the process for which the equipment is used, and activities including the following:
 - (1) Equipment used for surface coating, painting, dipping or spraying operation, except those that will emit VOCs or HAPs.
 - (2) Electric or steam heated drying ovens and autoclaves, including only the heating emissions and not any associated process emissions.
 - (3) Salt baths using nonvolatile salts including caustic solutions that do not result in emissions of any regulated air pollutants.
 - (4) Portable dust collectors.
 - (5) Scrubber systems circulating water based solutions of inorganic salts or bases which are installed to be available for response to emergency situations.
 - (6) Soil borrow pits.
 - (7) Manual loading and unloading operations.
 - (8) Construction and demolition operations.
 - (9) Mechanical equipment gear boxes and vents which are isolated from process materials.

- (x) Space heaters, process heaters, or boilers using the following fuels.
 - (1) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (2) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing less than five-tenths (0.5) percent sulfur by weight.

- (y) The following VOC and HAP storage containers:
 - (1) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.
 - (2) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

- (z) Equipment used exclusively for the following:
 - (1) Filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.

- (aa) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings.
- (bb) Machining where an aqueous cutting coolant continuously floods the machining interface.
- (cc) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6.
 - (1) Cleaners and solvents characterized as follows:
 - (A) having a vapor pressure equal to or less than 2 kPa; 15mm Hg; or 0.3 psi measured at 38 degrees C (100 degrees F); or
 - (B) having a vapor pressure equal to or less than 0.7 kPa; 5mm Hg; or 0.1 psi measured at 20 degrees C (68 degrees F);

the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.
- (dd) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (ee) Closed loop heating and cooling systems.
- (ff) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (gg) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs.
- (hh) Water based adhesives that are less than or equal to 5% by volume of VOCs excluding HAPs.
- (ii) Heat exchanger cleaning and repair.
- (jj) Process vessel degassing and cleaning to prepare for internal repairs.
- (kk) Paved and unpaved roads and parking lots with public access.
- (ll) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.
- (mm) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment.
- (nn) Blowdown for boilers and cooling towers.
- (oo) Purge double block and bleed valves.
- (pp) Filter or coalescer media changeout.
- (qq) A laboratory as defined in 326 IAC 2-7-1(21)(D).
- (rr) One (1) thin stillage tank with a maximum capacity of 374,000 gallons.
- (ss) One (1) syrup tank with a maximum capacity of 180,000 gallons.

- (tt) Two (2) liquidification tanks with a maximum capacity of 128,400 gallons each.
- (uu) One (1) whole stillage tank with a maximum capacity of 180,000 gallons.
- (vv) One (1) cookwater tank with a maximum capacity of 374,000 gallons.
- (ww) One (1) sodium bisulfite tank with a maximum capacity of 7,100 gallons.

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, F165-24677-00085, 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 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.11 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.12 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.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) within ninety (90) days prior to the anticipated start-up date of the plant, 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 F165-24677-00085 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 permit.
- (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 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 [326 IAC 2-8-15(d)]
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][IC 13-30-3-1]

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.2 and A.3.
- (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][326 IAC 2-2]

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.
- (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 two hundred fifty (250) 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 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on July 13, 2007. The plan is included as Attachment A.

C.8 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.9 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.10 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 than 180 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.11 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.12 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 within ninety (90) days of permit issuance. 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 within ninety (90) days, 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.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 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; and/or
 - (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 and 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 within ninety (90) days of permit issuance.

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 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) The following grain receiving and handling operations, identified as EP 01, approved for construction in 2007, equipped with a baghouse (C20) and choked flow systems for control of particulate emissions (PM/PM-10). The baghouse has an outlet gas flowrate of 48,000 acfm and an outlet grain loading of 0.005 (grains/cubic feet), and exhausts to Stack S20:
- (1) Grain unloading operations consisting of truck receiving operations, with a maximum throughput rate of 20,000 bushels of grain per hour for each pit and railcar receiving operations, with a maximum throughput rate of 40,000 bushels of grain per hour for each pit. The grain unloading operations include two unloading pits to receive grain from trucks, two unloading pits to receive wet grain, and one unloading pit to receive grain from railcars. The receiving pits are also vented to the baghouse C20.
 - (2) One (1) grain elevator with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (3) One (1) grain storage bin filler conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (4) Six (6) grain storage bins with a maximum storage capacity of 500,000 bushels of grain each and a maximum throughput rate of 20,000 bushels of grain per hour.
 - (5) One (1) storage bin emptying conveyor with a maximum throughput rate of 6,000 bushels of grain per hour.
 - (6) One (1) grain elevator with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (7) One (1) grain day bin filler conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (8) One (1) grain day storage bin with a maximum storage capacity of 10,000 bushels of grain and a maximum throughput rate of 20,000 bushels per hour.
 - (9) Two (2) grain scalpings, each with a maximum throughput rate of 6,000 bushels of grain per hour.
- (b) The following grain milling operations, identified as EP 02, approved for construction in 2007, equipped with a baghouse (C30) for control of particulate emissions (PM/PM-10). The baghouse has an outlet gas flowrate of 28,000 acfm and an outlet grain loading of 0.005 (grains/cubic feet), and exhausts to Stack S30:
- (1) One (1) hammermill feed conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (2) Four (4) hammermills each with a maximum throughput rate of 6,000 bushels of grain per hour.
- (c) One (1) DDGS handling and loadout operation, identified as EP 13, approved for construction in 2007, with a maximum throughput rate of 500 tons per hour, controlled by a baghouse (C90) with an outlet gas flowrate of 9,100 acfm and an outlet grain loading of 0.005 (grains/cubic feet), exhausting to Stack S90, and consisting of the following:

- (1) Four (4) DDGS storage bins, equipped with loadout spouts controlled by choked flow systems, each with a maximum storage capacity of 4,000 tons and a combined maximum capacity of 500 tons per hour of flat storage.

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

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

D.1.1 PM and PM-10 Emissions [326 IAC 2-2] [326 IAC 2-8-4]

- (a) Pursuant to 326 IAC 2-8-4 (FESOP) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the PM/PM-10 emissions from the grain receiving and handling operations, the grain milling operations, and the DDGS handling and loadout operations shall not exceed the emission limits listed in the table below:

Unit ID	Unit Description	Baghouse ID	PM/PM-10 Emission Limit (lbs/hr)
EP 01	Grain Receiving and Handling	C20	2.06
EP 02	Grain Milling Operations	C30	1.20
EP 13	DDGS Handling and Loadout	C90	0.39

- (b) The total grain received shall not exceed 1,210,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The total DDGS produced shall not exceed 392,568 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (d) The Permittee shall use choked flow systems for the grain receiving and handling operations, and the DDGS loadout spout.

Combined with the PM emissions from other emission units at this source, the PM emissions from the entire source are limited to less than two hundred fifty (250) tons/yr. Combined with the PM-10 emissions from other emission units, the PM-10 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.1.2 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	Maximum Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EP 01	Truck Receiving Operations	560 (for each pit)	70.32 (for each pit)
EP 01	Railcar Receiving Operations	1,120 (for each pit)	79.06 (for each pit)
EP 01	Grain Elevator	560	70.32
EP 01	Grain conveyor	560	70.32
EP 01	Six (6) Grain Storage Bins	560 (each)	70.32 (each)
EP 01	Grain Elevator	560	70.32
EP 01	Grain Day Bin Conveyor	168	56.64
EP 01	Grain Day Bin	560	70.32
EP 01	Two (2) Grain Scalpers	168 (each)	56.64 (each)
EP 02	Hammermill Feed Conveyor	560	70.32
EP 02	Four (4) Hammermills	168 (each)	56.64 (each)
EP 13	DDGS Handling and Loadout	500	68.96

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

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:

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

Pursuant to 326 IAC 6-3-2(e)(3), when the process weight exceeds 200 tons per hour, the maximum allowable emissions 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.1.3 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.1.4 Particulate Control

- (a) In order to comply with Conditions D.1.1(a) and D.1.2, 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
EP 01	Grain Receiving and Handling	C20
EP 02	Grain Milling Operations	C30
EP 13	DDGS Handling and Loadout	C90

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

In order to demonstrate compliance with Conditions D.1.1(a) and D.1.2, the Permittee shall perform PM and PM-10 testing for baghouses C20, C30, and C90 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. PM-10 includes filterable and condensable PM-10. 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.1.6 Visible Emissions Notations

- (a) Visible emission notations of the baghouse stack exhausts (S20, S30, and S90) 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.1.7 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouses used in conjunction with the grain receiving and handling operations (EP 01), the grain milling operations (EP 02), and the DDGS handling and loadout operations (EP 13), 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.

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.1.8 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 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.1.9 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1(b), the Permittee shall maintain monthly records of the total amount of grain received.
- (b) To document compliance with Condition D.1.1(c), the Permittee shall maintain monthly records of the amount of DDGS produced.
- (c) To document compliance with Condition D.1.6, the Permittee shall maintain records of daily visible emission notations of the stack exhausts (S20, S30, and S90). 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).
- (d) To document compliance with Condition D.1.7, the Permittee shall maintain a daily record of the pressure drop across the baghouses controlling EP 01, EP 02, and EP 13. 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).
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.10 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.1(b) and D.1.1(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 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(d) The following fermentation operation, identified as EP 03, approved for construction in 2007, with a counter-current CO₂ packed bed scrubber (C40) equipped with a demister as controls for VOC emissions, with an outlet gas flowrate of 11,000 acfm and a maximum scrubbing liquid flowrate of 13,000 gallons of ethanol per hour, and exhausting to Stack S40:

(1) Seven (7) fermenters with a maximum capacity of 807,000 gallons each.

(2) One (1) beer well with a maximum capacity of 1,080,000 gallons.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

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

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

D.2.1 VOC and HAP Emissions [326 IAC 2-2] [326 IAC 2-8-4] [326 IAC 2-4.1]

Pursuant to 326 IAC 2-8-4 (FESOP), emissions from wet scrubber C40, which is used to control the emissions from the fermentation process shall comply with the following:

- (a) VOC emissions shall not exceed 11.49 lbs/hr; and
- (b) Acetaldehyde emissions shall not exceed 1.38 lbs/hr.

Combined with the VOC emissions from other units, the VOC emissions from the entire source are 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) and 326 IAC 2-4.1 (MACT) are not applicable.

D.2.2 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

- (a) The VOC emissions from the fermentation process (EP 03) shall be controlled by wet scrubber C40; and
- (b) The overall VOC control efficiency for the wet scrubber C40 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.

D.2.3 Standards 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 requirement of Section E.1 for pumps; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

D.2.4 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 devices.

Compliance Determination Requirements

D.2.5 VOC and HAP Control

- (a) In order to comply with Conditions D.2.1 and D.2.2, the wet scrubber C40 shall be in operation and control emissions from the fermentation process (EP 03) at all times that this process is in operation.
- (b) In order to comply with the acetaldehyde limitations contained in Condition D.2.1, the sodium bisulfite injection system shall be in operation, and injecting sodium bisulfite into scrubber C40, at all times that the fermentation process is in operation.

D.2.6 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11][326 IAC 8-5-6(d)]

In order to verify compliance with Conditions D.2.1 and D.2.2, the Permittee shall perform VOC (including emission rate, adsorption efficiency, and capture efficiency) and acetaldehyde testing for scrubber C40 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.

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

D.2.7 Parametric Monitoring

The Permittee shall monitor and record the pressure drop and flow rate of scrubber C40, at least once per day when the associated fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 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. When for any one reading, the flow rate of any of the scrubbers is less than the minimum of 120 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 mention 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.2.8 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.

D.2.9 Sodium Bisulfite Injection System

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on the fermentation scrubber (C40) for measuring the sodium bisulfite injection rate. For the purpose of this condition, continuous means no less than once per minute. The output of the system shall be recorded as one-hour averages. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall inject sodium bisulfite at a rate of 12 milliliters per minute.
- (b) The Permittee shall determine the one-hour average injection rate from the most recent valid stack test that demonstrates compliance with the limits in Condition D.2.1, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall inject sodium bisulfite at or above the one-hour average injection rate as observed during the compliant stack test.

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

D.2.10 Record Keeping Requirements

- (a) To document compliance with Condition D.2.7, the Permittee shall maintain daily records of pressure drop and flow rate for scrubber C40 during normal operation. The Permittee shall include in its daily record when a pressure drop or flow rate reading is not taken and the reason for the lack of a pressure drop or flow rate reading (e.g. the process did not operate that day).
- (b) To document compliance with Condition D.2.9 the Permittee shall maintain records of the one hour average sodium bisulfite injection rate at scrubber C40.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (e) Two (2) recuperative thermal oxidizers (C10 and C11) with heat recovery steam generator (TO/HRSG) systems, identified as EP 04, approved for construction in 2007, each with a maximum heat input capacity of 122 MMBtu/hr, using natural gas and process waste gases from the DDGS dryers as fuels, each is equipped with low NOx burners and exhausts to Stack S10.

Under NSPS, Subpart Db, TO/HRSG systems C10 and C11 are considered Industrial Commercial-Institutional Steam Generating Units and are considered to be affected facilities.

- (f) One (1) distillation process, identified as EP 05, approved for construction in 2007, with a maximum throughput rate of 14,300 gallons of ethanol per hour, controlled by TO/HRSG systems C10 and C11, exhausting through Stack S10, and consisting of the following:

- (1) One (1) receiver (blend) tank with a maximum capacity of 470 gallons.
- (2) Two (2) slurry tanks with a maximum capacity of 25,000 gallons each.
- (3) Two (2) cook tubes with a maximum capacity of 5,200 gallons each.
- (4) One (1) flash tank with a maximum capacity of 4,500 gallons.
- (5) Two (2) liquefaction tanks with a maximum capacity of 128,400 gallons each.
- (6) Two (2) yeast tanks with a maximum capacity of 13,500 gallons each.
- (7) One (1) beer column.
- (8) One (1) side stripper.
- (9) One (1) rectifier column.
- (10) One (1) 190 proof condenser.
- (11) Six (6) molecular sieves.
- (12) One (1) 200 proof condenser.
- (13) Six (6) centrifuges.
- (14) Two (2) centrate tanks with a maximum capacity of 1,690 gallons each.
- (15) Eight (8) evaporators.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (g) Four (4) natural gas-fired dried distillers grains with solubles (DDGS) dryers, identified as EP 09, approved for construction in 2007, each equipped with low NOx burners, each with a heat input rating of 45 MMBtu/hr and with a combined maximum DDGS throughput rate of 45 tons per hour, controlled by the two (2) TO/HRSG systems (C10 and C11), and exhausting to Stack S10.

- (h) One (1) DDGS cooling drum, identified as EP 12, approved for construction in 2007, with a maximum throughput rate of 45 tons/hr of DDGS. Of the 50,000 acfm air flow stream from this process, up to a maximum of 30,000 acfm is vented to a baghouse (C70) for particulate control. The baghouse has a design outlet grain loading of 0.005 (grains/cubic feet) and exhausts to Stack S70. The remaining air flow stream is vented to the TO/HRSG systems (C10 or C11) for additional combustion air and is then exhausted to Stack S10.

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

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

D.3.1 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 in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits for thermal oxidizers C10 and C11, which are used to control the emissions from the distillation process (EU 05) and the DDGS dryers (EU 09):

- (a) Combined PM/PM-10 emissions shall not exceed 5.74 lbs/hr.
- (b) Combined VOC emissions shall not exceed 4.48 lbs/hr.
- (c) Combined CO emissions shall not exceed 20.70 lbs/hr.
- (d) Combined Formaldehyde emissions shall not exceed 0.55 lbs/hr.
- (e) Combined Acetaldehyde emissions shall not exceed 0.50 lbs/hr.
- (f) Combined Methanol emissions shall not exceed 0.20 lbs/hr.
- (g) Combined Acrolein emissions shall not exceed 0.12 lbs/hr.
- (h) Combined NO_x emissions shall not exceed 21.62 lbs/hr.
- (i) Combined SO₂ emissions shall not exceed 20.17 lbs/hr.

Combined with the PM-10, VOC, NO_x, SO₂, and CO emissions from other units, the PM-10, VOC, NO_x, SO₂, and CO emissions from the entire source are each limited to less than 100 tons/yr. Combined with the PM emissions from other units, the PM emissions from the entire source are limited to less than 250 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.3.2 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

- (a) The VOC emissions from each of the four (4) DDGS dryers (EP 09) and the distillation process (EP 05) shall be controlled by TO/HRSG system C10 or C11; and
- (b) The overall VOC control efficiency for each of the TO/HRSG systems C10 and C11 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

D.3.3 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from each of the 122 MMBtu/hr TO/HRSG systems (C10 and C11) shall not exceed 0.26 pounds per MMBtu heat input.

The limit was calculated using 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)

D.3.4 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the four (4) DDGS dryers shall not exceed 43.60 pounds per hour combined when operating at a maximum throughput rate of 45 tons per hour.

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

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:

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

D.3.5 Standards 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 requirement of Section E.1 for pumps; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

D.3.6 Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units [40 CFR Part 60, Subpart Db] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart Db, the Permittee shall comply with the requirements of Section E.2 for TO/HRSG systems C10 and C11.

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 any control devices.

Compliance Determination Requirements

D.3.8 VOC, HAP, CO, PM, and PM-10 Control

In order to comply with Conditions D.3.1 and D.3.2, emissions from the DDGS dryers (EP 09), and the distillation process (EP 05) shall be controlled by at least one of the TO/HRSG systems (C10 or C11) at all times that these units are in operation.

D.3.9 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(d)]

(a) In order to demonstrate compliance with Conditions D.3.1, D.3.2, D.3.3, and D.3.4, the Permittee shall perform PM, PM-10, VOC (including emission rate, destruction efficiency, and capture efficiency), CO, formaldehyde, acetaldehyde, methanol, and acrolein testing for the TO/HRSG system stack (S10) within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensable PM-10. 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) In order to demonstrate compliance with Condition D.3.1, the Permittee is required to verify that the NO_x and SO₂ emission rates for stack S10 do not exceed 21.62 and 20.17 pounds per hour, respectively. The test shall be performed within 60 days after achieving the maximum capacity, but not later than 180 days after initial startup, utilizing methods as approved by the Commissioner. 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.3.10 Visible Emissions Notations

- (a) Visible emission notations of the stack exhaust from the TO/HRSG system stack (S10) 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.3.11 Thermal Oxidizer Temperature

- (a) A continuous monitoring system shall be calibrated, maintained, and operated on each of the TO/HRSG systems (C10 and C11) 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 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.3.1, D.3.2, D.3.3, and D.3.4, as approved by IDEM.
- (c) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.

D.3.12 Parametric Monitoring

- (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.3.1, D.3.2, D.3.3, and D.3.4, as approved by IDEM.
- (b) The duct pressure or fan amperage shall be observed at least once per day when the TO/HRSG systems are 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.

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

D.3.13 Record Keeping Requirements

- (a) To document compliance with Condition D.3.10, the Permittee shall maintain records of daily visible emission notations of the TO/HRSG systems (C10 and C11) stack exhaust (S10). 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.3.11, 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.
- (c) To document compliance with Condition D.3.12, the Permittee shall maintain daily records of the duct pressure or fan amperage for the TO/HRSG systems (C10 and C11). The Permittee shall include in its daily record when a duct pressure or fan amperage reading is not taken and the reason for the lack of a duct pressure or fan amperage reading (e.g. the process did not operate that day).
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (h) One (1) DDGS cooling drum, identified as EP 12, approved for construction in 2007, with a maximum throughput rate of 45 tons/hr of DDGS. Of the 50,000 acfm air flow stream from this process, up to a maximum of 30,000 acfm is vented to a baghouse (C70) for particulate control. The baghouse has a design outlet grain loading of 0.005 (grains/cubic feet) and exhausts to Stack S70. The remaining air flow stream is vented to the TO/HRSG systems (C10 or C11) for additional combustion air and is then exhausted to Stack S10.

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

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

D.4.1 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 for the DDGS cooling drum (EP 12):

- (a) The PM/PM-10 emissions from baghouse C70 (stack S70), which is used to control part of the emissions from the DDGS cooling drum, shall not exceed 0.54 lbs/hr.
- (b) The total DDGS produced shall not exceed 392,568 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The VOC emissions from cooling drum baghouse stack S70 shall not exceed 2.79 lbs/hr.

Combined with the PM emissions from other emission units at this source, the PM emissions from the entire source are limited to less than 250 tons/yr. Combined with the PM-10 and VOC emissions from other emission units, the PM-10 and VOC emissions 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.4.2 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from the DDGS cooling drum (EP 12) shall not exceed 43.6 pounds per hour when operating at the maximum process throughput rate of 45 tons per hour.

