

Florida Department of
Environmental Protection

Memorandum

To: Trina Vielhauer, Bureau of Air Regulation
Through: Greg DeAngelo, Office of Policy Analysis and Program Management
From: Tiffany Miesel, Office of Policy Analysis and Program Management
Date: July 30, 2010

Subject: Draft Air Permit No. 0610096-001-AC
INEOS New Planet BioEnergy—Indian River County BioEnergy Facility

Attached for your review is a draft air construction permit package for the planned facility in Indian River County that will produce approximately 8 million gallons per year of ethanol from a biomass feedstock consisting of vegetative yard waste and clean woody construction and demolition debris.

The attached Technical Evaluation and Preliminary Determination document provides a detailed description of the project and the rationale for permit issuance.

This project is not subject to the rules for the Prevention of Significant Deterioration. Day 90 of the permitting time clock is September 5, 2010. I recommend your approval of the attached draft permit package.

Attachments

TLV/gpd/tkm

P.E. CERTIFICATION STATEMENT

PERMITTEE

INEOS New Planet BioEnergy
3030 Warrenville Road, Suite 650
Lisle, Illinois 60532

Draft Permit No. 0610096-001-AC

Indian River County BioEnergy Facility
Biomass to Ethanol Production
Indian River County, Florida

Authorized Representative:
Mr. David King, President

PROJECT DESCRIPTION


The primary feedstock for the facility will be vegetative yard waste and land clearing debris collected by Indian River County's curbside collection program or delivered by the public to one of the county's collection centers. On an annual average, yard waste will make up approximately 80 percent of the feedstock. The remainder of the biomass feedstock will consist of clean woody construction and demolition debris, currently collected by the county in a dedicated cell at the sanitary landfill.

The INEOS bio ethanol technology process will gasify the biomass feedstock. The organic material will not be directly combusted; instead, oxygen will be supplied to the gasifier which converts the feed material into a synthetic gas (syngas). This syngas will not be directly combusted; instead, it will be cleaned and cooled and then fed into a fermentation system where proprietary bacterial metabolic action will convert it into ethanol. Distillation, dehydration, storage and truck loadout steps will follow for the ethanol. Off gases from the fermentation process will be routed to a boiler for combustion. Steam from the fermentation vent gas boiler—as well as steam from waste heat recovery at the gasifiers—will be routed to a turbine to generate electricity.

This project is subject to the general preconstruction review requirements in Rule 62-212.300, Florida Administrative Code (F.A.C.). The Department's full review of the project and rationale for issuing the draft permit is provided in the Technical Evaluation and Preliminary Determination. The Department reviewed an air quality analysis prepared by the applicant. The Department has concluded that emissions from the project will not cause or contribute to a violation of any state or federal ambient air quality standards.

The Department's preliminary determination is that the project will not constitute a new major stationary source, and that the facility will not be subject to PSD preconstruction review. Emissions at the facility will come from several sources, and the applicant has proposed various control measures and operational limitations so that potential emissions of all pollutants are less than 100 TPY, including the following: follow best management practices for handling feedstock; limit the annual fuel usage for the diesel engine powering the feedstock grinder; limit the VOC emissions from the feedstock dryer exhaust; restrict the amount of municipal solid waste to be used as feedstock; apply the emissions limitations of Title 40, Code of Federal Regulations (C.F.R.), Part 60, Subpart AAAA to the vent gas boiler exhaust; and cap the annual hours of operation for the emergency flares.

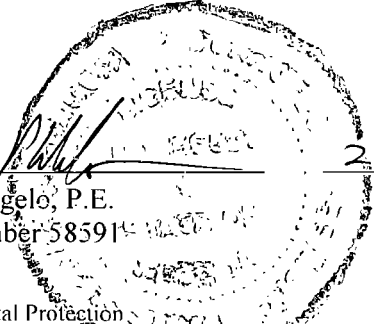
I HEREBY CERTIFY that the air pollution control engineering features described in the above referenced application and subject to the proposed permit conditions provide reasonable assurance of compliance with applicable provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Chapters 62-4 and 62-204 through 62-297. I have not evaluated and I do not certify, however, any other aspects of the proposal (including, but not limited to, the electrical, civil, mechanical, structural, hydrological, geological, bacteriological and meteorological features).