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

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:

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

D.4.3 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.4.4 Particulate Control

- (a) In order to comply with Condition D.4.1(a), emissions from part of the air stream from the DDGS cooling drum (EP 12) shall be controlled by baghouse C70 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.4.5 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.4.1(a) and D.4.1(c), the Permittee shall perform PM, PM-10, and VOC testing for baghouse C70 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. PM-10 includes filterable and condensable PM-10.

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

D.4.6 Visible Emissions Notations

- (a) Visible emission notations of the baghouse stack exhaust (Stack S70) 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.4.7 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 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.4.8 Record Keeping Requirements

- (a) To document compliance with Condition D.4.1(b), the Permittee shall maintain monthly records of the amount of DDGS produced.
- (b) To document compliance with Condition D.4.6, the Permittee shall maintain records of daily visible emission notations of the DDGS cooling drum baghouse stack exhaust (S70). 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) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.4.10 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.4.1(b) 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.5 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (i) One (1) ethanol loading rack for trucks or railcars, identified as EP 14, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour for truck loading and a maximum throughput rate of 72,000 gallons per hour for railcar loading, controlled by an enclosed flare (C50), which is fueled by natural gas and has a maximum heat input capacity of 12.4 MMBtu/hr, exhausting through Stack S50.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this rack are considered to be affected facilities.

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

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

D.5.1 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 in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The Permittee shall use flare C50 to control the emissions from the ethanol loading rack (EP 14).
- (b) The total denatured ethanol loaded shall not exceed 121,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The total denatured ethanol loaded into trucks shall not exceed 78,650,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (d) The operating hours of the flare C50 shall not exceed 2,500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.
- (e) The ethanol loading rack shall utilize the submerged loading method.
- (f) The railcars and trucks shall not use vapor balance services, when loading ethanol.
- (g) Flare C50 shall be designed as a smokeless flare.
- (h) CO emissions from flare C50 shall not exceed 4.62 lbs/hr.
- (i) The VOC emissions from flare C50 shall not exceed 2.04 lbs/hr.
- (j) The toluene emissions from flare C50 shall not exceed 0.073 lbs/hr.

Combined with the VOC, CO, and HAP emissions from other units, the VOC and CO emissions from the entire source are each limited to less than 100 tons/yr and 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.5.2 VOC Emissions [326 IAC 8-5-6]

Pursuant to 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), the Permittee shall comply with the following:

- (a) The VOC emissions from the ethanol loading rack (EP 14) shall be collected and controlled by enclosed flare C50 when this unit is in operation; and
- (b) The overall efficiency for flare C50 (including the capture efficiency and destruction efficiency) shall be at least 98%.

D.5.3 Standards 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 requirements of Section E.1 for pumps; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines; and valves.

D.5.4 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.5.5 VOC and HAP Control

In order to comply with Conditions D.5.1 and D.5.2, flare C50 shall be in operation and control emissions from the ethanol loading rack (EP 14) at all times that this loading rack is in operation.

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

D.5.6 Flare Pilot Flame

In order to comply with Conditions D.5.1 and D.5.2, the Permittee shall monitor the presence of a flare pilot flame using a thermocouple or other equivalent device to detect the presence of a flame when ethanol loading rack EP 14 is in operation.

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

D.5.7 Record Keeping Requirements

- (a) To document compliance with Condition D.5.1(b), the Permittee shall maintain monthly records of the total amount of denatured ethanol loaded out.
- (b) To document compliance with Condition D.5.1(c), the Permittee shall maintain monthly records of the amount of denatured ethanol loaded into trucks.
- (c) To document compliance with Condition D.5.1(d), the Permittee shall maintain monthly records of the operating hours for the ethanol loading rack (EP 14) and the flare (C50).
- (d) To document compliance with Condition D.5.6, the Permittee shall maintain records of temperature or other parameters sufficient to demonstrate the presence of a pilot flame when loading rack EP 14 is in operation.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.5.8 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.5.1(b), D.5.1(c), and D.5.1(d) 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.6 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (j) One (1) biomethanator operation, identified as EP 15, with four (4) bottles, approved for construction in 2007. The biomethanator operation is controlled by a 6.40 MMBtu/hr biomethanator flare (C60), exhausting to Stack S60. When either of the four (4) DDGS dryers (EP 09) are in use, the biomethanator operation will be vented to the dryers and controlled by either of the recuperative thermal oxidizers (C10 or C11).

(The information describing the process contained in this emissions unit 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 in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

- (a) The biomethanator flare (C60) shall not operate when any of the four (4) DDGS dryers (EP 09) are in operation.
- (b) Biomethanator flare C60 shall be designed as a smokeless flare and the flare shall be turned on when none of the four (4) DDGS dryers (EP 09) are in operation.

Combined with the CO emissions from other emission units, the CO emissions 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.

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

D.6.2 Record Keeping Requirements

- (a) To document compliance with Condition D.6.1(a), the Permittee shall maintain records of the time periods when any of the four (4) DDGS dryers are not in operation and the time period when the biomethanator flare C60 is in operation.
- (b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.7 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities:

- (a) Four (4) denatured ethanol storage tanks, identified as T61, T62, T66, and T67, each with a storage capacity of 1,500,000 gallons and a true vapor of greater than 3.5 kilopascals. Each tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tanks T61, T62, T66, and T67 are considered new affected sources.

- (b) One (1) 200 proof (100%) ethanol storage tank, identified as T63, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T63 is considered a new affected source.

- (c) One (1) denaturant (natural gasoline or unleaded gasoline) storage tank, identified as T64, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal. [326 IAC 8-4-3]

Under NSPS, Subpart Kb, tank T64 is considered a new affected source.

- (d) One (1) 190 proof (95%) ethanol storage tank, identified as T65, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T65 is considered a new affected source.

(The information describing the process contained in this emissions unit 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]

Pursuant to 326 IAC 8-4-3, the Permittee shall comply with the following for Tank T64:

- (a) Pursuant to 326 IAC 8-4-3(b)(1)(B), Tank T64 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, shall be equipped with covers, lids, or seals such that:
- (1) the cover, lid, or seal is in the closed position 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; and
 - (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 T64:
- (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 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 requirements of Section E.3 for Tanks T61 through T67.

D.7.3 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.7.4 Record Keeping Requirements

- (a) To document compliance with Condition D.7.1(c), the Permittee shall maintain the following records for tank T64:
- (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 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(d) The following fermentation operation, identified as EP 03, approved for construction in 2007, with a counter-current CO₂ packed bed scrubber (C40) equipped with a demister as controls for VOC emissions, with an outlet gas flowrate of 11,000 acfm and a maximum scrubbing liquid flowrate of 13,000 gallons of ethanol per hour, and exhausting to Stack S40:

(1) Seven (7) fermenters with a maximum capacity of 807,000 gallons each.

(2) One (1) beer well with a maximum capacity of 1,080,000 gallons.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(f) One (1) distillation process, identified as EP 05, approved for construction in 2007, with a maximum throughput rate of 14,300 gallons of ethanol per hour, controlled by TO/HRSG systems C10 and C11, exhausting through Stack S10, and consisting of the following:

(1) One (1) receiver (blend) tank with a maximum capacity of 470 gallons.

(2) Two (2) slurry tanks with a maximum capacity of 25,000 gallons each.

(3) Two (2) cook tubes with a maximum capacity of 5,200 gallons each.

(4) One (1) flash tank with a maximum capacity of 4,500 gallons.

(5) Two (2) liquefaction tanks with a maximum capacity of 128,400 gallons each.

(6) Two (2) yeast tanks with a maximum capacity of 13,500 gallons each.

(7) One (1) beer column.

(8) One (1) side stripper.

(9) One (1) rectifier column.

(10) One (1) 190 proof condenser.

(11) Six (6) molecular sieves.

(12) One (1) 200 proof condenser.

(13) Six (6) centrifuges.

(14) Two (2) centrate tanks with a maximum capacity of 1,690 gallons each.

(15) Eight (8) evaporators.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

(i) One (1) ethanol loading rack for trucks or railcars, identified as EP 14, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour for truck loading and a maximum throughput rate of 72,000 gallons per hour for railcar loading, controlled by an enclosed flare (C50), which is fueled by natural gas and has a maximum heat input capacity of 12.4 MMBtu/hr, exhausting through Stack S50.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this rack are considered to be affected facilities.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(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 Standards 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 Standards 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.

...

[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]

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§ 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. H₂O 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. H₂O 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 m⁴/(MJ-sec) (metric units)

= 0.087 ft⁴/(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]

...

§ 60.489 List of chemicals produced by affected facilities.

The following chemicals are produced, as intermediates or final products, by process units covered under this subpart. The applicability date for process units producing one or more of these chemicals is January 5, 1981.

CAS No. ^a	Chemical
64–17–5	Ethanol.

^aCAS numbers refer to the Chemical Abstracts Registry numbers assigned to specific chemicals, isomers, or mixtures of chemicals. Some isomers or mixtures that are covered by the standards do not have CAS numbers assigned to them. The standards apply to all of the chemicals listed, whether CAS numbers have been assigned or not.

...

[48 FR 48335, Oct. 18, 1983, as amended at 65 FR 61763, Oct. 17, 2000]

E.1.3 One Time Deadlines Relating to the Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry [40 CFR Part 60, Subpart VV]

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Date of Construction	40 CFR 60.7(a)(1)	pumps; compressors; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines.	Within 30 days after construction was commenced.
Notification of the Date of Initial Startup	40 CFR 60.7(a)(3)	pumps; compressors; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines.	Within 15 days after initial startup.
Initial Performance Test	40 CFR 60.8(a) and 40 CFR 60.485(a)	pumps; compressors; pressure relief devices in gas/vapor service; sampling connection systems; open-ended valves or lines.	Within 60 days after achieving the maximum production rate, but not later than 180 days after initial startup.

SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (e) Two (2) recuperative thermal oxidizers (C10 and C11) with heat recovery steam generator (TO/HRSG) systems, identified as EP 04, approved for construction in 2007, each with a maximum heat input capacity of 122 MMBtu/hr, using natural gas and process waste gases from the DDGS dryers as fuels, each is equipped with low NOx burners and exhausts to Stack S10.

Under NSPS, Subpart Db, TO/HRSG systems C10 and C11 are considered Industrial-Commercial-Institutional Steam Generating Units and are considered to be affected facilities.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(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 TO/HRSG systems C10 and C11, 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 Standards 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 Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, which are incorporated by reference as 326 IAC 12, for TO/HRSG systems C10 and C11 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)).

...

(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).

...

(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).

...

§ 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 (CO₂) 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 SO₂ control 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 SO₂ control 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 $730,000 \text{ J/sec-m}^3$ ($70,000 \text{ Btu/hr-ft}^3$).

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 $730,000 \text{ J/sec-m}^3$ ($70,000 \text{ Btu/hr-ft}^3$) 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).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

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 SO₂ emissions (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 SO₂ emission control, has a SO₂ emission 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 SO₂ emission control, has a SO₂ emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input.

Wet flue gas desulfurization technology means a SO₂ control 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 SO₂.

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.

§ 60.42b Standard for sulfur dioxide (SO₂).

...

(k)(1) Except as provided in paragraphs (k)(2), (k)(3), and (k)(4) 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 commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, natural gas, a mixture of these fuels, or a mixture of these fuels with any other fuels shall cause to be discharged into the atmosphere any gases that contain SO₂ in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 8 percent (0.08) of the potential SO₂ emission rate (92 percent reduction) and 520 ng/J (1.2 lb/MMBtu) heat input.

(2) Units firing only very low sulfur oil and/or a mixture of gaseous fuels with a potential SO₂ emission rate of 140 ng/J (0.32 lb/MMBtu) heat input or less are exempt from the SO₂ emissions limit in paragraph 60.42b(k)(1).

...

§ 60.44b Standard for nitrogen oxides (NO_x).

(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 NO₂) 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

...

(f) Any owner or operator of an affected facility that combusts byproduct/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a NO_x emission limit that shall apply specifically to that affected facility when the byproduct/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the Administrator, such as NO_x emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the Administrator to confirm that the affected facility is unable to comply with the emission limits in paragraph (e) of this section and to determine the appropriate emission limit for the affected facility.

(1) Any owner or operator of an affected facility petitioning for a facility-specific NO_x emission limit under this section shall:

(i) Demonstrate compliance with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, by conducting a 30-day performance test as provided in §60.46b(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

(ii) Demonstrate that the affected facility is unable to comply with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under paragraph (f)(1)(i) of this section.

(2) The NO_x emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) or (l)(1) of this section, as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the Administrator. If the petition is approved by the Administrator, a facility-specific NO_x emission limit will be established at the NO_x emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner that the Administrator determines to be consistent with minimizing NO_x emissions. In lieu of amending this subpart, a letter will be sent to the facility describing the facility-specific NO_x limit. The facility shall use the compliance procedures detailed in the letter and make the letter available to the public. If the Administrator determines it is appropriate, the conditions and requirements of the letter can be reviewed and changed at any point.

...

(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.

...

(l) 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 commenced construction or reconstruction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain NO_x (expressed as NO₂) in excess of the following limits:

(1) If the affected facility combusts coal, oil, or natural gas, or a mixture of these fuels, or with any other fuels: A limit of 86 ng/J (0.20 lb/MMBtu) heat input unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas; or

(2) If the affected facility has a low heat release rate and combusts natural gas or distillate oil in excess of 30 percent of the heat input on a 30-day rolling average from the combustion of all fuels, a limit determined by use of the following formula:

$$E_n = \frac{(0.10 \times H_{go}) + (0.20 \times H_r)}{(H_{go} + H_r)}$$

Where:

E_n = NO_x emission limit, (lb/MMBtu);

H_{go} = 30-day heat input from combustion of natural gas or distillate oil; and

H_r = 30-day heat input from combustion of any other fuel.

(3) After February 27, 2006, units where more than 10 percent of total annual output is electrical or mechanical may comply with an optional limit of 270 ng/J (2.1 lb/MWh) gross energy output, based on a 30-day rolling average. Units complying with this output-based limit must demonstrate compliance according to the procedures of §60.48Da(i) of subpart Da of this part, and must monitor emissions according to §60.49Da(c), (k), through (n) of subpart Da of this part.

...

§ 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.

...

(4) Following the date on which the initial performance test is completed or required to be completed under §60.8, whichever date comes first, the owner or operator of an affected facility that has a heat input capacity of 73 MW (250 MMBtu/hr) or less and that combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall upon request determine compliance with the NO_x standards under §60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, NO_x emissions data collected pursuant to §60.48b(g)(1) or §60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the NO_x emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly NO_x emission data for the preceding 30 steam generating unit operating days.

...

§ 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 O₂ (or CO₂) 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.

...

(ii) As an alternative to meeting the requirements of paragraph (e)(2)(i) of this section, the owner or operator of an affected facility may elect to use the NO_x span values determined according to section 2.1.2 in appendix A to part 75 of this chapter.

...

(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:

(1) Comply with the provisions of paragraphs (b), (c), (d), (e)(2), (e)(3), and (f) of this section; or

(2) Monitor steam generating unit operating conditions and predict NO_x emission rates as specified in a plan submitted pursuant to §60.49b(c).

(h) The owner or operator of a duct burner, as described in §60.41b, that is subject to the NO_x standards of §60.44b(a)(4) or §60.44b(l) is not required to install or operate a continuous emissions monitoring system to measure NO_x emissions.

(i) The owner or operator of an affected facility described in §60.44b(j) or §60.44b(k) is not required to install or operate a CEMS for measuring NO_x emissions.

...

(i) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (j)(4)(i)(A) through (D) of this section.

(A) The CO CEMS must be installed, certified, maintained, and operated according to the provisions in §60.58b(i)(3) of subpart Eb of this part.

(B) Each 1-hour CO emissions average is calculated using the data points generated by the CO CEMS expressed in parts per million by volume corrected to 3 percent oxygen (dry basis).

(C) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. At least two data points per hour must be used to calculate each 1-hour average.

(D) Quarterly accuracy determinations and daily calibration drift tests for the CO CEMS must be performed in accordance with procedure 1 in appendix F of this part.

(ii) You must calculate the 1-hour average CO emissions levels for each steam generating unit operating day by multiplying the average hourly CO output concentration measured by the CO CEMS times the corresponding average hourly flue gas flow rate and divided by the corresponding average hourly heat input to the affected source. The 24-hour average CO emission level is determined by calculating the arithmetic average of the hourly CO emission levels computed for each steam generating unit operating day.

(iii) You must evaluate the preceding 24-hour average CO emission level each steam generating unit operating day excluding periods of affected source startup, shutdown, or malfunction. If the 24-hour average CO emission level is greater than 0.15 lb/MMBtu, you must initiate investigation of the relevant equipment and control systems within 24 hours of the first discovery of the high emission incident and, take the appropriate corrective action as soon as practicable to adjust control settings or repair equipment to reduce the 24-hour average CO emission level to 0.15 lb/MMBtu or less.

(iv) You must record the CO measurements and calculations performed according to paragraph (j)(4) of this section and any corrective actions taken. The record of corrective action taken must include the date and time during which the 24-hour average CO emission level was greater than 0.15 lb/MMBtu, and the date, time, and description of the corrective action.

(5) The affected facility burns only gaseous fuels or fuel oils that contain less than or equal to 0.30 weight percent sulfur and operates according to a written site-specific monitoring plan approved by the appropriate delegated permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard.

...

§ 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 SO₂, 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 O₂ level);

(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 NO₂) (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.

(h) The owner or operator of any affected facility in any category listed in paragraphs (h)(1) or (2) of this section is required to submit excess emission reports for any excess emissions that occurred during the reporting period.

...

(2) Any affected facility that is subject to the NO_x standard of §60.44b, and that:

(i) Combusts natural gas, distillate oil, or residual oil with a nitrogen content of 0.3 weight percent or less; or

(ii) Has a heat input capacity of 73 MW (250 MMBtu/hr) or less and is required to monitor NO_x emissions on a continuous basis under §60.48b(g)(1) or steam generating unit operating conditions under §60.48b(g)(2).

...

(4) For purposes of §60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average NO_x emission rate, as determined under §60.46b(e), that exceeds the applicable emission limits in §60.44b.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for NO_x under §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

...

(o) All records required under this section shall be maintained by the owner or operator of the affected facility for a period of 2 years following the date of such record.

...

(v) The owner or operator of an affected facility may submit electronic quarterly reports for SO₂ 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.

...

E.2.3 One Time Deadlines Relating to the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units [40 CFR Part 60, Subpart Db]

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Date of Construction	40 CFR 60.7(a)(1)	TO/HRSG Systems C10 and C11	Within 30 days after construction was commenced.
Notification of the Date of Initial Startup	40 CFR 60.7(a)(3)	TO/HRSG Systems C10 and C11	Within 15 days after initial startup.
Initial Performance Test	40 CFR 60.8(a), 40 CFR 60.46b(e)(1)	TO/HRSG Systems C10 and C11	First 30 consecutive operating days of the steam generating unit. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate, but not later than 180 days after initial startup.

E.2.4 State Only Requirements for Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS) [326 IAC 12-1]

Pursuant to 326 IAC 12-1-1, the Permittee shall comply with the provisions of the July 1, 2006 version of 40 CFR Part 60, Subpart Db, which are incorporated by reference as 326 IAC 12-1-1, for the Industrial-Commercial-Institutional Steam Generating Units, identified as TO/HRSG Systems C10 and C11. The Permittee shall comply with the provisions of 40 CFR Part 60, Subpart Db, as listed in Condition E.2.2, except the Permittee shall follow the requirements of the July 1, 2006 version, as incorporated into 326 IAC 12-1-1, as specified as follows:

Subpart Db—Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

§ 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 MW (100 million Btu/hour).

...

(g) In delegating implementation and enforcement authority to a State under section 111(c) of the 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).

...

§ 60.41b Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the 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 levels greater than 50 percent or carbon monoxide levels greater than 10 percent are not by product/waste for the purpose of this subpart.

Chemical manufacturing plants means industrial plants which 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 D388–77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—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, 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.

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 heat recovery 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 D396-78, 89, 90, 92, 96, or 98, Standard Specifications for Fuel Oils (incorporated by reference - see §60.17).

Dry flue gas desulfurization technology means a sulfur dioxide control 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 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 heat recovery steam generating unit.

Emerging technology means any sulfur dioxide control 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 40 CFR 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.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat input 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/hour) 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-m³ (70,000 Btu/hour-ft³).

Lignite means a type of coal classified as lignite A or lignite B by the American Society of Testing and Materials in ASTM D388-77, 90, 91, 95, or 98a, Standard Specification for Classification of Coals by Rank (IBR—see §60.17).

Low heat release rate means a heat release rate of 730,000 J/sec-m³ (70,000 Btu/hour-ft³) 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) liquid petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835-82, 86, 87, 91, or 97, "Standard Specification for Liquid Petroleum Gases" (IBR—see §60.17).

Noncontinental area means the State of Hawaii, the Virgin Islands, Guam, American Samoa, the Commonwealth of Puerto Rico, or the Northern Mariana Islands.

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 sulfur dioxide emissions (ng/J, lb/million Btu 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 which 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 D396–78, Standard Specifications for Fuel Oils (IBR—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 to produce steam or to heat 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 for units constructed, reconstructed, or modified on or before February 28, 2005, means an oil that contains no more than 0.5 weight percent sulfur or that, when combusted without sulfur dioxide emission control, has a sulfur dioxide emission 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 sulfur dioxide emission control, has a sulfur dioxide emission rate equal to or less than 140 ng/J (0.32 lb/MMBtu) heat input.

Wet flue gas desulfurization technology means a sulfur dioxide control 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 particulate matter or sulfur dioxide.

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.

(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 of this part, 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 nitrogen oxides (expressed as NO₂) in excess of the following emission limits:

Fuel/Steam generating unit type	Nitrogen oxide emission limits ng/J (lb/million Btu) (expressed as NO ₂) heat input
(1) Natural gas and distillate oil, except (4):	
(i) Low heat release rate	43 (0.10)
(ii) High heat release rate	86 (0.20)

...

(f) Any owner or operator of an affected facility that combusts by product/waste with either natural gas or oil may petition the Administrator within 180 days of the initial startup of the affected facility to establish a nitrogen oxides emission limit which shall apply specifically to that affected facility when the by product/waste is combusted. The petition shall include sufficient and appropriate data, as determined by the Administrator, such as nitrogen oxides emissions from the affected facility, waste composition (including nitrogen content), and combustion conditions to allow the Administrator to confirm that the affected facility is unable to comply with the emission limits in paragraph (e) of this section and to determine the appropriate emission limit for the affected facility.

(1) Any owner or operator of an affected facility petitioning for a facility-specific nitrogen oxides emission limit under this section shall:

(i) Demonstrate compliance with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of this section, as appropriate, by conducting a 30-day performance test as provided in §60.46b(e). During the performance test only natural gas, distillate oil, or residual oil shall be combusted in the affected facility; and

(ii) Demonstrate that the affected facility is unable to comply with the emission limits for natural gas and distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of this section, as appropriate, when gaseous or liquid byproduct/waste is combusted in the affected facility under the same conditions and using the same technological system of emission reduction applied when demonstrating compliance under paragraph (f)(1)(i) of this section.

(2) The nitrogen oxides emission limits for natural gas or distillate oil in paragraph (a)(1) of this section or for residual oil in paragraph (a)(2) of this section, as appropriate, shall be applicable to the affected facility until and unless the petition is approved by the Administrator. If the petition is approved by the Administrator, a facility-specific nitrogen oxides emission limit will be established at the nitrogen oxides emission level achievable when the affected facility is combusting oil or natural gas and byproduct/waste in a manner that the Administrator determines to be consistent with minimizing nitrogen oxides emissions.

(h) For purposes of paragraph (i) of this section, the nitrogen oxide standards under this section apply at all times including periods of startup, shutdown, or malfunction.

...

(l) 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 which commenced construction or reconstruction after July 9, 1997 shall cause to be discharged into the atmosphere from that affected facility any gases that contain nitrogen oxides (expressed as NO₂) in excess of the following limits:

(1) If the affected facility combusts coal, oil, or natural gas, or a mixture of these fuels, or with any other fuels: A limit of 86 ng/J_i (0.20 lb/million Btu) heat input unless the affected facility has an annual capacity factor for coal, oil, and natural gas of 10 percent (0.10) or less and is subject to a federally enforceable requirement that limits operation of the facility to an annual capacity factor of 10 percent (0.10) or less for coal, oil, and natural gas; or

(2) If the affected facility has a low heat release rate and combusts natural gas or distillate oil in excess of 30 percent of the heat input from the combustion of all fuels, a limit determined by use of the following formula:

$$E_n = [(0.10 * H_{go}) + (0.20 * H_r)] / (H_{go} + H_r)$$

Where:

E_n is the NO_x emission limit, (lb/million Btu),

H_{go} is the heat input from combustion of natural gas or distillate oil, and

H_r is the heat input from combustion of any other fuel.

(3) After February 27, 2006, units may comply with an optional limit of 270 ng/J (2.1 lb/MWh) gross energy output, based on a 30-day rolling average. Units complying with this output-based limit must demonstrate compliance according to the procedures of §60.46a (i)(1), and must monitor emissions according to §60.47a(c)(1), (c)(2), (k), and (l).

...

§ 60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

...

(c) Compliance with the nitrogen oxides 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 nitrogen oxides 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 nitrogen oxides under §60.48(b).

(1) For the initial compliance test, nitrogen oxides 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 nitrogen oxides 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.

...

(4) Following the date on which the initial performance test is completed or required to be completed under §60.8 of this part, whichever date comes first, the owner or operator of an affected facility which has a heat input capacity of 73 MW (250 million Btu/hour) or less and which combusts natural gas, distillate oil, or residual oil having a nitrogen content of 0.30 weight percent or less shall upon request determine compliance with the nitrogen oxides standards under §60.44b through the use of a 30-day performance test. During periods when performance tests are not requested, nitrogen oxides emissions data collected pursuant to §60.48b(g)(1) or §60.48b(g)(2) are used to calculate a 30-day rolling average emission rate on a daily basis and used to prepare excess emission reports, but will not be used to determine compliance with the nitrogen oxides emission standards. A new 30-day rolling average emission rate is calculated each steam generating unit operating day as the average of all of the hourly nitrogen oxides emission data for the preceding 30 steam generating unit operating days.

...

§ 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 nitrogen oxides standard under §60.44b shall comply with either paragraphs (b)(1) or (b)(2) of this section.

(1) Install, calibrate, maintain, and operate a continuous monitoring system, and record the output of the system, for measuring nitrogen oxides emissions discharged to the atmosphere; or

...

(c) The continuous monitoring systems required under paragraph (b) of this section shall be operated and data recorded during all periods of operation of the affected facility except for continuous monitoring system breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(d) The 1-hour average nitrogen oxides emission rates measured by the continuous nitrogen oxides 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 nitrogen oxides is determined as follows:

Fuel	Span values for nitrogen oxides (PPM)
Natural gas	500

...

(f) When nitrogen oxides emission data are not obtained because of continuous monitoring system breakdowns, repairs, calibration checks and zero and span adjustments, emission data will be obtained by using standby monitoring systems, Method 7, Method 7A, 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.

...

§ 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 sulfur dioxide, particulate matter, and/or nitrogen oxides 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. 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 nitrogen oxides 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. The plan shall:

(1) Identify the specific operating conditions to be monitored and the relationship between these operating conditions and nitrogen oxides emission rates (i.e., ng/J or lbs/million Btu 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 oxygen level);

(2) Include the data and information that the owner or operator used to identify the relationship between nitrogen oxides emission rates and these operating conditions;

(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).

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.

...

(g) Except as provided under paragraph (p) of this section, the owner or operator of an affected facility subject to the nitrogen oxides 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 nitrogen oxides emission rates (expressed as NO₂) (ng/J or lb/million Btu heat input) measured or predicted.

(3) The 30-day average nitrogen oxides emission rates (ng/J or lb/million Btu 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 nitrogen oxides emission rates are in excess of the nitrogen oxides 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 continuous monitoring system.

(9) Description of any modifications to the continuous monitoring system that could affect the ability of the continuous monitoring system to comply with Performance Specification 2 or 3.

(10) Results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1.

(h) The owner or operator of any affected facility in any category listed in paragraphs (h) (1) or (2) of this section is required to submit excess emission reports for any excess emissions which occurred during the reporting period.

...

(2) Any affected facility that is subject to the nitrogen oxides standard of §60.44b, and that

(i) Combusts natural gas, distillate oil, or residual oil with a nitrogen content of 0.3 weight percent or less, or

(ii) Has a heat input capacity of 73 MW (250 million Btu/hour) or less and is required to monitor nitrogen oxides emissions on a continuous basis under §60.48b(g)(1) or steam generating unit operating conditions under §60.48b(g)(2).

...

(4) For purposes of §60.48b(g)(1), excess emissions are defined as any calculated 30-day rolling average nitrogen oxides emission rate, as determined under §60.46b(e), which exceeds the applicable emission limits in §60.44b.

(i) The owner or operator of any affected facility subject to the continuous monitoring requirements for nitrogen oxides under §60.48(b) shall submit reports containing the information recorded under paragraph (g) of this section.

...

SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities:

- (a) Four (4) denatured ethanol storage tanks, identified as T61, T62, T66, and T67, each with a storage capacity of 1,500,000 gallons and a true vapor of greater than 3.5 kilopascals. Each tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tanks T61, T62, T66, and T67 are considered new affected sources.

- (b) One (1) 200 proof (100%) ethanol storage tank, identified as T63, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T63 is considered a new affected source.

- (c) One (1) denaturant (natural gasoline or unleaded gasoline) storage tank, identified as T64, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal. [326 IAC 8-4-3]

Under NSPS, Subpart Kb, tank T64 is considered a new affected source.

- (d) One (1) 190 proof (95%) ethanol storage tank, identified as T65, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T65 is considered a new affected source.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(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 T61 through T67, 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 T61 through T67 as follows:

Subpart Kb—Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984

Source: 52 FR 11429, Apr. 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 (m³) 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 m³ 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 m³ but less than 151 m³ storing a liquid with a maximum true vapor pressure less than 15.0 kPa.

...

[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 liquefied 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 m³ 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 m³ but less than 151 m³ 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.

...

[52 FR 11429, Apr. 8, 1987, as amended at 62 FR 52641, Oct. 8, 1997]

§ 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.

...

[52 FR 11429, Apr. 8, 1987, as amended at 54 FR 32973, Aug. 11, 1989]

...

§ 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 m³ 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 m³ but less than 151 m³ 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 m³ 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 m³ but less than 151 m³ 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 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]

E.3.3 One Time Deadlines Relating to the Standards of Performance for Volatile Organic Liquid Storage Vessels for which Construction, Reconstruction, or Modification Commenced after July 23, 1984 [40 CFR Part 60, Subpart Kb]

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Date of Construction	40 CFR 60.7(a)(1)	Tanks T61 through T67	Within 30 days after construction was commenced.
Notification of the Date of Initial Startup	40 CFR 60.7(a)(3)	Tanks T61 through T67	Within 15 days after initial startup.
First Visual Inspection	40 CFR 60.113b(a)(1)	Tanks T61 through T67	Prior to filling the storage tanks.
Notify Administrator of Initial Filling of Storage Tanks	40 CFR 60.113b(a)(5)	Tanks T61 through T67	At least 30 days prior to initial filling.

SECTION E.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Insignificant Activities:

- (e) One (1) diesel-fired emergency fire water pump, identified as EP 16, with a maximum capacity of 300 HP, with a manufacturer's date of after July 1, 2006, and a displacement of less than 30 liters per cylinder, to be installed upon issuance of the permit.

Under NSPS, Subpart IIII, the emergency fire water pump (EP 16) is considered an affected facility.

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

New Source Performance Standards (NSPS) Requirements [326 IAC 2-8-4(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 the emergency fire pump EP 16, 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 Requirements [40 CFR Part 60, Subpart IIII]

Pursuant to 40 CFR Part 60, Subpart IIII, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart IIII, which are incorporated by reference as 326 IAC 12, for the one (1) diesel-fired emergency fire pump (EP 16) as specified as follows:

Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

Source: 71 FR 39172, July 11, 2006, unless otherwise noted.

§ 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:

...

(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.

...

(c) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or 40 CFR part 71, provided you are not required to obtain a permit under 40 CFR 70.3(a) or 40 CFR 71.3(a) for a reason other than your status as an area source under this subpart. Notwithstanding the previous sentence, you must continue to comply with the provisions of this subpart applicable to area sources.

...

§ 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?

...

(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.

...

§ 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.

§ 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.

...

§ 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.

...

§ 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.

...

§ 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.

...

§ 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.

§ 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).

...

Table 4 to Subpart IIII of Part 60.—Emission Standards for Stationary Fire Pump Engines

[As stated in §§60.4202(d) and 60.4205(c), you must comply with the following emission standards for stationary fire pump engines]

Maximum engine power	Model year(s)	NMHC + NO _x	CO	PM
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)

...

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).

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§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	

E.4.3 One Time Deadlines Relating to the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines [40 CFR Part 60, Subpart IIII]

Requirement	Rule Cite	Affected Facility	Deadline
Notification of the Date of Construction	40 CFR 60.4214(b)	Emergency Fire Pump (EP 16).	Not required for emergency stationary internal combustion engines
Notification of the Date of Initial Startup	40 CFR 60.4214(b)	Emergency Fire Pump (EP 16).	Not required for emergency stationary internal combustion engines
Initial Performance Test	40 CFR 60.4218	Emergency Fire Pump (EP 16).	Not required because the engine displacement is less than 30 liters per cylinder

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
CERTIFICATION**

Source Name: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085

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: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085

This form consists of 2 pages

Page 1 of 2

- | |
|--|
| <p><input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12)</p> <ul style="list-style-type: none">• 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: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085
Facility: Grain Receiving and Handling Operations (EP 01)
Parameter: The amount of grain received
Limit: Less than 1,210,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085
Facility: DDGS Cooling Drum (EP 12); DDGS Handling and Loadout Operations (EP 13)
Parameter: DDGS Production Rate
Limit: Less than 392,568 tons per twelve (12) consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085
Facility: Ethanol Loading Rack (EP 14)
Parameter: Total Denatured Ethanol Loaded Out
Limit: Less than 121,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085
Facility: Ethanol Loading Rack (EP 14)
Parameter: Total Denatured Ethanol (Truck Loading)
Limit: Less than 78,650,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085
Facility: Flare C50
Parameter: Operating Hours
Limit: Less than 2,500 hours per twelve (12) consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	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: Morning Star Energy, LLC
Source Address: 12222 S. State Road 63, Clinton, Indiana 47842
Mailing Address: 6600 Karyn Drive, Avon, IN 46123
FESOP Permit No.: F165-24677-00085

Months: _____ to _____ Year: _____

Page 1 of 2

<p>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 ΔNo deviations occurred this reporting period@.</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> 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
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Morning Star Energy, LLC
12222 S. State Road 63
Clinton, Indiana 47842

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 Morning Star Energy, LLC located at 12222 S. State Road 63, Clinton, Indiana, 47842, has constructed the ethanol plant, in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on April 24, 2007, and as permitted pursuant to **FESOP No. 165-24677-00085**, Plant ID No. 165-00085 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)

Attachment A

FUGITIVE DUST CONTROL PLAN

Morning Star Energy, LLC
12222 South State Road 63
Clinton, Indiana 47842

Morning Star Energy has submitted an air permit application to construct an ethanol production facility near Clinton, Vermillion County, Indiana. Upon completion, the ethanol facility will use approximately 43,214,287 bushels of corn to produce 121 million gallons of denatured ethanol, up to 392,568 tons of Dried Distillers Grains and Solubles, and 352,024 tons of Wet Distillers Grains and Solubles per year.

Indiana Administrative Code (IAC), Title 326, Article 6, Rule 5 requires facilities to submit and adhere to a Fugitive Dust Control Plan (FDCP) designed to identify sources of fugitive dust and detail control measures for fugitive particulate matter (PM) emissions generated from the facility. Morning Star Energy has submitted this FDCP to the Indiana Department of Environmental Management (IDEM) as a supplement to the permit application for approval.

Identification of Sources

Fugitive PM emissions can generally be classified coming from one of three processes: Grain Handling/Receiving, DDG Handling/Loading, and Internal Haul Roads. Each process is detailed below.

- (1) Grain, primarily corn, is received by truck or railcar. Grain is unloaded into a receiving pit. Prior to use, the grain is mechanically conveyed to concrete storage bins for storage. From the storage bins, grain is conveyed to the scalping milling process where hammermills break the corn down into a fine powder suitable for use in ethanol production. Fugitive emissions can be generated from:
 - Grain hauling
 - Grain unloading
 - Grain conveying
 - Grain storage
 - Grain milling

- (2) The distillation process removes the ethanol from the beer, non-fermentable corn solids, and water. The residue mash (whole stillage) leaving distillation is transferred from the base of the distillation column to the stillage processing area. The whole stillage then passes through a centrifuge process to remove the majority of the water. The underflow from the centrifuge is called Wet Distillers Grains (WDGS). WDGS, also called wet cake, can be directly loaded to trucks for distribution to consumers. It can also be partially dried into a product known as modified wet cake. Neither product generates fugitive PM dust emissions. However, the WDGS can be dried to approximately 10% moisture resulting in product called Dried Distillers Grains and Solubles (DDGS). DDGS production does generate fugitive PM emissions and could likely come from the following sources:
 - DDGS conveying
 - DDGS dump pit
 - DDGS storage
 - DDGS loading
 - DDGS transport

- (3) Fugitive PM emissions are generated from truck traffic transporting loads of grain, denaturant, denatured ethanol and DDGS/WDGS to and from the facility. The majority of the fugitive PM emissions are generated from product loading. Other vehicular traffic does occur on the paved roads, including employee and visitor traffic, and other deliveries. The emissions from non-product related traffic is minor, and this traffic mostly occurs on the road into and out of the plant and in the main parking lot area. Estimated truck traffic as calculated in the potential to emit is detailed below in order to provide an idea of estimated truck traffic for the major product deliveries:

- Denaturant – 807 trips per year
- Denatured ethanol – 10,478 trips per year
- Grain – 43,560 trips per year
- DDGS – 15,703 trips per year
- WDGS – 14,081 trips per year

Fugitive Emission Control Measures

Several methods of control will be used at Morning Star Energy to control PM fugitive emissions as described below:

Grain Processing

- (1) Grain Hauling - A small amount of fugitives are generated from hauling grain. All trucks transporting grain to and from the plant will be covered by a tarp or similar cover from the point the truck enters the plant until it reaches the point of unloading.
- (2) Grain Unloading - Grain delivered to the facility via truck and railcar will be unloaded within the grain receiving building. This is an enclosed building operating with a choked flow ventilation creating negative pressure. Also, emissions generated within this building will be controlled with a high efficiency fabric filter baghouse (grain unloading baghouse – C20).
- (3) Grain Conveyors - All conveyors are enclosed and ventilated to the grain unloading baghouse (C20).
- (4) Grain Storage - Grain will be stored in six (6) concrete storage silos. Storage bins have a negative pressure and emissions will be controlled by the hammermill baghouse (C30).
- (5) Grain Milling - The plant will have four (4) hammermills which will mill the grain into a fine powder. Milling occurs within an enclosed space and emissions will be controlled by a high efficiency baghouse.

DDGS Processing

- (1) DDGS Conveyors - All conveyors are enclosed and ventilated to the DDGS loading baghouse (C90).
- (2) DDGS Dump Pit - PM emissions from the DDGS dump/pit auger are controlled with an aspirated ventilation system coupled with a high efficiency fabric filter baghouse (C90).
- (3) DDGS Storage - DDGS will be stored in four (4) storage silos or within an enclosed building. Storage bins have a negative pressure and emissions will be controlled by the DDGS loading baghouse (C90).

- (4) DDGS Loading - DDGS are loaded into truck or rail for shipment off site. DDGS loading occurs within an enclosed building operating with a choked flow ventilation creating negative pressure. Also, emissions generated within this building will be controlled with a high efficiency fabric filter baghouse (DDGS loading baghouse - C90).
- (5) DDGS hauling - All trucks transporting DDGS from the plant will be covered by a tarp or similar cover from the point the truck leaves the loading point to the facility exit.

Internal Haul Roads

- (1) All internal haul roads will be paved.
- (2) Maximum vehicle speed along the roadways will be limited to 10 mph.
- (3) Product loading limitations will be set as calculated in the potential to emit calculations for products from the site.
- (4) A road sweeping program will be implemented at the plant as necessary to remove mud, dirt or other sediment from the roadways. This will be done with brooms or mechanical sweeping as necessary.

Documentation

Records shall be kept and maintained at the facility that document control measures detailed within this plan. For baghouses, records will be kept on the inspection and maintenance of the baghouses. For the haul roads, records will be maintained on when and by what method the roads are swept. These records will be made readily available to IDEM for review upon request by the agency.