Gregory P. DeAngelo, P.E.
Registration Number 58591

28 July 2010

(Date)





Florida Department of Environmental Protection

Bob Martinez Center
2600 Blairstone Road
Tallahassee, Florida 32399-2400

Charlie Crist
Governor
Jeff Kottkamp
Lt. Governor
Michael W. Sole
Secretary

Sent by Electronic Mail – Received Receipt Requested

Mr. David King
President
INEOS New Planet BioEnergy
3030 Warrenville Road, Suite 650
Lisle, Illinois 60532

Re: Draft Air Permit No. 0610096-001-AC
INEOS New Planet BioEnergy
Waste-to-Ethanol Production Facility

Dear Mr. King:

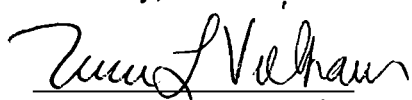
On February 10, 2010, you submitted an application for an air construction permit subject to the preconstruction review requirements of Rule 62-212.300, Florida Administrative Code.

The purpose of the project is to construct the new Indian River County BioEnergy Facility that will be located near Vero Beach in Indian River County, at the former location of an Ocean Spray citrus processing facility at the intersection of 74th Avenue and Oslo Road (near Interstate 95).

Enclosed are the following documents: Written Notice of Intent to Issue Air Permit; Public Notice of Intent to Issue Air Permit; Technical Evaluation and Preliminary Determination; and Draft Permit with Appendices.

The Public Notice of Intent to Issue Air Permit is the actual notice that you must have published in the legal advertisement section of a newspaper of general circulation in the area affected by this project. If you have any questions, please call the project contact, Tiffany Miesel, at 850/921-8306.

Sincerely,

 8/2/10
Trina Vielhauer, Chief (Date)
Bureau of Air Regulation

Enclosures

TLV/gpd/tkm

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

*In the Matter of an
Application for Air Permit by:*

INEOS New Planet BioEnergy
3030 Warrenville Road, Suite 650
Lisle, Illinois 60532

Draft Permit No. 0610096-001-AC

Indian River County BioEnergy Facility
Biomass to Ethanol Production
Indian River County, Florida

Authorized Representative:
Mr. David King, President

Facility Location: INEOS New Planet BioEnergy proposes to construct the new Indian River County BioEnergy Facility, which will be located near Vero Beach in Indian River County, at the former location of an Ocean Spray citrus processing facility at the intersection of 74th Avenue and Oslo Road (near Interstate 95).

Project: The project is the construction of a facility to produce approximately 8 million gallons per year of ethanol from a biomass feedstock consisting of vegetative yard waste and clean woody construction and demolition (C&D) debris. Some small amounts of municipal solid waste will also be authorized for use as feedstock on a limited, trial basis. The project is subject to the preconstruction review requirements of Rule 62-212.300, Florida Administrative Code (F.A.C.). The applicant has requested certain limitations on operation and emission levels so as to avoid Prevention of Significant Deterioration (PSD) applicability under Rule 62-212.400, F.A.C. A determination of best available control technology (BACT) was therefore not required.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210 and 62-212, F.A.C. The proposed project is not exempt from air permitting requirements and an air permit is required to perform the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at the address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above.

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Public Notice: Pursuant to Section 403.815, F.S. and Rules 62-110.106 and 62-210.350, F.A.C., you (the applicant) are required to publish at your own expense the enclosed Public Notice of Intent to Issue Air Permit (Public Notice). The Public Notice shall be published one time only as soon as possible in the legal advertisement section of a newspaper of general circulation in the area affected by this project. The