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document (TSD) for a New Source Review
and Federally Enforceable State Operating Permit (FESOP)**

Source Description and Location

Source Name: Morning Star Energy, LLC
Source Location: 12222 S. State Road 63, Clinton, IN 47842
County: Vermillion
SIC Code: 2869
Operation Permit No.: F165-24677-00085
Permit Reviewer: Tanya White/EVP

The OAQ has received an application from Morning Star Energy, LLC related to the construction and operation of a fuel grade ethanol (ethyl alcohol) production plant.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Vermillion County.

Pollutant	Status
PM-10	Attainment
PM2.5	Attainment
SO ₂	Attainment
NO _x	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Vermillion County has been classified as 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 PM-10 emissions as a surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) 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 emissions and NOx emissions are considered when evaluating the rule applicability relating to ozone. Vermillion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions 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) Vermillion County has been classified as attainment or unclassifiable in Indiana for all other criteria 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.

- (d) Fugitive Emissions
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are not counted toward determination of PSD applicability.

Description of New Source Review

The Office of Air Quality (OAQ) has reviewed a new source review application, submitted by Morning Star Energy, LLC on April 24, 2007, related to the construction and operation of a 121 million gallon per year fuel grade ethanol (ethyl alcohol) production plant.

The application includes information relating to the approval and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

- (a) The following grain receiving and handling operations, identified as EP 01, approved for construction in 2007, equipped with a baghouse (C20) and choked flow systems for control of particulate emissions (PM/PM-10). The baghouse has an outlet gas flowrate of 48,000 acfm and an outlet grain loading of 0.005 (grains/cubic feet), and exhausts to Stack S20:
- (1) Grain unloading operations consisting of truck receiving operations, with a maximum throughput rate of 20,000 bushels of grain per hour for each pit and railcar receiving operations, with a maximum throughput rate of 40,000 bushels of grain per hour for each pit. The grain unloading operations include two unloading pits to receive grain from trucks, two unloading pits to receive wet grain, and one unloading pit to receive grain from railcars. The receiving pits are also vented to the baghouse C20.
 - (2) One (1) grain elevator with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (3) One (1) grain storage bin filler conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (4) Six (6) grain storage bins with a maximum storage capacity of 500,000 bushels of grain each and a maximum throughput rate of 20,000 bushels of grain per hour.
 - (5) One (1) storage bin emptying conveyor with a maximum throughput rate of 6,000 bushels of grain per hour.
 - (6) One (1) grain elevator with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (7) One (1) grain day bin filler conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (8) One (1) grain day storage bin with a maximum storage capacity of 10,000 bushels of grain and a maximum throughput rate of 20,000 bushels per hour.
 - (9) Two (2) grain scalpings, each with a maximum throughput rate of 6,000 bushels of grain per hour.

- (b) The following grain milling operations, identified as EP 02, approved for construction in 2007, equipped with a baghouse (C30) for control of particulate emissions (PM/PM-10). The baghouse has an outlet gas flowrate of 28,000 acfm and an outlet grain loading of 0.005 (grains/cubic feet), and exhausts to Stack S30:
- (1) One (1) hammermill feed conveyor with a maximum throughput rate of 20,000 bushels of grain per hour.
 - (2) Four (4) hammermills each with a maximum throughput rate of 6,000 bushels of grain per hour.
- (c) One (1) DDGS handling and loadout operation, identified as EP 13, approved for construction in 2007, with a maximum throughput rate of 500 tons per hour, controlled by a baghouse (C90) with an outlet gas flowrate of 9,100 acfm and an outlet grain loading of 0.005 (grains/cubic feet), exhausting to Stack S90, and consisting of the following:
- (1) Four (4) DDGS storage bins, equipped with loadout spouts controlled by choked flow systems, each with a maximum storage capacity of 4,000 tons and a combined maximum capacity of 500 tons per hour of flat storage.
- (d) The following fermentation operation, identified as EP 03, approved for construction in 2007, with a counter-current CO₂ packed bed scrubber (C40) equipped with a demister as controls for VOC emissions, with an outlet gas flowrate of 11,000 acfm and a maximum scrubbing liquid flowrate of 13,000 gallons of ethanol per hour, and exhausting to Stack S40:
- (1) Seven (7) fermenters with a maximum capacity of 807,000 gallons each.
 - (2) One (1) beer well with a maximum capacity of 1,080,000 gallons.
- Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.
- (e) Two (2) recuperative thermal oxidizers (C10 and C11) with heat recovery steam generator (TO/HRSG) systems, identified as EP 04, approved for construction in 2007, each with a maximum heat input capacity of 122 MMBtu/hr, using natural gas and process waste gases from the DDGS dryers as fuels, each is equipped with low NOx burners and exhausts to Stack S10.
- Under NSPS, Subpart Db, TO/HRSG systems C10 and C11 are considered Industrial-Commercial-Institutional Steam Generating Units and are considered to be affected facilities.
- (f) One (1) distillation process, identified as EP 05, approved for construction in 2007, with a maximum throughput rate of 14,300 gallons of ethanol per hour, controlled by TO/HRSG systems C10 and C11, exhausting through Stack S10, and consisting of the following:
- (1) One (1) receiver (blend) tank with a maximum capacity of 470 gallons.
 - (2) Two (2) slurry tanks with a maximum capacity of 25,000 gallons each.
 - (3) Two (2) cook tubes with a maximum capacity of 5,200 gallons each.
 - (4) One (1) flash tank with a maximum capacity of 4,500 gallons.
 - (5) Two (2) liquefaction tanks with a maximum capacity of 128,400 gallons each.
 - (6) Two (2) yeast tanks with a maximum capacity of 13,500 gallons each.
 - (7) One (1) beer column.
 - (8) One (1) side stripper.

- (9) One (1) rectifier column.
- (10) One (1) 190 proof condenser.
- (11) Six (6) molecular sieves.
- (12) One (1) 200 proof condenser.
- (13) Six (6) centrifuges.
- (14) Two (2) centrate tanks with a maximum capacity of 1,690 gallons each.
- (15) Eight (8) evaporators.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (g) Four (4) natural gas-fired dried distillers grains with solubles (DDGS) dryers, identified as EP 09, approved for construction in 2007, each equipped with low NOx burners, each with a heat input rating of 45 MMBtu/hr and with a combined maximum DDGS throughput rate of 45 tons per hour, controlled by the two (2) TO/HRSG systems (C10 and C11), and exhausting to Stack S10.
- (h) One (1) DDGS cooling drum, identified as EP 12, approved for construction in 2007, with a maximum throughput rate of 45 tons/hr of DDGS. Of the 50,000 acfm air flow stream from this process, up to a maximum of 30,000 acfm is vented to a baghouse (C70) for particulate control. The baghouse has a design outlet grain loading of 0.005 (grains/cubic feet) and exhausts to Stack S70. The remaining air flow stream is vented to the TO/HRSG systems (C10 or C11) for additional combustion air and is then exhausted to Stack S10.
- (i) One (1) ethanol loading rack for trucks or railcars, identified as EP 14, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour for truck loading and a maximum throughput rate of 72,000 gallons per hour for railcar loading, controlled by an enclosed flare (C50), which is fueled by natural gas and has a maximum heat input capacity of 12.4 MMBtu/hr, exhausting through Stack S50.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this rack are considered to be affected facilities.

- (j) One (1) biomethanator operation, identified as EP 15, with four (4) bottles, approved for construction in 2007. The biomethanator operation is controlled by a 6.40 MMBtu/hr biomethanator flare (C60), exhausting to Stack S60. When either of the four (4) DDGS dryers (EP 09) are in use, the biomethanator operation will be vented to the dryers and controlled by either of the recuperative thermal oxidizers (C10 or C11).

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Four (4) denatured ethanol storage tanks, identified as T61, T62, T66, and T67, each with a storage capacity of 1,500,000 gallons and a true vapor of greater than 3.5 kilopascals. Each tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tanks T61, T62, T66, and T67 are considered new affected sources.

- (b) One (1) 200 proof (100%) ethanol storage tank, identified as T63, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T63 is considered a new affected source.

- (c) One (1) denaturant (natural gasoline or unleaded gasoline) storage tank, identified as T64, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal. [326 IAC 8-4-3]

Under NSPS, Subpart Kb, tank T64 is considered a new affected source.

- (d) One (1) 190 proof (95%) ethanol storage tank, identified as T65, with a storage capacity of 200,000 gallons and a true vapor of greater than 3.5 kilopascals. The tank is equipped with a double deck floating roof, a vapor mounted primary rim seal, and a secondary rim seal.

Under NSPS, Subpart Kb, tank T65 is considered a new affected source.

- (e) One (1) diesel-fired emergency fire water pump, identified as EP 16, with a maximum capacity of 300 HP, with a manufacturer's date of after July 1, 2006, and a displacement of less than 30 liters per cylinder, to be installed upon issuance of the permit.

Under NSPS, Subpart IIII, the emergency fire water pump (EP 16) is considered an affected facility.

- (f) One (1) cooling tower, identified as EP 11, with a design circulation rate of 3,000,000 gallons per hour, equipped with four (4) pumps/cells with a maximum pump rate of 375,000 gallons per hour for each cell. The cooling tower is equipped with a drift eliminator for reducing the drift rate, with manufacturer's guaranteed drift rate of 0.005% or less of the circulating water flow, and exhausting to Stack S80.
- (g) One (1) corrosion inhibitor tank with a storage capacity of 3,000 gallons and storing low vapor pressure proprietary ingredients with less than 10% Xylene.
- (h) Activities or emission units:
 - (1) not regulated by a NESHAP, whose potential uncontrolled emissions are equal to or less than one (1) pound per day on an emission unit basis for any single HAP or combination of HAPs.
 - (2) for which the potential uncontrolled emissions meet the exemption levels specified below:
 - (A) For lead or lead compounds measured as elemental lead, the exemption level is six-tenths (0.6) ton per year or three and twenty-nine hundredths (3.29) pounds per day.
 - (B) For carbon monoxide (CO), the exemption limit is twenty-five (25) pounds per day.
 - (C) For sulfur dioxide, the exemption level is five (5) pounds per hour or twenty-five (25) pounds per day.
 - (D) For volatile organic compounds (VOC), the exemption limit is three (3) pounds per hour or fifteen (15) pounds per day.
 - (E) For nitrogen oxides (NOx), the exemption limit is five (5) pounds per hour or twenty-five (25) pounds per day.
 - (3) For an emission unit or activity with potential uncontrolled emissions of particulate matter with an aerodynamic diameter less than or equal to ten (10) micrometers (PM-10), the exemption level is either five (5) pounds per hour or twenty-five (25) pounds per day.

- (i) Water related activities including:
 - (1) Production of hot water for on-site personal use not related to any industrial or production process.
 - (2) Water treatment activities used to provide potable and process water for the plant, excluding any activities associated with wastewater treatment.
 - (3) Steam traps, vents, leaks and safety relief valves.
 - (4) Demineralized water tanks and demineralizer vents.
 - (5) Boiler water treatment operations, not including cooling towers.
 - (6) Oxygen scavenging (de-aeration) of water.

- (j) Combustion activities including the following:
 - (1) Portable electrical generators that can be moved by hand from one location to another. "Moved by hand" means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device.
 - (2) Fuel use related to food preparation for on-site consumption.
 - (3) Combustion emissions from propulsion of mobile sources.

- (k) Ventilation and venting related equipment including the following:
 - (1) Ventilation exhaust, central chiller water systems, refrigeration and air conditioning equipment, not related to any industrial or production process, including natural draft hoods or ventilating systems that do not remove air pollutants.
 - (2) Stack and vents from plumbing traps used to prevent the discharge of sewer gases, handling domestic sewage only, excluding those at wastewater treatment plants or those handling any industrial waste.
 - (3) Vents from continuous emissions monitors and other analyzers.
 - (4) Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.
 - (5) Air vents from air compressors.
 - (6) Vents for air cooling of electric motors provided the air does not commingle with regulated air pollutants.

- (l) Activities related to routine fabrication, maintenance and repair of buildings, structures, equipment or vehicles at the source where air emissions from those activities would not be associated with any commercial production process including the following:
 - (1) Activities associated with the repair and maintenance of paved and unpaved roads, including paving or sealing, or both, of parking lots and roadways.
 - (2) Painting, including interior and exterior painting of buildings, and solvent use, excluding degreasing operations utilizing halogenated organic solvents.
 - (3) Brazing, soldering, or welding operations and associated equipment.
 - (4) Portable blast-cleaning equipment with enclosures.
 - (5) Blast-cleaning equipment using water as the suspension agent and associated equipment.
 - (6) Batteries and battery charging stations, except at battery manufacturing plants.
 - (7) Lubrication, including hand-held spray can lubrication, dipping metal parts into lubricating oil, and manual or automated addition of cutting oil in machining operations.
 - (8) Non-asbestos insulation installation or removal.
 - (9) Instrument air dryer and filter maintenance.

- (m) Activities performed using hand-held equipment including the following:
 - (1) Application of hot melt adhesives with no VOC in the adhesive formulation.
 - (2) Buffing.
 - (3) Cutting, excluding cutting torches.
 - (4) Drilling.
 - (5) Grinding.
 - (6) Machining wood, metal, or plastic.
 - (7) Polishing.
 - (8) Sanding.
 - (9) Sawing.
 - (10) Turning wood, metal, or plastic.
 - (11) Surface grinding.

- (n) Housekeeping and janitorial activities and supplies including the following:
 - (1) Vacuum cleaning systems used exclusively for housekeeping or custodial activities, or both.
 - (2) Steam cleaning activities.
 - (3) Rest rooms and associated cleanup operations and supplies.
 - (4) Alkaline or phosphate cleaners and associated equipment.
 - (5) Mobile floor sweepers and floor scrubbers.

- (o) Office related activities including the following:
 - (1) Office supplies and equipment.
 - (2) Photocopying equipment and associated supplies.
 - (3) Paper shredding.

- (p) Lawn care and landscape maintenance activities and equipment, including the storage, spraying or application of insecticides, pesticides and herbicides.

- (q) Storage equipment and activities including:
 - (1) Pressurized storage tanks and associated piping for the following:
 - (a) Anhydrous ammonia.
 - (b) Acetylene.
 - (c) Carbon Monoxide.
 - (d) Inorganic compounds.
 - (e) Liquid natural gas (LNG)(propane).

 - (2) Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.
 - (3) Storage tanks, reservoirs, and pumping and handling equipment of any size containing soap, wax, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
 - (4) Storage of drums containing maintenance raw materials.
 - (5) Storage of the following:
 - (a) Any non-HAP containing material in solid form stored in a sealed or covered container.

- (6) Portable containers used for the collection, storage, or disposal of materials provided the container capacity is equal to or less than 0.46 cubic meters and the container is closed except when the material is added or removed.
- (r) Emergency and standby equipment including:
 - (1) Safety and emergency equipment, except engine driven fire pumps, including fire suppression systems and emergency road flares.
 - (2) Process safety relief devices installed solely for the purpose of minimizing injury to persons or damage to equipment which could result from abnormal process operating conditions, including the following:
 - (a) Explosion relief vents, diaphragms or panels.
 - (b) Rupture discs.
 - (c) Safety relief valves.
 - (3) Activities and equipment associated with on-site medical care not otherwise specifically regulated.
- (s) Sampling and testing equipment and activities including the following:
 - (1) Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.
 - (2) Hydraulic and hydrostatic testing equipment.
 - (3) Sampling activities including:
 - (a) Sampling of waste.
 - (4) Instrument air dryers and distribution.
- (t) Use of consumer products and equipment where the product or equipment is used at a source in the same manner as normal consumer use and is not associated with any production process.
- (u) Activities generating limited amounts of fugitive dust including:
 - (1) Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes under 326 IAC 2-7-1(21)(B), and any required fugitive dust control plan or its equivalent is submitted.
 - (2) Road salting and sanding.
- (v) Activities associated with production including the following:
 - (1) Electrical resistance welding.
 - (2) Application equipment for hot melt adhesives with no VOC in the adhesive formulation.
 - (3) Drop hammers or hydraulic presses for forging or metalworking.
 - (4) Air compressors and pneumatically operated equipment, including hand tools.
 - (5) Compressor or pump lubrication and seal oil systems.
 - (6) Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized.
 - (7) Equipment for washing or drying fabricated glass or metal products, if no VOCs or HAPs are used in the process, and no gas, oil or solid fuel is burned.
 - (8) Handling of solid steel, including coils and slabs, excluding scrap burning,

scarfing, and charging into steel making furnaces and vessels.

- (w) Miscellaneous equipment, but with no emissions associated with the process for which the equipment is used, and activities including the following:
 - (1) Equipment used for surface coating, painting, dipping or spraying operation, except those that will emit VOCs or HAPs.
 - (2) Electric or steam heated drying ovens and autoclaves, including only the heating emissions and not any associated process emissions.
 - (3) Salt baths using nonvolatile salts including caustic solutions that do not result in emissions of any regulated air pollutants.
 - (4) Portable dust collectors.
 - (5) Scrubber systems circulating water based solutions of inorganic salts or bases which are installed to be available for response to emergency situations.
 - (6) Soil borrow pits.
 - (7) Manual loading and unloading operations.
 - (8) Construction and demolition operations.
 - (9) Mechanical equipment gear boxes and vents which are isolated from process materials.

- (x) Space heaters, process heaters, or boilers using the following fuels.
 - (1) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (2) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing less than five-tenths (0.5) percent sulfur by weight.

- (y) The following VOC and HAP storage containers:
 - (1) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.
 - (2) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

- (z) Equipment used exclusively for the following:
 - (1) Filling drums, pails or other packaging containers with lubricating oils, waxes, and greases.

- (aa) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings.

- (bb) Machining where an aqueous cutting coolant continuously floods the machining interface.

- (cc) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6:
 - (1) Cleaners and solvents characterized as follows:
 - (A) having a vapor pressure equal to or less than 2 kPa; 15mm Hg; or 0.3 psi measured at 38 degrees C (100 degrees F); or
 - (B) having a vapor pressure equal to or less than 0.7 kPa; 5mm Hg; or 0.1 psi measured at 20 degrees C (68 degrees F);

the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.

- (dd) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (ee) Closed loop heating and cooling systems.
- (ff) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (gg) Any operation using aqueous solutions containing less than 1% by weight of VOCs excluding HAPs.
- (hh) Water based adhesives that are less than or equal to 5% by volume of VOCs excluding HAPs.
- (ii) Heat exchanger cleaning and repair.
- (jj) Process vessel degassing and cleaning to prepare for internal repairs.
- (kk) Paved and unpaved roads and parking lots with public access.
- (ll) Purging of gas lines and vessels that is related to routine maintenance and repair of buildings, structures, or vehicles at the source where air emissions from those activities would not be associated with any production process.
- (mm) Equipment used to collect any material that might be released during a malfunction, process upset, or spill cleanup, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment.
- (nn) Blowdown for boilers and cooling towers.
- (oo) Purge double block and bleed valves.
- (pp) Filter or coalescer media changeout.
- (qq) A laboratory as defined in 326 IAC 2-7-1(21)(D).
- (rr) One (1) thin stillage tank with a maximum capacity of 374,000 gallons.
- (ss) One (1) syrup tank with a maximum capacity of 180,000 gallons.
- (tt) Two (2) liquidification tanks with a maximum capacity of 128,400 gallons each.
- (uu) One (1) whole stillage tank with a maximum capacity of 180,000 gallons.
- (vv) One (1) cookwater tank with a maximum capacity of 374,000 gallons.
- (ww) One (1) sodium bisulfite tank with a maximum capacity of 7,100 gallons.

Enforcement Issues

There are no pending enforcement actions.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S20	Grain Unloading Baghouse	40.00	4.00	48,000	Ambient
S30	Milling Baghouse	40.00	3.33	28,000	Ambient
S70	Type II DISA Cooling Drum	48.00	4.00	Up to 30,000	110
S90	DDGS Loadout Baghouse	40.00	2.17	9,100	Ambient
S40	Fermentation (CO ₂) Scrubber	75.00	2.25	11,000	65
S10	4 Natural Gas-Fired Dryers Exhausting to Two (2) Recuperative Thermal Oxidizers (TOs)	125.00	10.08	220,000	300
S50	Loadout Flare (Shared Between Truck and Railcar Loadout)	30.00	2.50	34,000	1800
S60	Biomethanator Flare	30.00	0.58	6,400	1800
S80	Cooling Tower (Per Cell, 4 Cells Total)	40.00	25.33	780,000	85

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 16).

Permit Level Determination – FESOP

Pursuant to 326 IAC 2-7-1(29), Potential to Emit is defined as “the maximum capacity of a stationary source or emission 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, including 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, IDEM, or the appropriate local air pollution control agency.”

The following table is used to determine the appropriate permit level under 326 IAC 2-8.11.1. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential to Emit (tons/year)
PM	Greater than 250
PM-10	Greater than 100
SO ₂	Less than 100
VOC	Greater than 100
CO	Greater than 100
NO _x	Less than 100

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

Pollutant	Potential to Emit (tons/year)
Acetaldehyde	Greater than 10
Acrolein	Greater than 10
Benzene	Less than 10
Cumene	Less than 10
Ethyl Benzene	Less than 10
Formaldehyde	Greater than 10
Hexane	Less than 10
Methanol	Greater than 10
MTBE	Less than 10
Toluene	Less than 10
Xylene	Less than 10
Total HAPs	Greater than 25

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM-10, VOCs, and CO are each 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.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of a single HAP is greater than ten (10) tons per year and the potential to emit 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 emissions below the Title V levels.

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. The source's potential to emit is based on information included in the FESOP application.

Process/Emission Unit	Potential To Emit (tons/year)							
	PM	PM-10	SO ₂	NO _x	VOC	CO	Single HAP	Total HAPs
Grain Receiving and Handling (with Baghouse)	9.01	9.01	-	-	-	-	-	-
Grain Receiving and Handling - Fugitives	4.02	1.82	-	-	-	-	-	-
Grain Milling (with Baghouse)	5.26	5.26	-	-	-	-	-	-
DDGS Cooling Drum (to Baghouse)	5.63	5.63	-	-	12.23	-	0.35 (Acetaldehyde)	0.67
DDGS Cooling Drum (to TOs/HRSG)***	See Note	See Note	-	-	See Note	-	See Note	See Note
DDGS Handling and Loadout (with Baghouse)	1.71	1.71	-	-	-	-	-	-
DDGS Handling and Loadout - Fugitives	0.03	0.01	-	-	-	-	-	-
Cooling Tower	13.70	13.70	-	-	-	-	-	-
DDGS Dryer System (with TOs/HRSG)	25.12	25.12	88.33	94.71	19.63	90.68	3.34 (Hexane)	9.38
Fermentation (with Scrubber)	0.30	0.34	-	-	50.34	-	6.05 (Acetaldehyde)	7.37
Component Leaks - Fugitives	-	-	-	-	8.85	-	1.37 (Acetaldehyde)	1.55
Biomethanator Flare*	See Note	See Note	See Note	See Note	See Note	See Note	-	-
Ethanol Loadout Flare	0.003	0.003	0.0003	1.10	0.81	5.77	-	-
Truck Loading/Loadout - Fugitives From Roads	35.87	6.98	-	-	-	-	-	-
Diesel Fire Pump Generator	0.17	0.17	0.15	2.33	0.19	0.50	-	-
Wet DGS Storing and Handling - Fugitives**	See Note	See Note	-	-	See Note	-	See Note	See Note
Storage Tanks - Fugitives	-	-	-	-	3.69	-	-	-
Other Insignificant Activities	-	-	-	-	0.65	-	-	-
Ethanol Loading Rack	-	-	-	-	1.17	-	0.09 (Toluene)	0.24
PTE (tons/yr)	60.90	60.93	88.48	98.14	85.02	96.96	6.40 (Acetaldehyde)	17.66

Note: The PTE above is based on the emission calculations in Appendix A and the proposed emission limits in the permit. Fugitive emissions are not counted towards the PTE.
"- " indicates that the specific pollutant is not emitted by the facility.

* The biomethanator flare shall not operate when any of the DDGS dryers are in operation. Based on the calculations in Appendix A (pages 5 and 9) the emissions from the DDGS dryers are the worst case scenario. Therefore, the PTE of the biomethanator flare is not included in the PTE for the entire source.

** This plant is capable of producing both DDGS and Wet DGS (see Appendix A, pages 5 and 13). 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.

***Emissions from the DDGS Cooling Drum (EP 12) are included in the PTEs for the DDGS Dryer System (with TOs/HRSG). Air flow from the DDGS Cooling Drum is used for additional combustion air for the TOs/HRSG systems (C10 or C11).

Federal Rule Applicability Determination

- (a) The requirements of New Source Performance Standards for Grain Elevators (40 CFR 60.300-304, Subpart DD), which is incorporated by reference as 326 IAC 12, apply to affected facilities at any grain terminal elevator or any grain storage elevator, with a permanent storage capacity greater than 2.5 million U.S. bushels. Pursuant to 40 CFR 60.300(a), affected facilities include each truck unloading station, truck loading station, barge and ship unloading station, barge and ship loading station, railcar loading station, railcar unloading station, grain dryer, and all grain handling operations. This source does not have any grain terminal elevator or any grain storage elevator with a permanent storage capacity greater than 2.5 million U.S. bushels. Therefore, the requirements of 40 CFR Part 60, Subpart DD are not applicable to this source.
- (b) The thermal oxidizer/heat recovery steam generator (TO/HRSG) systems (C10 and C11) are also used to produce steam and each of them has a maximum heat input capacity greater than 100 MMBtu/hr. These units will be constructed after the 40 CFR Part 60, Subpart Db applicability date of June 19, 1984. Therefore, the TO/HRSG systems (C10 and C11) are subject to the New Source Performance Standards for Industrial-Commercial-Institutional Steam Generating Units (40 CFR 60.40b-49b, Subpart Db), which is incorporated by reference as 326 IAC 12.

Nonapplicable portions of the NSPS will not be included in the permit. The proposed TO/HRSG systems (C10 and C11) are subject to the following portions of 40 CFR Part 60, Subpart Db:

- (1) 40 CFR 60.40b(a), (g), (j).
- (2) 40 CFR 60.41b.
- (3) 40 CFR 60.42b(k)(1), (k)(2).
- (4) 40 CFR 60.44b(a), (f), (h), (i), (l).
- (5) 40 CFR 60.46b(a), (c), (e)(1), (e)(4).
- (6) 40 CFR 60.48b(b)(1), (c), (d), (e)(2), (f), (g), (h), (i).
- (7) 40 CFR 60.49b(a)(1)-(3), (b)-(d), (g), (h)(2), (h)(4), (i), (o), (v), (w).

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated as 326 IAC 12-1-1, apply to the TO/HRSG systems (C10 and C11) except when otherwise specified in 40 CFR Part 60, Subpart Db.

- (c) Tanks T61 through T67 have capacities greater than 151 cubic meters (39,890 gallons) and vapor pressures greater than 3.5 kilopascals 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 (40 CFR 60.110b - 117b, Subpart Kb), which is incorporated by reference as 326 IAC 12. The one (1) corrosion inhibitor tank and one (1) anhydrous ammonia tank each has a maximum capacity less than 75 cubic meters (19,813 gallons) and therefore are not subject to this NSPS.

Nonapplicable portions of the NSPS will not be included in the permit. Tanks T61 through

T67 are subject to the following portions of 40 CFR Part 60, Subpart Kb:

- (1) 40 CFR 60.110b(a), (b).
- (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).
- (7) 40 CFR 60.117b.

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated as 326 IAC 12-1-1, apply to Tanks T61 through T67 except when otherwise specified in 40 CFR Part 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 Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (40 CFR 60.480 - 489, Subpart VV), which is incorporated by reference as 326 IAC 12. Affected facilities under this NSPS include leaks from the various components assembled to produce ethanol (as intermediate or final products). The following emission units are affected facilities:

- (1) The following fermentation operations, identified as EP 03, approved for construction in 2007, with a counter-current CO₂ packed bed scrubber (C40) equipped with a demister as controls for VOC emissions, with an outlet gas flowrate of 11,000 acfm and a maximum scrubbing liquid flowrate of 13,000 gallons of ethanol per hour, and exhausting to Stack S40:
 - (i) Seven (7) fermenters with a maximum capacity of 807,000 gallons each.
 - (ii) One (1) beer well with a maximum capacity of 1,080,000 gallons.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (2) One (1) distillation process, identified as EP 05, approved for construction in 2007, with a maximum throughput rate of 14,300 gallons of ethanol per hour, controlled by TO/HRSG systems C10 and C11, exhausting through Stack S10, and consisting of the following:
 - (i) One (1) receiver (blend) tank with a maximum capacity of 470 gallons.
 - (ii) Two (2) slurry tanks with a maximum capacity of 25,000 gallons each.
 - (iii) Two (2) cook tubes with a maximum capacity of 5,200 gallons each.
 - (iv) One (1) flash tank with a maximum capacity of 4,500 gallons.
 - (v) Two (2) liquefaction tanks with a maximum capacity of 128,400 gallons each.
 - (vi) Two (2) yeast tanks with a maximum capacity of 13,500 gallons each.
 - (vii) One (1) beer column.
 - (viii) One (1) side stripper.
 - (ix) One (1) rectifier column.
 - (x) One (1) 190 proof condenser.
 - (xi) Six (6) molecular sieves.
 - (xii) One (1) 200 proof condenser.
 - (xiii) Six (6) centrifuges.

- (xiv) Two (2) centrate tanks with a maximum capacity of 1,690 gallons each.
- (xv) Eight (8) evaporators.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this process are considered to be affected facilities.

- (3) One (1) ethanol loading rack for trucks or railcars, identified as EP 14, approved for construction in 2007, with a maximum throughput rate of 36,000 gallons per hour for truck loading and a maximum throughput rate of 72,000 gallons per hour for railcar loading, controlled by an enclosed flare (C50), which is fueled by natural gas and has a maximum heat input capacity of 12.4 MMBtu/hr, exhausting through Stack S50.

Under NSPS, Subpart VV, the pumps, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves of this rack are considered to be affected facilities.

Nonapplicable portions of the NSPS will not be included in the permit. The following portions of 40 CFR Part 60, Subpart VV have been included in the permit:

- (1) 40 CFR 60.480(a), (b).
- (2) 40 CFR 60.481.
- (3) 40 CFR 60.482-1.
- (4) 40 CFR 60.482-2.
- (5) 40 CFR 60.482-4.
- (6) 40 CFR 60.482-5.
- (7) 40 CFR 60.482-6.
- (8) 40 CFR 60.482-7.
- (9) 40 CFR 60.482-8.
- (10) 40 CFR 60.482-9.
- (11) 40 CFR 60.482-10.
- (12) 40 CFR 60.483-1.
- (13) 40 CFR 60.483-2.
- (14) 40 CFR 60.484.
- (15) 40 CFR 60.485.
- (16) 40 CFR 60.486.
- (17) 40 CFR 60.487.
- (18) 40 CFR 60.489.

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated as 326 IAC 12-1-1, apply to the equipment leaks from components of the ethanol plant, except when otherwise specified in 40 CFR Part 60, Subpart VV.

- (e) Ethanol is one of the chemicals listed in 40 CFR 60.667. However, according to the U.S. 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, 40 CFR Part 60, Subpart NNN. Therefore, the distillation unit at this new ethanol production plant is not subject to the requirements of New Source Performance Standards for VOC Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations (326 IAC 12, 40 CFR 60.660 -

667, Subpart NNN).

- (f) The one (1) emergency fire pump (EP 16), which has a displacement of less than 30 liters per cylinder, is subject to the requirements of the New Source Performance Standards for Stationary Compression Ignition Internal Combustion Engines (NSPS) (326 IAC 12 and 40 CFR Part 60, Subpart IIII) because the fire pump has a vendor's date of after July 1, 2006, and construction will commence after July 11, 2005. The following emission unit is subject to this rule:

- (1) One (1) diesel-fired emergency fire water pump, identified as EP 16, with a maximum capacity of 300 HP, with a manufacturer's date of after July 1, 2006, and a displacement of less than 30 liters per cylinder, to be installed upon issuance of the permit.

Under NSPS, Subpart IIII, the emergency fire water pump (EP 16) is considered an affected facility.

Nonapplicable portions of the NSPS will not be included in the permit. This emission unit is subject to the following portions of 40 CFR Part 60, Subpart IIII:

- (1) 40 CFR 60.4200(a)(2)(ii).
- (2) 40 CFR 60.4200(a)(3).
- (3) 40 CFR 60.4200(c).
- (4) 40 CFR 60.4205(c).
- (5) 40 CFR 60.4206.
- (6) 40 CFR 60.4207(a).
- (7) 40 CFR 60.4207(b).
- (8) 40 CFR 60.4207(c).
- (9) 40 CFR 60.4209(a).
- (10) 40 CFR 60.4211(a).
- (11) 40 CFR 60.4211(b).
- (12) 40 CFR 60.4211(e).
- (13) 40 CFR 60.4214(b).
- (14) 40 CFR 60.4218.
- (15) 40 CFR 60.4219.
- (16) Table 4 to Subpart IIII.
- (17) Table 8 to Subpart IIII.

The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated as 326 IAC 12-1-1, apply to the emergency fire pump, except when otherwise specified in 40 CFR Part 60, Subpart IIII.

- (g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20, 40 CFR Part 61, and 40 CFR Part 63) included in the permit.
- (h) The requirements of National Emissions Standard for Hazardous Air Pollutants (NESHAP) for Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ) apply to any stationary reciprocating internal combustion engine (RICE) located at a major source of HAP emissions. A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. This source has accepted FESOP limits which restrict source-wide HAP emissions to less than 10 tons/yr for a single HAP and less than 25 tons/yr for total HAPs. Therefore, the requirements of 40 CFR Part 63, Subpart ZZZZ are not included in this

permit.

- (i) 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 Part 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 Part 63, Subpart F.
- (j) The requirements of 40 CFR Part 63, Subpart I (National Emission Standards for Organic Hazardous Air Pollutants for Certain Processes Subject to the Negotiated Regulation for Equipment Leaks) apply to sources that have organic hazardous air pollutants from processes listed in 40 CFR 63.190 (b)(1) through (b)(6) and are located at a major source of HAPs. This source does not operate any of the processes specified in 40 CFR 63.190(b) and this source is a minor source of HAPs. Therefore, the requirements of 40 CFR Part 63, Subpart I are not applicable to this source.
- (k) The requirements of 40 CFR Part 63, Subpart Q (National Emission Standards for Hazardous Air Pollutants for Industrial Process Cooling Towers) apply to industrial process cooling towers that are operated with chromium-based water treatment chemicals and are located at a major source of HAPs. This new source is a minor source of HAPs. Therefore, the requirements of 40 CFR Part 63, Subpart Q are not included in the permit.
- (l) The requirements of 40 CFR Part 63, Subpart EEEE (National Emission Standards for Hazardous Air Pollutants for Organic Liquids Distribution (Non-Gasoline)) apply to organic liquid distribution operations that are located at a major source of HAPs. This new source is a minor source of HAPs. Therefore, the requirements of 40 CFR Part 63, Subpart EEEE are not included in the permit.
- (m) The requirements of 40 CFR Part 63, Subpart FFFF (National Emission Standards for Hazardous Air Pollutants for Miscellaneous Organic Chemical Manufacturing) apply to miscellaneous organic chemical manufacturing process units (MCPUs) that are located at a major source of HAPs. This new source is a minor source of HAPs. Therefore, the requirements of 40 CFR Part 63, Subpart FFFF are not included in the permit.

State Rule Applicability Determination - Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), 326 IAC 2-4.1 (New Sources of Hazardous Air Pollutants), and 326 IAC 2-8-4 (FESOP)

This source will be constructed in 2007/2008. This source is not one of the twenty eight (28) listed source categories under 326 IAC 2-2-1(gg)(1). The FESOP will contain limits to restrict the source-wide emissions of PM-10, VOC, and CO to less than 100 tons per year. The FESOP will also contain limits to restrict the source-wide emissions of single HAPs and combined HAPs to less than 10 tons per year and less than 25 tons per year, respectively. Additionally, the FESOP will contain limits to restrict the source-wide emissions of PM to less than 250 tons per year. In order to make the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limitations:

- (a) The PM/PM-10 emissions from the grain receiving and handling operations, the grain milling operations, and the DDGS handling and loadout operations shall not exceed the

emission limits listed in the table below:

Unit ID	Unit Description	Baghouse ID	PM/PM-10 Emission Limit (lbs/hr)
EP 01	Grain Receiving and Handling	C20	2.06
EP 02	Grain Milling Operations	C30	1.20
EP 13	DDGS Handling and Loadout	C90	0.39

The use of baghouses C20, C30, and C90 are necessary to demonstrate compliance with the PM/PM-10 limits above.

- (b) The total grain received shall not exceed 1,210,000 tons per twelve (12) consecutive month period with compliance determined at the end of each month. This condition was proposed by the Permittee and is necessary to limit the PM/PM-10 emissions from the grain receiving and handling operations.
- (c) The total DDGS produced shall not exceed 392,568 tons per twelve (12) consecutive month period with compliance determined at the end of each month. This condition was proposed by the Permittee and is necessary to limit the PM/PM-10 emissions from the DDGS loadout operations and the VOC emissions from the baghouse (C70) stack (S70) associated with the DDGS cooling drum (EP 12).
- (d) The Permittee shall use choked flow systems for the grain receiving and handling operations, and the DDGS loadout spout.
- (e) The emissions from wet scrubber C40, which is used to control the emissions from the fermentation process, shall comply with the following:
 - (1) VOC emissions shall not exceed 11.49 lbs/hr. This is equivalent to 50.34 tons per year of VOC emissions; and
 - (2) Acetaldehyde emissions shall not exceed 1.38 lbs/hr. This is equivalent to 6.05 tons per year of acetaldehyde emissions.
- (f) The Permittee shall comply with the following emission limits for thermal oxidizers C10 and C11, which are used to control the emissions from the distillation process (EU 05) and the DDGS dryers (EU 09):
 - (1) Combined PM/PM-10 emissions shall not exceed 5.74 lbs/hr.
 - (2) Combined VOC emissions shall not exceed 4.48 lbs/hr.
 - (3) Combined CO emissions shall not exceed 20.70 lbs/hr.
 - (4) Combined Formaldehyde emissions shall not exceed 0.55 lbs/hr.
 - (5) Combined Acetaldehyde emissions shall not exceed 0.50 lbs/hr.
 - (6) Combined Methanol emissions shall not exceed 0.20 lbs/hr.

- (7) Combined Acrolein emissions shall not exceed 0.12 lbs/hr.
- (8) Combined NO_x emissions shall not exceed 21.62 lbs/hr.
- (9) Combined SO₂ emissions shall not exceed 20.17 lbs/hr.

[Note: The source is required to verify that the NO_x and SO₂ emission rates do not exceed the rates in (8) and (9).]

(g) The emissions from the baghouse (C70) associated with the DDGS cooling drum (EP 12) shall comply with the following:

- (1) The PM/PM-10 emissions from baghouse C70 (stack S70), which is used to control part of the emissions from the DDGS cooling drum, shall not exceed 0.54 lbs/hr.
- (2) The total DDGS produced shall not exceed 392,568 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (3) The VOC emissions from cooling drum baghouse stack S70 shall not exceed 2.79 lbs/hr.

[Note: Of the 50,000 acfm air flow stream from the cooling drum process the source has proposed to vent up to a maximum of 30,000 acfm to baghouse (C70) for particulate control, which will exhaust to Stack S70. The remaining air flow stream will be vented to the TO/HRSG systems (C10 or C11) as additional combustion air, which will exhaust to Stack S10. The above PM/PM-10 and VOC limits are based on a maximum air flow of 30,000 acfm to baghouse (C70).]

(h) The Permittee shall comply with the following requirements for the ethanol loading rack (EP 14):

- (1) The Permittee shall use flare C50 to control the emissions from the ethanol loading rack (EP 14).
- (2) The total denatured ethanol loaded shall not exceed 121,000,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (3) The total denatured ethanol loaded into trucks shall not exceed 78,650,000 gallons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (4) The operating hours of flare C50 shall not exceed 2,500 hours per twelve (12) consecutive month period with compliance determined at the end of each month.
- (5) The ethanol loading rack (EP 14) shall utilize the submerged loading method.
- (6) The railcars and trucks shall not use vapor balance services, when loading ethanol.
- (7) CO emissions from flare C50 shall not exceed 4.62 lbs/hr.
- (8) The toluene emissions from flare C50 shall not exceed 0.073 lbs/hr.
- (9) The VOC emissions from flare C50 shall not exceed 2.04 lbs/hr. [Note: This includes VOC emissions from flare C50 combustion, VOC emissions from railcar loading (after controls), and VOC emissions from truck loading (after controls).

The VOC emissions limit in (9) is based on the short-term maximum hourly allowable VOC emissions from the stack for flare C50. The annual VOC emissions from flare C50 are limited as discussed below, based on the maximum operating hours for flare C50 and maximum loading throughputs for truck and rail car loading.]

The ethanol loading rack can load denatured ethanol to either railcars or trucks.