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

newspaper used must meet the requirements of Sections 50.011 and 50.031, F.S. in the county where the activity is to take place. If you are uncertain that a newspaper meets these requirements, please contact the Permitting Authority at the address or phone number listed above. Pursuant to Rule 62-110.106(5) and (9), F.A.C., the applicant shall provide proof of publication to the Permitting Authority at the above address within 7 days of publication. Failure to publish the notice and provide proof of publication may result in the denial of the permit pursuant to Rule 62-110.106(11), F.A.C.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 14 days from the date of publication of this Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by the applicant or any of the parties listed below must be filed within 14 days of receipt of this Written Notice of Intent to Issue Air Permit. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of the attached Public Notice or within 14 days of receipt of this Written Notice of Intent to Issue Air Permit, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

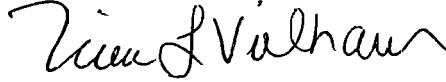
A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all disputed issues of material fact; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

WRITTEN NOTICE OF INTENT TO ISSUE AIR PERMIT

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Written Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.

Executed in Tallahassee, Florida.



Trina Vielhauer, Chief
Bureau of Air Regulation

CERTIFICATE OF SERVICE

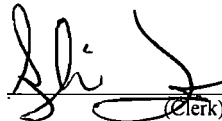
The undersigned duly designated deputy agency clerk hereby certifies that this Written Notice of Intent to Issue Air Permit package (including the Written Notice of Intent to Issue Air Permit, the Public Notice of Intent to Issue Air Permit, the Technical Evaluation and Preliminary Determination and the Draft Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on

8/2/10 to the persons listed below.

- David King, INEOS Bio: david.king@ineos.com
- Daniel Cummings, INEOS Bio: dan.cummings@ineos.com
- Dr. Mark Niederschulte, INEOS Bio: mark.niederschulte@ineos.com
- Joseph Curro, P.E., Camp Dresser & McKee Inc.: currojpcdm.com
- Cynthia Hibbard, Camp Dresser & McKee Inc.: hibbardcs@cdm.com
- Gretchen Janssen, Camp Dresser & McKee Inc.: janssenge@cdm.com
- Caroline Shine, DEP Central District Office: caroline.shine@dep.state.fl.us
- Vickie Gibson, DEP BAR Reading File: victoria.gibson@dep.state.fl.us
- Joy Ezell: hopeforcleanwater@yahoo.com

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.


(Clerk)

8/2/10
(Date)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

Florida Department of Environmental Protection
Division of Air Resource Management, Bureau of Air Regulation

Draft Air Permit No. 0610096-001-AC
INEOS New Planet BioEnergy, Indian River County Facility
Indian River County, Florida

Applicant: The applicant for this project is INEOS New Planet BioEnergy. The applicant's authorized representative and mailing address is: David King, President, INEOS New Planet BioEnergy, 3030 Warrenville Road, Suite 650, Lisle, Illinois, 60532.

Facility Location: INEOS New Planet BioEnergy proposes to construct the new Indian River County BioEnergy Facility, which will be located near Vero Beach in Indian River County, at the former location of an Ocean Spray citrus processing facility at the intersection of 74th Avenue and Oslo Road (near Interstate 95).

Project: The project is the construction of a facility to produce approximately 8 million gallons per year of ethanol from a biomass feedstock consisting of vegetative yard waste and clean woody construction and demolition debris. Some small amounts of municipal solid waste will also be authorized for use as feedstock on a limited, trial basis. The project is subject to the preconstruction review requirements of Rule 62-212.300, Florida Administrative Code (F.A.C.). The applicant has requested certain limitations on operation and emission levels so as to avoid Prevention of Significant Deterioration (PSD) applicability under Rule 62-212.400, F.A.C. A determination of best available control technology was therefore not required.

The INEOS bio ethanol technology process will gasify the biomass feedstock. The organic material will not be directly combusted; instead, oxygen will be supplied to the gasifier which converts the feed material into a synthetic gas. The synthetic gas will be cleaned and cooled and then fed into a fermentation system where proprietary bacterial metabolic action will convert the synthetic gas into ethanol. Distillation, dehydration, storage and truck loadout steps will follow for the ethanol. Off gases from the fermentation process, however, will be routed to a boiler for combustion. Steam from the fermentation vent gas boiler—as well as steam from waste heat recovery at the gasifiers—will be routed to a turbine to generate electricity.