Truck Loading

The hourly VOC emission rate for truck loading was calculated based on the VOC emission factor of 0.774 lbs/kgal, the maximum truck loadout rate of 36 kgal/hr, and the flare control efficiency of 98% ($0.774 \text{ lbs/kgal} \times 36 \text{ kgal/hr} \times (1-98\%) = 0.56 \text{ lbs/hr}$).

Railcar Loading

The hourly VOC emission for railcar loading was calculated based on the VOC emission factor of 0.464 lbs/kgal, the maximum railcar loadout rate of 72 kgal/hr, and the flare control efficiency of 98% ($0.464 \text{ lbs/kgal} \times 72 \text{ kgal/hr} \times (1-98\%) = 0.67 \text{ lbs/hr}$).

The VOC emission factors were calculated using the equation in AP-42, Chapter 5.2 (see the emission calculations in Appendix A).

In order to comply to preclude applicability of 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) the total denatured ethanol loaded into railcars and trucks shall not exceed 121,000,000 gallons per year (combined) and the total denatured ethanol loaded into trucks shall not exceed 78,650,000 gallons per year.

Limited Potential VOC Emissions from Truck Loading

The potential to emit of VOCs for truck loading was calculated based on the VOC emission factor of 0.774 lbs/kgal, the maximum truck loadout rate of 78,650 kgal/yr, and the flare control efficiency of 98%:

$$(0.774 \text{ lbs/kgal} \times 78,650 \text{ kgal/yr} \times (1-98\%) \times 1\text{ton}/2,000 \text{ lbs} = 0.61 \text{ tons/yr}).$$

Limited Potential VOC Emissions from Railcar Loading

The potential to emit of VOCs for railcar loading was calculated based on the VOC emission factor of 0.464 lbs/kgal, the maximum railcar loadout rate of 121,000 kgal/yr, and the flare control efficiency of 98%:

$$(0.464 \text{ lbs/kgal} \times 121,000 \text{ kgal/yr} \times (1-98\%) \times 1\text{ton}/2,000 \text{ lbs} = 0.56 \text{ tons/yr}).$$

Note: The potential to emit of NOx and CO for the flare (C50) was calculated using the emission factors in AP-42, Table 13.5-1 for industrial flares. Therefore, no specific CO or NOx emission limits will be included in the permit for this flare.

- (i) The biomethanator flare (C60) shall not operate when any of the DDGS dryers (EP 09) are in operation. This condition is necessary because the potential to emit of the biomethanator flare (C60) is not included in the potential to emit of the entire source. Emissions from the operation of the DDGS dryers are the worst case scenario. Flare C60 and the DDGS dryers cannot operate at the same time to assure the potential to emit of CO from this source will be less than 100 tons per year. Additionally, the biomethanator flare C60 shall be designed as a smokeless flare and the flare shall be turned on when none of the four (4) DDGS dryers (EP 09) are in operation.

Combined with the PM-10, VOC, NOx, SO₂, and CO emissions from other units, the PM-10, VOC, NOx, SO₂, and CO emissions from the entire source are each limited to less than 100 tons/yr. Combined with the PM emissions from other units, the PM emissions from the entire source are limited to less than 250 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.

326 IAC 2-6 (Emission Reporting)

Pursuant to 326 IAC 2-6-1, this source is not subject to this rule because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, LaPorte, or Porter Counties, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

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 shall meet the following, unless otherwise stated in the 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.

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	Maximum Throughput Rate (tons/hr)	Particulate Emission Limit (lbs/hr)
EP 01	Truck Receiving Operations	560 (for each pit)	70.32 (for each pit)
EP 01	Railcar Receiving Operations	1,120 (for each pit)	79.06 (for each pit)
EP 01	Grain Elevator	560	70.32
EP 01	Grain conveyor	560	70.32
EP 01	Six (6) Grain Storage Bins	560 (each)	70.32 (each)
EP 01	Grain Elevator	560	70.32
EP 01	Grain Day Bin Conveyor	168	56.64
EP 01	Grain Day Bin	560	70.32
EP 01	Two (2) Grain Scalpers	168 (each)	56.64 (each)
EP 02	Hammermill Feed Conveyor	560	70.32
EP 02	Four (4) Hammermills	168 (each)	56.64 (each)
EP 13	DDGS Handling and Loadout	500	68.96

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

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 emissions 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.

As shown in the calculations in Appendix A, the potential to emit of PM after control from the grain receiving/handling, milling, and loadout operations is less than the emission limits above. Therefore, these operations are able to comply with 326 IAC 6-3-2. The use of the baghouses C20, C30, and C90 are necessary to comply with the limits above.

State Rule Applicability – Fermentation Process

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 loadout operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol loadout 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:

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. Therefore, the following conditions apply:

- (a) The VOC emissions from the fermentation process (EP 03) shall be controlled by wet scrubber C40.
- (b) The overall VOC control efficiency for the wet scrubber C40 (including the capture efficiency and absorption efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 20 ppmv.
- (c) Pursuant to 326 IAC 8-5-6(d), the source shall determine initial compliance with the control efficiency requirement within sixty (60) days after achieving maximum production levels but no later than one hundred and eighty (180) days after startup.
- (d) Pursuant to 326 IAC 8-5-6(e)(2), the owner or operator of a fuel grade ethanol production plant that is a dry mill shall ensure and verify initial and continuing compliance with the control efficiency requirement by doing the following:
 - (1) If using a wet scrubber, the owner or operator shall meet the following requirements:
 - (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.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process, distillation process, DDGS dryers, and ethanol loadout 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).

State Rule Applicability - Thermal Oxidizer/Heat Recovery Steam Generator (TO/HRSG) Systems

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 for the TO/HRSG systems is $122 \times 2 = 244$ MMBtu/hr. Therefore, the PM emission limit for the TO/HRSG system is:

$$Pt = \frac{1.09}{244^{0.26}} = 0.26 \text{ lbs/MMBtu}$$

The above PM emission limit of 0.26 lbs/MMBtu is equivalent to 63.4 lbs/hr ($0.26 \text{ lbs/MMBtu} \times 122 \text{ MMBtu/hr/unit} \times 2 \text{ unit} = 63.4 \text{ lbs/hr}$) of PM emissions. According to the emission calculations in Appendix A, the total PM emissions from the TO/HRSG systems (Stack S10) are 5.74 lbs/hr. Therefore, these units are able to comply with the PM requirements in 326 IAC 6-2-4.

326 IAC 12-1-1 (New Source Performance Standards: Industrial-Commercial-Institutional Steam Generating Units)

The Industrial-Commercial-Institutional Steam Generating Units, identified as TO/HRSG Systems C10 and C11, are subject to 326 IAC 12-1-1 (Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units (NSPS)). 326 IAC 12-1-1 incorporates by reference 40 CFR Part 60, Subpart Db. The Permittee will comply with the provisions of 40 CFR Part 60, Subpart Db as detailed in the Federal Rule Applicability section above.

The version of the rule referenced by 326 IAC 12-1-1 was the version in existence on July 1, 2006. 40 CFR Part 60, Subpart Db was most recently amended in the Federal Register on June 13, 2007. Therefore, the June 13, 2007, amendments to the federal rule are not approved into the Indiana Administrative Code (326 IAC), and the Industrial-Commercial-Institutional Steam Generating Units, identified as TO/HRSG Systems C10 and C11, are subject to both versions of the rule. When the revised rule is incorporated into the 326 IAC, the Permittee may apply for a

revision to the permit to remove any requirements from the previous version of the rule that are not present in the updated version of the rule. All of the requirements of 326 IAC 12-1-1 rule that are applicable to this source are the same as the requirements listed under Federal Rule Applicability except for the following:

- (1) 40 CFR 60.40b(a), (g).
- (2) 40 CFR 60.41b.
- (3) 40 CFR 60.44b(a), (f), (h), (l).
- (4) 40 CFR 60.46b(c), (e)(1), (e)(4).
- (5) 40 CFR 60.48b(b)(1), (c), (d), (e)(2), (f).
- (6) 40 CFR 60.49b(a)(1)-(a)(3), (b), (c)(1)-(c)(3), (g), (h)(2), (h)(4), (i).

State Rule Applicability - Distillation Process

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 loadout operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol loadout 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:

Pursuant to 326 IAC 8-5-6(c), the Permittee has chosen to control the VOC emissions from the distillation process with the recuperative thermal oxidizers. Therefore, the following conditions apply:

- (a) The VOC emissions from the distillation process (EP 05) shall be controlled by TO/HRSG system C10 or C11.
- (b) The overall VOC control efficiency for each of the TO/HRSG systems C10 and C11 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.
- (c) Pursuant to 326 IAC 8-5-6(d), the source shall determine initial compliance with the control efficiency requirement within sixty (60) days after achieving maximum production levels but no later than one hundred and eighty (180) days after startup.
- (d) Pursuant to 326 IAC 8-5-6(e)(1), the owner or operator of a fuel grade ethanol production plant that is a dry mill shall ensure and verify initial and continuing compliance with the control efficiency requirement by doing the following:
 - (1) If using a thermal oxidizer, the owner or operator shall meet the following requirements:
 - (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.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process, distillation process, DDGS dryers, and ethanol loadout 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).

State Rule Applicability - DDGS Dryers

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the four (4) DDGS dryers (EP 09) shall not exceed 43.60 pounds per hour combined when operating at a maximum throughput rate of 45 tons per hour.

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

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:

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

In this case,
P = 45 tons per hour, and
E = 43.60 pounds of PM per hour

The use of the TO/HRSG system (C10 or C11) for each of the four (4) DDGS dryers (EP 09) is necessary to comply with the emission limit above.

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 loadout operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol loadout 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:

Pursuant to 326 IAC 8-5-6(c), the Permittee has chosen to control the VOC emissions from the DDGS dryers with recuperative thermal oxidizers. Therefore, the following conditions apply:

- (a) The VOC emissions from each of the four (4) DDGS dryers (EP 09) shall be controlled by TO/HRSG system C10 or C11.
- (b) The overall VOC control efficiency for each of the TO/HRSG systems C10 and C11 (including the capture efficiency and destruction efficiency) shall be at least 98%, or the VOC outlet concentration shall not exceed 10 ppmv.

- (c) Pursuant to 326 IAC 8-5-6(d), the source shall determine initial compliance with the control efficiency requirement within sixty (60) days after achieving maximum production levels but no later than one hundred and eighty (180) days after startup.
- (d) Pursuant to 326 IAC 8-5-6(e)(1), the owner or operator of a fuel grade ethanol production plant that is a dry mill shall ensure and verify initial and continuing compliance with the control efficiency requirement by doing the following:
 - (1) If using a thermal oxidizer, the owner or operator shall meet the following requirements:
 - (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.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process, distillation process, DDGS dryers, and ethanol loadout 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).

State Rule Applicability - DDGS Cooling Drum

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, particulate emissions from the DDGS cooling drum (EP 12) shall not exceed 43.60 pounds per hour when operating at the maximum process throughput rate of 45 tons per hour.

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

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:

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

In this case,
P = 45 tons per hour, and
E = 43.60 pounds of PM per hour

The use of baghouse C70 for the DDGS cooling drum (EP 12) is not necessary to comply with the emission limit above since the uncontrolled PM emission rate is less than the allowable emission rate calculated above. However, the use of baghouse C70 for the DDGS cooling drum (EP 12) is

required at all times for particulate (PM and PM-10) control in order to render 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The potential VOC emissions from the DDGS Cooling Drum are less than 25 tons/yr. Therefore, the requirements of 326 IAC 8-1-6 (BACT) are not applicable to this unit.

Note: Although a portion of the airflow from the cooling drum (EP 12) is vented to TO/HRSG system (C10 or C11) and the remaining airflow is vented to baghouse C70, the potential VOC emissions from the cooling drum, prior to being vented to TO/HRSG system (C10 or C11) or baghouse C70, are less than 25 tons per year. Therefore, the requirements of 326 IAC 8-1-6 (BACT) do not apply.

State Rule Applicability - DDGS Handling and Loadout Operation

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2, particulate emissions from the four (4) DDGS storage bins (EP 13) shall not exceed 68.96 pounds per hour when operating at the maximum process throughput rate of 500 tons per hour.

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

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:

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

In this case,
P = 500 tons per hour, and
E = 68.96 pounds of PM 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.

As shown in the calculations in Appendix A, the potential to emit of PM after control from the DDGS bins is less than the emission limits above. Therefore, these operations are able to comply with 326 IAC 6-3-2. The use of the baghouse C90 is necessary to comply with the limit above.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The potential VOC emissions from the DDGS storage bins are less than 25 tons/yr. Therefore, the requirements of 326 IAC 8-1-6 (BACT) are not applicable to these units.

State Rule Applicability - Ethanol Loading Rack

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 loadout operation greater than 25 tons per year. Therefore, the fermentation process, distillation process, DDGS dryers, and ethanol loadout

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:

Pursuant to 326 IAC 8-5-6(c), the Permittee has chosen to control the VOC emissions from the ethanol loading rack with an enclosed flare. Therefore, the following conditions apply:

- (a) The VOC emissions from the ethanol loading rack (EP 14) shall be collected and controlled by enclosed flare C50 when this unit is in operation.
- (b) The overall efficiency for flare C50 (including the capture efficiency and destruction efficiency) shall be at least 98%.
- (c) Pursuant to 326 IAC 8-5-6(d), the source shall determine initial compliance with the control efficiency requirement within sixty (60) days after achieving maximum production levels but no later than one hundred and eighty (180) days after startup.
- (d) Pursuant to 326 IAC 8-5-6(e)(3), the owner or operator of a fuel grade ethanol production plant that is a dry mill shall ensure and verify initial and continuing compliance with the control efficiency requirement by doing the following:
 - (1) If using an enclosed flare, the owner or operator shall meet the following requirements:
 - (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.

326 IAC 8-1-6 (General Reduction Requirements for VOC Emissions)

The fermentation process, distillation process, DDGS dryers, and ethanol loadout 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).

State Rule Applicability - Cooling Tower (Insignificant Activity)
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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 - Fugitive Emissions
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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)

Pursuant to 326 IAC 6-5-1(b), the proposed grain receiving, handling, and loadout operations, paved roads, and grain storage areas are subject to 326 IAC 6-5 because Morning Star Energy, LLC did not receive preconstruction approval prior to December 13, 1985 and these operations

are new sources of fugitive particulate matter emissions. A Fugitive Dust Control Plan was submitted on July 13, 2007 and has been included in the permit as Attachment A as well as below:

Morning Star Energy, LLC
1222 South State Road 63
Clinton, Indiana 47842

Morning Star Energy has submitted an air permit application to construct an ethanol production facility near Clinton, Vermillion County, Indiana. Upon completion, the ethanol facility will use approximately 43,214,287 bushels of corn to produce 121 million gallons of denatured ethanol, and up to 392,568 tons of Dried Distillers Grains and Solubles, and 352,024 tons of Wet Distillers Grains and Solubles per year.

Indiana Administrative Code (IAC), Title 326, Article 6, Rule 5 requires facilities to submit and adhere to a Fugitive Dust Control Plan (FDCP) designed to identify sources of fugitive dust and detail control measures for fugitive particulate matter (PM) emissions generated from the facility. Morning Star Energy has submitted the following Fugitive Dust Control Plan to the Indiana Department of Environmental Management (IDEM) as a supplement to the permit application for approval.

Identification of Sources

Fugitive PM emissions can generally be classified coming from one of three processes: Grain Handling/Receiving, DDG Handling/Loading, and Internal Haul Roads. Each process is detailed below.

(1) Grain, primarily corn, is received by truck or railcar. Grain is unloaded into a receiving pit. Prior to use, the grain is mechanically conveyed to a concrete storage bin for storage. From the storage bins, grain is conveyed to the scalping milling process where hammermills break the corn down into a fine powder suitable for use in ethanol production. Fugitive emissions can be generated from:

- Grain hauling
- Grain unloading
- Grain conveying
- Grain storage
- Grain milling

(2) The distillation process removes the ethanol from the beer, non-fermentable corn solids, and water. The residue mash (whole stillage) leaving distillation is transferred from the base of the distillation column to the stillage processing area. The whole stillage then passes through a centrifuge process to remove the majority of the water. The underflow from the centrifuge is called Wet Distillers Grains (WDGS). WDGS, also called wet cake, can be directly loaded to trucks for distribution to consumers. It can also be partially dried into a product known as modified wet cake. Neither product generates fugitive PM dust emissions. However, the WDGS can be dried to approximately 10% moisture resulting in product called Dried Distillers Grains and Solubles (DDGS). DDGS production does generate fugitive PM emissions and could likely come from the following sources:

- DDGS conveying
- DDGS dump pit
- DDGS storage

- DDGS loading
 - DDGS transport
- (3) Fugitive PM emissions are generated from truck traffic transporting loads of grain, denaturant, denatured ethanol and DDGS/WDGS to and from the facility. The majority of the fugitive PM emissions are generated from product loading. Other vehicular traffic does occur on the paved roads, including employee and visitor traffic, and other deliveries. The emissions from non-product related traffic is minor, and this traffic mostly occurs on the road into and out of the plant and in the main parking lot area. Estimated truck traffic as calculated in the potential to emit is detailed below in order to provide an idea of estimated truck traffic for the major product deliveries:
- Denaturant – 807 trips per year
 - Denatured ethanol – 10,478 trips per year
 - Grain – 43,560 trips per year
 - DDGS – 15,703 trips per year
 - WDGS – 14,081 trips per year

Fugitive Emission Control Measures

Several methods of control will be used at Morning Star Energy to control PM fugitive emissions as described below:

Grain Processing

- (1) Grain Hauling - A small amount of fugitives are generated from hauling grain. All trucks transporting grain to and from the plant will be covered by a tarp or similar cover from the point the truck enters the plant until it reaches the point of unloading.
- (2) Grain Unloading - Grain delivered to the facility via truck and railcar will be unloaded within the grain receiving building. This is an enclosed building operating with a choked flow ventilation creating negative pressure. Also, emissions generated within this building will be controlled with a high efficiency fabric filter baghouse (grain unloading baghouse – C20).
- (3) Grain Conveyors - All conveyors are enclosed and ventilated to the grain unloading baghouse (C20).
- (4) Grain Storage - Grain will be stored in six (6) concrete storage silos. Storage bins have a negative pressure and emissions will be controlled by the hammermill baghouse (C30).
- (5) Grain Milling - The plant will have four (4) hammermills which will mill the grain into a fine powder. Milling occurs within an enclosed space and emissions will be controlled by a high efficiency baghouse.

DDGS Processing

- (1) DDGS Conveyors - All conveyors are enclosed and ventilated to the DDGS loading baghouse (C90).
- (2) DDGS Dump Pit - PM emissions from the DDGS dump/pit auger are controlled with an aspirated ventilation system coupled with a high efficiency fabric filter baghouse (C90).
- (3) DDGS Storage - DDGS will be stored in four (4) storage silos or within an enclosed building. Storage bins have a negative pressure and emissions will be controlled by the DDGS loading baghouse (C90).
- (4) DDGS Loading - DDGS are loaded into truck or rail for shipment off site. DDGS loading occurs within an enclosed building operating with a choked flow ventilation creating

negative pressure. Also, emissions generated within this building will be controlled with a high efficiency fabric filter baghouse (DDGS loading baghouse - C90).

- (5) DDGS hauling - All trucks transporting DDGS from the plant will be covered by a tarp or similar cover from the point the truck leaves the loading point to the facility exit.

Internal Haul Roads

- (1) All internal haul roads will be paved.
- (2) Maximum vehicle speed along the roadways will be limited to 10 mph.
- (3) Product loading limitations will be set as calculated in the potential to emit calculations for products from the site.
- (4) A road sweeping program will be implemented at the plant as necessary to remove mud, dirt or other sediment from the roadways. This will be done with brooms or mechanical sweeping as necessary.

Documentation

Records shall be kept and maintained at the plant that document control measures detailed within this plan. For baghouses, records will be kept on the inspection and maintenance of the baghouses. For the haul roads, records will be maintained on when and by what method the roads are swept. These records will be made readily available to IDEM for review upon request by the agency.

State Rule Applicability - Storage Tanks T61 through T67 (Insignificant Activities)
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326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

The denaturant storage tank (T64) 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 T64 is subject to the requirements of 326 IAC 8-4-3. Tank T64 will be equipped with an internal floating roof and shall comply with the following requirements in 326 IAC 8-4-3:

- (a) Pursuant to 326 IAC 8-4-3(b)(1)(B), Tank T64 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, shall be equipped with covers, lids, or seals such that:
 - (1) the cover, lid, or seal is in the closed position 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; and
 - (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 T64:
 - (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 T61-T63, T65-T67, the corrosion inhibitor tank, and the anhydrous ammonia tank will not be used to store petroleum products. Additionally, the corrosion inhibitor tank and the anhydrous ammonia tank each have a storage capacity of less than 39,000 gallons. 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.