Based on the air permit application, the project will result in emissions increases of: 50.4 tons per year (TPY) of carbon monoxide (CO); 99.3 TPY of nitrogen oxides (NO_x); 46.2 TPY of particulate matter with a mean diameter of 10 micrometers (µm) or less (PM₁₀); 45.4 TPY of PM with a mean diameter of 2.5 µm or less (PM_{2.5}); 89.5 TPY of sulfur dioxide (SO₂); 87.4 TPY of volatile organic compounds (VOC) and 0.05 TPY of lead (Pb).

The Department's preliminary determination is that the project will not constitute a new major stationary source, and that the facility will not be subject to PSD preconstruction review. Emissions at the facility will come from several sources, and the applicant has proposed various control measures and operational limitations so that potential emissions of all pollutants are less than 100 TPY, including the following: follow best management practices for handling feedstock; limit the annual fuel usage for the diesel engine powering the feedstock grinder; install a VOC control device for the feedstock dryer exhaust; restrict the amount of municipal solid waste to be used as feedstock; apply the emissions limitations of Title 40, Code of Federal Regulations (C.F.R.), Part 60, Subpart AAAA to the vent gas boiler exhaust; and cap the annual hours of operation for the emergency flares.

An air quality analysis for comparison to the state and national ambient air quality standards was requested by the Department and performed by the applicant. Based on this analysis the Department has concluded that emissions from the project will not cause or contribute to a violation of any state or federal ambient air quality standards.

Permitting Authority: Applications for air construction permits are subject to review in accordance with the provisions of Chapter 403, Florida Statutes (F.S.) and Chapters 62-4, 62-210 and 62-212, F.A.C. The proposed project is not exempt from air permitting requirements and an air permit is required to perform

(Public Notice to be Published in the Newspaper)

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

the proposed work. The Florida Department of Environmental Protection's Bureau of Air Regulation is the Permitting Authority responsible for making a permit determination for this project. The Bureau of Air Regulation's physical address is 111 South Magnolia Drive, Suite 4, Tallahassee, Florida 32301 and the mailing address is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. The Bureau of Air Regulation's phone number is 850/488-0114.

Project File: A complete project file is available for public inspection during the normal business hours of 8:00 a.m. to 5:00 p.m., Monday through Friday (except legal holidays), at address indicated above for the Permitting Authority. The complete project file includes the Draft Permit, the Technical Evaluation and Preliminary Determination, the application, and the information submitted by the applicant, exclusive of confidential records under Section 403.111, F.S. Interested persons may contact the Permitting Authority's project review engineer for additional information at the address and phone number listed above. In addition, electronic copies of these documents are available at the following web link:

http://www.dep.state.fl.us/air/emission/bioenergy/indian_river.htm

Notice of Intent to Issue Air Permit: The Permitting Authority gives notice of its intent to issue an air permit to the applicant for the project described above. The applicant has provided reasonable assurance that operation of the proposed equipment will not adversely impact air quality and that the project will comply with all applicable provisions of Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297, F.A.C. The Permitting Authority will issue a Final Permit in accordance with the conditions of the proposed Draft Permit unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, F.S. or unless public comment received in accordance with this notice results in a different decision or a significant change of terms or conditions.

Comments: The Permitting Authority will accept written comments concerning the proposed Draft Permit for a period of 14 days from the date of publication of this Public Notice. Written comments must be received by the Permitting Authority by close of business (5:00 p.m.) on or before the end of the 14-day period. If written comments received result in a significant change to the Draft Permit, the Permitting Authority shall revise the Draft Permit and require, if applicable, another Public Notice. All comments filed will be made available for public inspection.