State Rule Applicability – Diesel Fire Pump (Insignificant Activity)

326 IAC 9-1-2 (Carbon Monoxide Emission Requirements)

This source is not among the listed source categories in 326 IAC 9-1-2. Therefore, the diesel fire pump (EP 16) is not subject to the requirements of 326 IAC 9-1-2.

326 IAC 10-1 (Nitrogen Oxide Emission Requirements)

This source is not located in Clark or Floyd Counties. Therefore, the diesel fire pump (EP 16) is not subject to the requirements of 326 IAC 10-1.

Testing Requirements

In order to demonstrate compliance with the FESOP, PSD minor limits, and 40 CFR Part 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 proposed plant:

- (a) PM and PM-10 tests for baghouses C20, C30, and C90 which are used to control the particulate emissions from the grain receiving and handling operations (EP 01), the grain milling operations (EP 02), and the DDGS handling and loadout operations (EP 13), respectively.
- (b) VOC and acetaldehyde tests for scrubber C40, which is used to control the fermentation process. The potential to emit of acetaldehyde, before controls, for the fermentation process is greater than 10 tons per year.
- (c) PM, PM-10, VOC, CO, formaldehyde, acetaldehyde, methanol, and acrolein tests for the TO/HRSG system stack S10. The TO/HRSG systems (C10 and C11) are used to control the emissions from the distillation process (EP 05), the four (4) DDGS dryers (EP 09). Part of the air flow from the DDGS cooling drum (EP 12) is vented to the TO/HRSG systems for additional combustion air. Both the TO/HRSG systems vent through a single stack (S10). The source is required to test for formaldehyde, acetaldehyde, methanol, and acrolein because the potential to emit of each HAP is greater than 10 tons per year.
- (d) PM, PM-10, and VOC testing for baghouse C70, which is used to control the PM and PM-10 emissions from part of the air flow stream for the DDGS cooling drum (EP 12).

These tests shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

- (e) The Permittee is required to verify that the SO₂ emission rate for stack S10 does not exceed 20.17 pounds per hour.

- (f) The Permittee is required to verify that the NOx emission rate for stack S10 does not exceed 21.62 pounds per hour.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a 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 Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action. If the Compliance Determination Requirements 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 appropriate corrective actions within a specific time period.

The Compliance Determination Requirements applicable to this source are as follows:

1. The grain receiving and handling operations (EP 01), the grain milling operations (EP 02), the DDGS cooling drum (EP 12), and the DDGS handling and loadout operations (EP 13) have applicable compliance monitoring conditions as specified below. These units are controlled by baghouses C20, C30, C70, or C90, respectively.
 - (a) Visible emission notations of the baghouse stack exhausts (Stacks S20, S30, S70, and S90) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal. 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. 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. 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. 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.
 - (b) The Permittee shall record the pressure drop across baghouses C20, C30, and C90 used in conjunction with the grain receiving and handling operations (EP 01), the grain milling operations (EP 02), and the DDGS handling and loadout operations (EP 13), at least once per day. When for any one reading, the pressure drop across baghouses C20, C30, or C90 is outside the normal range of 1.0 and 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.
 - (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 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 for grain receiving and handling operations (EP 01), the grain milling operations (EP 02), the DDGS cooling drum (EP 12), and the DDGS handling and loadout operations (EP 13) must operate properly to ensure compliance with 326 IAC 2-8 (FESOP), 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) (except for EP 12), and to render 326 IAC 2-2 (PSD) and 326 IAC 2-7 (Part 70) not applicable.

[Note: The use of baghouse C70 for the DDGS Cooling Drum (EP 12) is not necessary to comply with the allowable PM emission rate of 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes). However, the use of baghouse C70 for the DDGS cooling drum (EP 12) is required at all times for particulate (PM and PM-10) control in order to render 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

Additionally, pressure drop monitoring is not required for the DDGS cooling drum baghouse (C70) as this control device is not equipped with a pressure gauge.]

2. The distillation process (EP 05), the four (4) DDGS dryers (EP 09), which are controlled by the TO/HRSG systems (C10 and C11), and the portion of the air flow from the DDGS cooling drum that is vented to the TO/HRSG systems (C11 or C12) as additional combustion air exhaust gas have applicable compliance monitoring conditions as specified below:
 - (a) Visible emission notations of the exhaust from the TO/HRSG system stack (S10) shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal. 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. 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. 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 specific process. 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.
 - (b) A continuous monitoring system shall be calibrated, maintained, and operated on the TO/HRSG systems (C10 and C11) for measuring operating temperature. For the purpose of this condition, continuous means no less than once per minute. The output of these systems 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 oxidizer at or above the 3-hour average temperature of 1,400°F.
 - (c) 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.
 - (d) On and after the date the approved stack test results are available, the Permittee shall operate the thermal oxidizer at or above the 3-hour average temperature as observed during the compliant stack test.

- (e) 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.
- (f) The duct pressure or fan amperage shall be observed at least once per day when the TO/HRSG system 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 at least one of the TO/HRSG systems (C10 or C11) must operate properly at all times the distillation process (EP 05), and the four (4) DDGS dryers (EP 09) are in operation to ensure compliance with 326 IAC 2-8-4 (FESOP), 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills), and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) and to render 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

3. The wet scrubber C40, which is used to control the fermentation process, has applicable compliance monitoring conditions as specified below:
 - (a) The Permittee shall monitor and record the pressure drop and flow rate of scrubber C40, at least once per day when the associated fermentation process is in operation. When for any one reading, the pressure drop across the scrubber is outside the normal range of 1.0 and 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. When for any one reading, the flow rate of the scrubber is less than the minimum of 120 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 mention 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.
 - (b) 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.
 - (c) A continuous monitoring system shall be calibrated, maintained, and operated on the fermentation scrubber (C40) for measuring the sodium bisulfite injection rate. For the purpose of this condition, continuous means no less than once per minute. The output of the system shall be recorded as one-hour averages. From the date of issuance of this permit until the approved stack test results are available, the Permittee shall inject sodium bisulfite at a rate of 12 milliliters per minute.

The Permittee shall determine the one-hour average injection rate from the most recent valid stack test that demonstrates compliance with the limits in Condition D.2.1, as approved by IDEM.

On and after the date the approved stack test results are available, the Permittee shall inject sodium bisulfite at or above the one-hour average injection rate as observed during the compliant stack test.

[Note: PM/PM-10 emissions from the fermentation process are negligible. Therefore, visible emissions notations are not required for this process.]

These monitoring conditions are necessary because scrubber C40 for the fermentation process must operate properly to ensure compliance with 326 IAC 2-8-4 (FESOP) and 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills) and to render 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

4. The ethanol loading rack (EP 14), which is controlled by enclosed flare C50, has applicable compliance monitoring conditions as specified below:

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.

These monitoring conditions are necessary because flare C50 must operate properly at all times that the ethanol loading rack is in operation to ensure compliance with 326 IAC 2-8-4 (FESOP) and 326 IAC 8-5-6 (Fuel Grade Ethanol Production at Dry Mills) and to render 326 IAC 2-7 (Part 70) and 326 IAC 2-2 (PSD) not applicable.

Recommendation

The staff recommends to the Commissioner that the proposed 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 application for the purposes of this review was received on April 24, 2007. Additional information was received on July 13, 2007.

Conclusion

The construction and operation of this ethanol production plant shall be subject to the conditions of the attached FESOP No.: F165-24677-00085.

**Appendix A: Emission Calculations
Emissions Summary**

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

Potential to Emit

Emission Units	PM	PM-10	SO ₂	NO _x	VOC	CO	Worst-Case Single HAP	Total HAPs
Grain Receiving and Handling (with Baghouse)	130.58	130.58	-	-	-	-	-	-
Grain Receiving and Handling - Fugitives	1.06	0.24	-	-	-	-	-	-
Grain Milling (with Baghouse)	262.80	262.80	-	-	-	-	-	-
DDGS Cooling Drum (to Baghouse)	81.61	81.61	-	-	12.23	-	0.35 (Acetaldehyde)	0.67
DDGS Cooling Drum (to TOs/HRSG)	54.41	54.41	-	-	8.15	-	0.24 (Acetaldehyde)	0.45
DDGS Handling and Loadout (with Baghouse)	24.76	24.76	-	-	-	-	-	-
DDGS Handling and Loadout - Fugitives	0.03	0.01	-	-	-	-	-	-
Cooling Tower	13.70	13.70	-	-	-	-	-	-
DDGS Dryer System (with TOs/HRSG)	1256.22	1256.22	88.33	94.71	981.42	4534.16	60.85 (Formaldehyde)	159.73
Fermentation (with Scrubber)	15.00	16.79	-	-	2,516.80	-	12.10 (Acetaldehyde)	13.42
Component Leaks - Fugitives	-	-	-	-	8.85	-	1.37 (Acetaldehyde)	1.55
Biomethanator Flare*	0.003	0.003	0.0003	1.95	1.46	10.41	-	-
Ethanol Loadout Flare	0.003	0.003	0.0003	1.10	0.81	5.77	-	-
Truck Loading/Loadout - Fugitives From Roads	35.87	6.98	-	-	-	-	-	-
Diesel Fire Pump Generator	0.17	0.17	0.15	2.33	0.19	0.50	-	-
Wet DGS Storing and Handling - Fugitives**	0.01	0.00	-	-	1.43	-	0.13 (Formaldehyde)	0.18
Storage Tanks - Fugitives	-	-	-	-	3.69	-	-	-
Other Insignificant Activities	-	-	-	-	0.65	-	-	-
Ethanol Loading Rack	-	-	-	-	58.51	-	4.56 (Toluene)	12.16
Potential to Emit (tons/yr)**	1839.25	1841.04	88.48	98.14	3578.75	4540.43	67.65 (Acetaldehyde)	186.42

Limited/Controlled Potential to Emit

Emission Units	PM	PM-10	SO ₂	NO _x	VOC	CO	Worst-Case Single HAP	Total HAPs
Grain Receiving and Handling (with Baghouse)	9.01	9.01	-	-	-	-	-	-
Grain Receiving and Handling - Fugitives	4.02	1.82	-	-	-	-	-	-
Grain Milling (with Baghouse)	5.26	5.26	-	-	-	-	-	-
DDGS Cooling Drum (to Baghouse)	5.63	5.63	-	-	12.23	-	0.35 (Acetaldehyde)	0.67
DDGS Cooling Drum (to TOs/HRSG)****	-	-	-	-	-	-	-	-
DDGS Handling and Loadout (with Baghouse)	1.71	1.71	-	-	-	-	-	-
DDGS Handling and Loadout - Fugitives	0.03	0.01	-	-	-	-	-	-
Cooling Tower	13.70	13.70	-	-	-	-	-	-
DDGS Dryer System (with TOs/HRSG)	25.12	25.12	88.33	94.71	19.63	90.68	3.34 (Hexane)	9.38
Fermentation (with Scrubber)	0.30	0.34	-	-	50.34	-	6.05 (Acetaldehyde)	7.37
Component Leaks - Fugitives	-	-	-	-	8.85	-	1.37 (Acetaldehyde)	1.55
Biomethanator Flare*	0.003	0.003	0.0003	1.95	1.46	10.41	-	-
Ethanol Loadout Flare	0.003	0.003	0.0003	1.10	0.81	5.77	-	-
Truck Loading/Loadout - Fugitives From Roads	35.87	6.98	-	-	-	-	-	-
Diesel Fire Pump Generator	0.17	0.17	0.15	2.33	0.19	0.50	-	-
Wet DGS Storing and Handling - Fugitives**	0.01	0.00	-	-	1.43	-	0.13 (Formaldehyde)	0.18
Storage Tanks - Fugitives	-	-	-	-	3.69	-	-	-
Other Insignificant Activities	-	-	-	-	0.65	-	-	-
Ethanol Loading Rack	-	-	-	-	1.17	-	0.09 (Toluene)	0.24
Potential to Emit (tons/yr)**	60.90	60.93	88.48	98.14	85.01	96.96	6.40 (Acetaldehyde)	17.66

* The Biomethanator flare will not operate when any of the DDGS dryers are in operation. The emissions from the DDGS dryers are the worst case scenario. Therefore, the PTE of the biomethanator flare is not included in the PTE for the entire source.

** This plant is capable of producing both DDGS and Wet DGS. 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.

***Fugitive emissions are not counted towards the potential to emit.

****Emissions from the DDGS Cooling Drum (EP 12) are included in the PTEs for the DDGS Dryer System (with TOs/HRSG).

Appendix A: Emissions Calculations
Emissions from Grain Receiving/Handling/Loadout and Milling Operations

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. Potential to Emit PM/PM-10 - Captured Emissions:

Control ID	Emission Unit ID	Process Description	Pollutant	Design Outlet Grain Loading (grains/acf)	Maximum Air Flowrate (acfm)	Control Device	Overall Control Efficiency (%)**	PTE after Control (lbs/hr)	PTE after Control (tons/yr)	PTE before Control (tons/yr)
C20	EP 01	Grain Receiving/Handling	PM/PM-10	5.00E-03	48,000	Baghouse	93.10%	2.06	9.01	130.58
C30	EP 02	Grain Milling	PM/PM-10	5.00E-03	28,000	Baghouse	98.00%	1.20	5.26	262.80
C70	EP 12	Cooling Drum (TO Bypass Only)	PM/PM-10	5.00E-03	30,000	Baghouse	93.10%	1.29	5.63	81.61
C90	EP 13	DDGS Handling and Loadout	PM/PM-10	5.00E-03	9,100	Baghouse	93.10%	0.39	1.71	24.76
Total Emissions (tons/yr) =									21.61	499.76

Assume all PM emission equal to PM-10 emissions.

METHODOLOGY

PTE after Control (lb/hr) = Design Outlet Grain Loading (grains/acf) x Maximum Air Flowrate (acfm) x 60 (min/hr) x 1/7000 (grains/lb)
PTE after Control (tons/yr) = Design Outlet Grain Loading (grains/acf) x Maximum Air Flowrate (acfm) x 60 (min/hr) x 1/7000 (grains/lb) x 8,760 (hr/yr) / 2000 (lbs/ton)
PTE before Control (tons/yr) = PTE after Control (tons/yr) / (1 - Overall Control Efficiency %)

Notes:

*Of the total 50,000 cfm air flowrate from the DDGS Cooling Drum, up to a maximum of 30,000 cfm will be vented to the baghouse. The remaining air flow will be vented to a thermal oxidizer.

**Assumed 95% capture efficiency for each operation, except grain milling which is 100% captured. The vendor's guaranteed control efficiency, for each baghouse, is 98%. Overall Control Efficiency = (Capture Efficiency (%) x Control Efficiency (%))

2. Potential to Emit PM/PM-10 - Fugitive Emissions:

Emission Unit ID	Process Description	Annual Throughput Limit (tons/yr)	Uncontrolled PM Emission Factor (lbs/ton)*	Uncontrolled PM-10 Emission Factor (lbs/ton)*	Baghouse ID	Capture Efficiency** (%)	Fugitive PM Emissions (tons/yr)	Fugitive PM-10 Emissions (tons/yr)
EP 01	Grain Receiving	1,210,000.00	0.035	0.0078	C20	95%	1.06	0.24
EP 01	Grain Handling	1,210,000.00	0.061	0.0340	C20	95%	1.85	1.03
EP 01	Grain Scalping	1,210,000.00	0.012	0.0060	C20	95%	0.36	0.18
EP 01	Bin Vents***	1,210,000.00	0.025	0.0125	C20	95%	0.76	0.38
EP 13	DDGS Handling and Loadout	392,568.00	0.003	0.0008	C90	95%	0.03	0.01
Total Emissions (tons/yr) =							4.06	1.83

METHODOLOGY

Fugitive PM/PM-10 Emissions (tons/yr) = Annual Throughput Limit (tons/yr) x Uncontrolled Emission Factor (lbs/ton) x (1 - Capture Efficiency (%)) x 1 ton/2000 lbs

Notes:

Fugitives are a result of uncaptured PM/PM-10 emissions.

Assumes ethanol plant will receive and store grain in their grain storage bins.

* Emission factors for grain receiving and handling 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. The emission factor for grain scalping is from Table 9.9.1-2 for separators. The Permittee stated that there are no fugitive emissions from the grain milling operation because the emissions from this operation are 100% captured.

**Assumes additional control of fugitives by choked flow systems (95%).

***Assumes storage bin vents are not included with the headhouse/internal handling emissions.

Appendix A: Emissions Calculations
VOC Emissions from the DDGS Cooling Drum and Cyclone (EP 12) to Baghouse (C70)

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. Potential to Emit of VOCs from DDGS Cooling Drum and Cyclone to Baghouse C70:

Emission Unit ID	Process Description	Pollutant	Throughput (tons DDGS/yr)	Uncontrolled VOC Emission Factor (lbs/ton DDGS)**	Uncontrolled VOC PTE (ton/yr)	VOC Emissions to Baghouse (ton/yr)*
EP 12	DDGS Cooling Drum/Cyclone	VOC	392,568.00	0.104	20.38	12.23

Notes:

For PM/PM-10 emissions see Grain Receiving/Handling/Loadout and Milling worksheet.

Uncontrolled VOC emission Factor: 0.074 lbs/ton of DDGS (based on the test results from a similar plant)

*Of the total 50,000 acf/min air flowrate from the DDGS Cooling Drum, up to a maximum of 30,000 acf/min will be vented to the baghouse. The remaining air flow will be vented to a thermal oxidizer.

**Emission factor is multiplied by a safety factor of 1.4.

2. Potential to Emit of HAPs from DDGS Cooling Drum and Cyclone to Baghouse C70:

	Pollutant			
	Acetaldehyde	Acrolein	Methanol	Formaldehyde
Emission Factor (lb/ton DDGS)*	0.003	0.001	0.0007	0.001
Emissions to Baghouse (tons/yr)**	0.353	0.118	0.082	0.118
Total Emissions (tons/yr)	0.589	0.196	0.137	0.196

* Emission factors are based on the test results from a similar plant.

**Only emissions to the baghouse, which are up to a maximum of 60% (30,000 (acf/min) /50,000 (acf/min)), from the cooling drum and cyclone are included.

Appendix A: Emissions Calculations
Emissions from the Cooling Tower (EP 11)

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. Process Description:

Type of Cooling Tower: Induced Draft
Circulation Flow Rate: 3,000,000.00 gal/hr
Total Drift: 0.005% of the circulating flow
Total Dissolved Solids: 2,500 ppm
Density: 8.34 lbs/gal

Emission Unit ID	Emission Unit	PM/PM-10 PTE (tons/yr)
EP 11	Cooling Tower	13.70

Assumes all dissolved solids become PM-10 emissions and assume PM emissions are equal to PM-10 emissions.

METHODOLOGY

$PM/PM-10 \text{ PTE (tons/yr)} = \text{Circulations Flow Rate (gal/hr)} \times \text{Total Drift (\%)} \times \text{Density (lbs/gal)} \times \text{Total Dissolved Solids (ppm)} \times 1/1,000,000 \text{ ppm} \times 8,760 \text{ hrs/yr} \times 1 \text{ ton}/2,000 \text{ lbs}$

Source has proposed to utilize non VOC/HAP containing chemicals. Therefore VOC/HAP emissions were not calculated.

Appendix A: Emissions Calculations

**Combustion Emissions
Four Natural Gas Dryers and Two Natural Gas Recuperative Thermal Oxidizers (TO/HRSO Systems)**

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

Unit	Description	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
EP 09	NG-Fired Dryer No. 1	45.00	394.20
EP 09	NG-Fired Dryer No. 2	45.00	394.20
EP 09	NG-Fired Dryer No. 3	45.00	394.20
EP 09	NG-Fired Dryer No. 4	45.00	394.20
		180.00	1576.80

Unit	Description	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
EP 04	Recuperative Thermal Oxidizer No. 1	122.00	1068.72
EP 04	Recuperative Thermal Oxidizer No. 2	122.00	1068.72
		244.00	2137.44

1. Combustion Emissions

	Pollutant
Emission Factor in lbs/MMCF	NOx 51.00 *see below
Potential Emissions in tons/yr	94.71

Notes:
 *The source is required to verify the emission factor.
 NOx emission factor is based on manufacturer's data.

Methodology

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
 Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton

2. Process and Combustion Emissions

Annual DDGS Production (tons/yr) = 392,568

	Pollutant				
	PM	PM-10	SO ₂	VOC	CO
Emission Factor in lbs/ton	0.128	0.128	0.450 *see below	0.100	0.462
Potential Emissions in tons/yr	25.12	25.12	88.33	19.63	90.68

Notes:
 Emission factors are provided by the source based on the stack test results of multiple ethanol facilities and includes a moderate margin of safety. PM and PM-10 emission factors include condensable fraction.

Emissions of PM/PM-10, VOC, and CO from each dryer are controlled by either thermal oxidizer No. 1 or No. 2. Estimated control efficiency for each thermal oxidizer is 98%.

*SO₂ emissions are uncontrolled.

All emission factors are based on normal firing.
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas

Methodology

Potential Emissions (tons/yr) = Annual DDGS Production (tons/yr) x Emission Factor (lbs/ton) / 2,000 lbs/ton
 See next page for HAP emission calculations.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
Four Natural Gas Dryers and Two Natural Gas Recuperative Thermal Oxidizers (TO/HRSG Systems)
HAP Emissions**

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr
424.00	3714.24
(6 Units Combined)	

1. Combustion Emissions

	HAPs - Organics			
	Benzene	Dichlorobenzene	Hexane	Toluene
Emission Factor in lbs/MMCF	2.10E-03	1.20E-03	1.80E+00	3.40E-03
Potential Emissions in tons/yr	3.90E-03	2.23E-03	3.34E+00	6.31E-03

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lbs/MMCF	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03
Potential Emissions in tons/yr	9.29E-04	2.04E-03	2.60E-03	7.06E-04	3.90E-03

Notes:
 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

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
 Potential Emissions (tons/yr) = Potential Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton

2. Process Emissions

Annual DDGS Production (tons/yr) = 392,568
 Thermal Oxidizers HAP Destruction Efficiency = 96%

	HAPs - Organics			
	Acetaldehyde	Acrolein	Formaldehyde	Methanol
Before Control Emission Factor in lbs/MMCF	2.80E-01	6.60E-02	3.10E-01	1.10E-01
After Control Emission Factor in lbs/MMCF	1.12E-02	2.64E-03	1.24E-02	4.40E-03
Potential Emissions (after controls) in tons/yr	2.20E+00	5.18E-01	2.43E+00	8.64E-01
Potential Emissions (before controls) in tons/yr	5.50E+01	1.30E+01	6.08E+01	2.16E+01

Total HAPs = 9.38E+00
 Worst-Case HAP = 3.34E+00

Notes:
 Emission factors are provided by the source based on the stack test results of multiple ethanol facilities and includes a moderate margin of safety.

Methodology

Potential Emissions in tons/yr = Emission Factor (lbs/ton) x Annual DDGS Production (tons/yr) / 2,000 lbs/ton

**Appendix A: Emissions Calculations
Emissions from the Fermentation Process**

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. Process Description:

Max. Throughput Limit (MM gals/yr of ethanol): 121.00
 Control Equipment: Packed Bed CO₂ Scrubber (C40)

2. Potential to Emit (PTE):

Pollutant	Emission Factor* (lbs/MM gals)	PTE after Control (tons/yr)	Control Efficiency (%)**	PTE before Control (tons/yr)
PM	4.96	0.30	98.00%	15.00
PM-10	5.55	0.34	98.00%	16.79
VOC	832.00	50.34	98.00%	2,516.80
Acetaldehyde	100.00	6.05	50.00%	12.10
Acrolein	1.70	0.10	0.00%	0.10
Formaldehyde	0.22	0.01	0.00%	0.01
Methanol	19.85	1.20	0.00%	1.20
Total HAPs		7.37		13.42

*The emission factors are provided by the source based on stack test results from multiple ethanol facilities and include a moderate margin of safety.

**The control efficiency information is based on information from other similar plants.

Methodology

PTE after Control (tons/yr) = Max. Throughput Limit (MM gal/yr) x Emission Factor (lbs/ MM gals) x 1 ton/2000 lbs

PTE before Control (tons/yr) = PTE after Control (tons/yr) / (1 - Control Efficiency %)

**Appendix A: Emission Calculations
Component Leaks - Fugitive Emissions**

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. VOC Emissions:

Equipment	Number of Components	Leak Rate (kg/hr/source)	VOC Emission Rate (lbs/hr/Component)	VOC Emission Rate (lbs/hr)	Potential VOC Emissions (tons/yr)	LDAR Control Percent*	Controlled VOC Emissions (tons/yr)
Light Liquid Valves	545	0.00403	0.00888	4.84	21.21	84%	3.39
Light Liquid Pumps	45	0.01990	0.04387	1.97	8.65	69%	2.68
Gas Valves	91	0.00597	0.01316	1.20	5.25	87%	0.68
Flanges (Connectors)	910	0.00183	0.00403	3.67	16.08	87%	2.09

Total Number of Components =	1591
Uncontrolled VOC Emissions (tons/yr) =	51.18
Controlled VOC Emissions (tons/yr) =	8.85

2. HAP Emissions:

HAP Portion of VOCs	HAP Mass Fraction**	Controlled VOC Emissions (tons/yr)	Controlled HAP Emissions (tons/yr)
Formaldehyde	0.000169	8.85	0.0015
Acetaldehyde	0.155000	8.85	1.3712
Methanol	0.015000	8.85	0.1327
Acrolein	0.004500	8.85	0.0398

Total Controlled HAPs =	1.55
Worst-Case HAP (Acetaldehyde) =	1.37

Notes:

Component count is estimated based on a similar ethanol plant.

VOC leak rates are from the Protocol for Equipment Leak Emission Rates, EPA-453/R-95-17, November 1995.

*The LDAR control effectiveness is from the Protocol for Equipment Leak Emission Rates, EPA-453/R-95-17, November 1995, Table 5-2.

Controlled VOC Emissions (tons/yr) = Number of Components x Emission Factor (lbs/hr) x 8,760 hrs/yr x 1ton/2,000 lbs x (1 - Control Efficiency %)

Controlled HAP Emissions (tons/yr) = HAP Mass Fraction x Controlled VOC Emissions (tons/yr)

**The HAP mass fractions are derived from stack testing of a fermentation scrubber for a similar ethanol plant.

**Appendix A: Emissions Calculations
Biomethanator Flare and Combustion Emissions**

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

Note: The flare shall be operated only when the DDGS dryers are down.

Unit	Description	Heat Input Capacity MMBtu/hr
EP 15	NG-Fired Biomethanator Flare	6.40
	NG-Fired Biomethanator Flare (Pilot)	0.10
	Flaring Hours of Operation =	8,760
	Pilot Hours of Operation =	8,760

1. Waste Gas Emissions

Emission Factor in lb/MMBtu	Waste Gases (Flaring) - Pollutants						
	PM*	PM10*	SO ₂ *	NOx	VOC	CO	HAPs
	-	-	-	0.068	0.052	0.370	-
Uncontrolled Potential Emissions in tons/yr	Negligible	Negligible	Negligible	1.91	1.46	10.37	Negligible

Emission factors are from AP-42, Tables 13.5-1 and 13.5-2 (AP-42, 01/95)

* The Permittee stated that PM/PM10 emissions from this flare are negligible due to the smokeless design. The PTE of SO₂ and HAP are negligible due to negligible sulfur and HAP presence in the gas stream.

Methodology

Potential Emissions (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8,760 hrs/yr x 1 ton/2,000 lbs

Potential Throughput MMCF/yr
0.88

2. Pilot Light Emissions

Emission Factor in lb/MMCF	Pilot - Pollutants						
	PM	PM10	SO ₂	NOx*	VOC	CO	HAPs
	7.60	7.60	0.60	100.00	5.50	84.00	-
Potential Emissions in tons/yr	0.003	0.003	0.000	0.044	0.002	0.037	Negligible

*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3 (SUPPLEMENT D 3/98).

Potential Emissions (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

3. Total Emissions

PTE in tons/yr	Total Emissions - Pollutants						
	PM	PM10	SO ₂	NOx	VOC	CO	HAPs
	0.00	0.00	0.00	1.95	1.46	10.41	Negligible

PTE (tons/yr) = Waste Gases + Pilot Emissions

**Appendix A: Emissions Calculations
Loadout Flare and Combustion Emissions**

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

Unit	Description	Heat Input Capacity MMBtu/hr
EP 14	NG-Fired Loadout Flare	12.40
	NG-Fired Loadout Flare (pilot)	0.10
	Limited Loading Hours of Operation =	2,500
	Pilot Hours of Operation =	8,760

1. Waste Gas Emissions

Emission Factor in lb/MMBtu	Waste Gases (Flaring) - Pollutants						
	PM*	PM10*	SO ₂ *	NO _x	VOC	CO	HAPs*
Uncontrolled Potential Emissions in tons/yr	Negligible	Negligible	Negligible	1.05	0.81	5.74	Negligible

Emission factors are from AP-42, Tables 13.5-1 and 13.5-2 (AP-42, 01/95)

* The Permittee stated that PM/PM10 emissions from this flare are negligible due to the smokeless design. The PTE of SO₂ and HAP are negligible due to negligible sulfur and HAP presence in the gas stream.

Methodology

Potential Emissions (tons/yr) = Heat Input Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8,760 hrs/yr x 1 ton/2,000 lbs

Potential Throughput
MMCF/yr

0.88

2. Pilot Light Emissions

Emission Factor in lb/MMCF	Pilot - Pollutants						
	PM	PM10	SO ₂	NO _x *	VOC	CO	HAPs
Potential Emissions in tons/yr	0.00	0.00	0.00	0.04	0.00	0.04	Negligible

*Emission Factors for NO_x: Uncontrolled = 100, Low NO_x Burner = 50, Low NO_x Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3 (SUPPLEMENT D 3/98).

Potential Emissions (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

3. Total Emissions

PTE in tons/yr	Total Emissions - Pollutants						
	PM	PM10	SO ₂	NO _x	VOC	CO	HAPs
	0.00	0.00	0.00	1.10	0.81	5.77	0.00

PTE (tons/yr) = Waste Gases + Pilot Emissions

Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. PM/PM-10 emissions from transporting grain, DDGS, ethanol, and denaturant - Truck Loading/Loadout

The following calculations determine the amount of emissions created by vehicle traffic on paved roads, based on 8,760 hours of use and U.S. EPA's AP-42, 5th Edition, Chapter 13.2.1.

$$E_f = k \cdot (sL/2)^{0.65} \cdot (W/3)^{1.5} \cdot C$$

where k = 0.016 (particle size multiplier for PM-10)
k = 0.082 (particle size multiplier for PM)
sL = 0.60 road surface silt loading (grams per square meter)
W = 25.93 tons average vehicle weight
C = 0.00047 emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

Activity	Truck (Full) Weight (tons)	Truck (Empty) Weight (tons)	Average Truck Weight (tons)	PM Emission Factor (lb/VMT)	PM-10 Emission Factor (lb/VMT)	Number of Trips (trips/yr)	Average Distance (miles/trip)	Total VMT	PM Emissions (tons/yr)	PM-10 Emissions (tons/yr)
Truck Loading/Loadout	40.00	15.00	25.93	0.952	0.185	84,637	0.8900	75,327	35.87	6.98

Notes: Assumes 100% of grain, DDGS, ethanol, and denaturant goes in/out of the plant by truck. Emissions are worst-case estimates assuming no rail service.

WDGS will be approximately 35% of the total by-product production. However, it is assumed that 100% of that amount will be hauled by truck.

The total vehicle miles traveled (VMT) each year have been overestimated to provide a conservative estimate of PM and PM-10 emissions. Vehicle Miles Traveled (VMT) = Number of Trips (trips/yr) x Average Distance (miles/trip)

Appendix A: Emission Calculations
Internal Combustion Engines - Emergency Fire Pump (EP 16)
(300 Horsepower)

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. Emissions calculated based on heat input capacity (MMBtu/hr)

Heat Input Capacity
MMBtu/hr

2.10

Emission Factor in lb/MMBtu	Pollutant					
	PM*	PM10*	SO ₂	NO _x	VOC	CO
Potential Emission in tons/yr	0.31	0.31	0.29	4.41	0.36	0.95
	0.16	0.16	0.15	2.32	0.19	0.50

2. Emissions calculated based on output rating (hp)

Heat Input Capacity
Horsepower (hp)

300.00

Potential Throughput
hp-hr/yr

150000.00

Emission Factor in lb/hp-hr	Pollutant					
	PM*	PM10*	SO ₂	NO _x	VOC	CO
Potential Emission in tons/yr	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
	0.17	0.17	0.15	2.33	0.19	0.50

Methodology

Potential Throughput (hp-hr/yr) = hp * 500 hr/yr for emergency generators/fire pumps per EPA memorandum (09/06/1991)
1 hp-hr = 7000 Btu, AP42 (Supplement B 10/96), Table 3.3-1, Footnote a.

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-1

Potential Emissions (tons/yr) = Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu) * 500 hr/yr / (2,000 lb/ton)

Potential Emissions (tons/yr) = [Potential Throughput (hp-hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton)

*PM emission factors are assumed to be equivalent to PM-10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM-10 which is condensable.

Appendix A: Emission Calculations
Wet DGS Storing and Handling Emissions

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. PM/PM-10 emissions from transporting Wet DGS - Front End Loader

The following calculations determine the amount of emissions created by vehicle traffic on paved roads, based on 8,760 hours of use and U.S. EPA's AP-42, 5th Edition, Chapter 13.2.1.

$$E_f = k \cdot (sL/2)^{0.65} \cdot (W/3)^{1.5} \cdot C$$

where k = 0.016 (particle size multiplier for PM-10)
k = 0.082 (particle size multiplier for PM)
sL = 2.83 road surface silt loading (grams per square meter)
W = 2.00 tons average vehicle weight
C = 0.00047 emission factor for 1980's vehicle fleet exhaust, brake wear and tire wear.

Activity	Front End Loader (Full) Weight (tons)	Front End Loader (Empty) Weight (tons)	Average Front Loader Weight (tons)	PM Emission Factor (lb/VMT)	PM-10 Emission Factor (lb/VMT)	Number of Trips (trips/yr)	Average Distance (miles/trip)	Total VMT	PM Emissions (tons/yr)	PM-10 Emissions (tons/yr)
Front End Loading of Wet DGS	3.00	1.00	2.00	0.055	0.010	176,012	0.0019	333.36	0.0092	0.0017

Notes:

Vehicle Mile Traveled (VMT) = Number of Trips (trips/yr) x Average Distance (miles/trip)
100% of Wet DGS is moved to truck by front end loader.
The total vehicle miles traveled (VMT) each year have been overestimated to provide a conservative estimate of PM and PM-10 emissions.
VOC and HAP emissions from this activity are negligible.

2. VOC and HAP emissions from Wet DGS storage

Max. Throughput Rate = 352,024 tons/yr wetcake (provided by source)

Pollutant	Emission Factor (lbs/ton)**	PTE (tons/yr)
VOC	8.13E-03	1.43
Acetaldehyde	1.23E-04	0.02
Acrolein	1.83E-05	0.00
Formaldehyde	7.33E-04	0.13
Methanol	1.53E-04	0.03
Total HAPs		0.18

Methodology

PTE (tons/yr) = Max. Throughput Rate (tons/yr) x Emission Factor (lbs/ton) / 2,000 lbs/ton

Appendix A: Emission Calculations
Emissions From Storage Tanks

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

Emission Unit	Annual Throughput (gal/yr)*	VOC Emissions (lbs/yr)	VOC Emissions (tons/yr)
190 proof (T-65)	121,000,000	1,012.53	0.51
200 proof (T-63)	121,000,000	1,012.53	0.51
Denatured Ethanol (T-61)	60,495,000	622.02	0.31
Denatured Ethanol (T-62)	60,495,000	622.02	0.31
Denatured Ethanol (T-66)	60,495,000	622.02	0.31
Denatured Ethanol (T-67)	60,495,000	622.02	0.31
Denaturant (T-64)	60,500,000	2,860.53	1.43
Corrosion Inhibitor (CI)	66,180	13.25	0.01

Potential VOC Emissions (tons/yr) = 3.69

Notes:

The potential to emit of VOCs was calculated using U.S. EPA TANKS 4.09d software.
HAP emissions are negligible. The potential to emit of total HAPs, for all tanks listed above, is 0.093 tons per year.

*These annual throughputs (gal/yr) were used to calculate the potential to emit for the listed tanks in the U.S. EPA TANKS 4.09d software.

Appendix A: Emission Calculations
VOC Emissions From Insignificant Sources

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

Uncontrolled Vents	VOC Concentration (ppm, carbon)	Molecular Weight***	Air Flowrate (cfm)	Conversion Constant	Scaling Factor***	VOC Emissions (lbs/hr)	Uncontrolled VOC Emissions (tons/yr)
Thin Stillage Tank Vent	44.00	59.20	8.00	1.56E-07	2.300	0.0075	0.0327
Syrup Tank Vent	62.20	59.20	5.40	1.56E-07	2.300	0.0071	0.0312
Cook Water Tank Vent	31.00	59.20	13.40	1.56E-07	2.300	0.0088	0.0386
Liquidification Tank #1*	64.70	59.20	80.00	1.56E-07	2.300	0.1097	0.4806
Whole Stillage Tank Vent**	7.00	59.20	100.00	1.56E-07	2.300	0.0148	0.0650

Potential VOC Emissions (tons/yr) =

0.65

Methodology

Potential VOC Emissions (tons/yr) = VOC Concentration (ppm, carbon) x Molecular Weight x Air Flowrate (cfm) x Conversion Constant x Scaling Factor x 8,760 hrs/yr x 1 ton/2,000 lbs

Notes:

* There is no vent on the other liquidification tank.

**Based on VOC monitoring results from wetcake storage for a similar plant.

***Based on test data for a similar plant.

Appendix A: Emission Calculations
VOC and HAP Emissions From Ethanol Loading Racks

Company Name: Morning Star Energy, LLC
Address: 12222 S. State Road 63, Clinton, IN 47842
Permit Number: F165-24677-00085
Reviewer: Tanya White / EVP
Date: 09/04/07

1. Emission Factors: AP-42

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:

$$L = 12.46 \times (SPM)/T$$

where:

- L = loading loss (lbs/kgal)
- S = a saturation factor
- P = true vapor pressure of the liquid loaded (psia)
- M = molecular weight of vapors
- T = temperature of the bulk liquid loaded (degrees R)

Previous Stored Liquid	S*	P (psia)	M (lbs/mole lbs)	T (degrees R)	L (lbs/kgal)
Denatured Ethanol (Truck) - Normal	1.00	0.64	49.76	511.95	0.774
Denatured Ethanol (Rail) - Clean Cargo	0.60	0.64	49.76	511.95	0.464

Notes:

*A conservative saturation factor of 1.0 was assumed.

2. Potential to Emit of VOCs:

Annual Production Limit (Truck): 78,650 kgals/yr for truck loading
 Annual Production Limit (Railcar): 121,000 kgals/yr for rail loading
 Flare Control Efficiency: 98%

PTE of VOCs (tons/yr) for Railcar Loading = Annual Production Limit (Railcar) (kgal/yr) x Loading Losses (lbs/kgal) x 1 ton/2,000 lbs x (1 - Flare Control Efficiency %) =	0.56
PTE of VOCs (tons/yr) for Truck Loading = Annual Production Limit (Truck) (kgal/yr) x Loading Losses (lbs/kgal) x 1 ton/2,000 lbs x (1 - Flare Control Efficiency %) =	0.61
Total PTE of VOCs (tons/yr) = PTEs of VOCs for Railcar (tons/yr) + PTEs of VOCs for Trucks (tons/yr) =	1.17

3. Potential to Emit of HAPs:

HAP Portion of VOCs	HAP Fraction (%)*	PTE of VOC after Control for Truck Loading (tons/yr)	PTE of HAP before Control (tons/yr)	PTE of HAP after Control (tons/yr)
Benzene	2.45%	0.61	0.7454	0.0149
Ethyl Benzene	2.00%	0.61	0.6085	0.0122
Cumene	1.00%	0.61	0.3043	0.0061
Xylenes	12.00%	0.61	3.6511	0.0730
Toluene	15.00%	0.61	4.5639	0.0913
MTBE	7.50%	0.61	2.2819	0.0456
Total	39.95%		12.1551	0.2431

Notes:

*This HAP fraction is for unleaded gasoline. HAP emissions are mainly from the unloading process for trucks, which may have been used to ship gasoline.

Methodology

PTE of HAP before Control (tons/yr) = PTE of VOC after Control for Truck Loading (tons/yr) x HAP Fraction (%) / (1-Flare Control Efficiency %)
 PTE of HAP after Control (tons/yr) = PTE of VOC after Control for Truck Loading (tons/yr) x HAP Fraction (%)