Petitions: A person whose substantial interests are affected by the proposed permitting decision may petition for an administrative hearing in accordance with Sections 120.569 and 120.57, F.S. The petition must contain the information set forth below and must be filed with (received by) the Department's Agency Clerk in the Office of General Counsel of the Department of Environmental Protection, 3900 Commonwealth Boulevard, Mail Station #35, Tallahassee, Florida 32399-3000 (Telephone: 850/245-2241; Fax: 850/245-2303). Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), F.S., must be filed within 14 days of publication of this Public Notice or receipt of a written notice, whichever occurs first. Under Section 120.60(3), F.S., however, any person who asked the Permitting Authority for notice of agency action may file a petition within 14 days of receipt of that notice, regardless of the date of publication. A petitioner shall mail a copy of the petition to the applicant at the address indicated above, at the time of filing. The failure of any person to file a petition within the appropriate time period shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, F.S., or to intervene in this proceeding and participate as a party to it. Any subsequent intervention (in a proceeding initiated by another party) will be only at the approval of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, F.A.C.

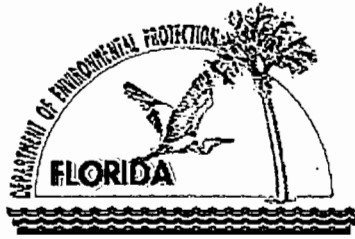
A petition that disputes the material facts on which the Permitting Authority's action is based must contain the following information: (a) The name and address of each agency affected and each agency's file or identification number, if known; (b) The name, address, and telephone number of the petitioner; the name, address and telephone number of the petitioner's representative, if any, which shall be the address for service purposes during the course of the proceeding; and an explanation of how the petitioner's substantial interests will be affected by the agency determination; (c) A statement of when and how each petitioner received notice of the agency action or proposed decision; (d) A statement of all

PUBLIC NOTICE OF INTENT TO ISSUE AIR PERMIT

disputed issues of material fact; (e) A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the agency's proposed action; (f) A statement of the specific rules or statutes the petitioner contends require reversal or modification of the agency's proposed action including an explanation of how the alleged facts relate to the specific rules or statutes; and (g) A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the agency to take with respect to the agency's proposed action. A petition that does not dispute the material facts upon which the Permitting Authority's action is based shall state that no such facts are in dispute and otherwise shall contain the same information as set forth above, as required by Rule 28-106.301, F.A.C.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Permitting Authority's final action may be different from the position taken by it in this Public Notice of Intent to Issue Air Permit. Persons whose substantial interests will be affected by any such final decision of the Permitting Authority on the application have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

Mediation: Mediation is not available in this proceeding.



**TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION**

******* DRAFT *******

APPLICANT

INEOS New Planet BioEnergy
3030 Warrenville Road, Suite 650
Lisle, Illinois 60532

Indian River County BioEnergy Facility
ARMS Facility ID No. 0610096

PROJECT

Draft Permit No. 0610096-001-AC
Biomass to Ethanol Production

COUNTY

Indian River County, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Division of Air Resource Management
2600 Blair Stone Road, MS#5500
Tallahassee, Florida 32399-2400

July 30, 2010

1. GENERAL PROJECT INFORMATION

1.1 Facility Description and Location

INEOS is a large petrochemical and specialty chemical manufacturer headquartered in the United Kingdom. It consists of 17 businesses with 64 manufacturing facilities in 14 countries, and with annual sales of around \$47 billion, it is the third largest chemical company in the world.¹ INEOS New Planet BioEnergy, LLC (INPB) is proposing to construct a facility in Indian River County (IRC) to produce ethanol from a biomass feedstock consisting of mostly vegetative yard waste and clean woody construction and demolition (C&D) debris. The INPB IRC facility will be located near Vero Beach, Florida, at the former location of an Ocean Spray citrus processing facility at the intersection of 74th Avenue and Oslo Road near Interstate 95. The UTM coordinates are Zone 17, 550.7 km East and 3,051.3 km North.



Source: <http://geology.com/state-map/maps/florida-county-map.gif>



Source: CDM (permit application for project)

Figure 1 - Indian River County, Florida, and Proposed Location of Facility

The proposed facility is expected to produce up to 8 million gallons of ethanol per year, and although it will generate a small amount of electricity available for commercial use (about 2 megawatts), it will be categorized under Standard Industrial Classification (SIC) Code No. 2869—Industrial Organic Chemicals, Not Elsewhere Classified.

1.2 Process Description

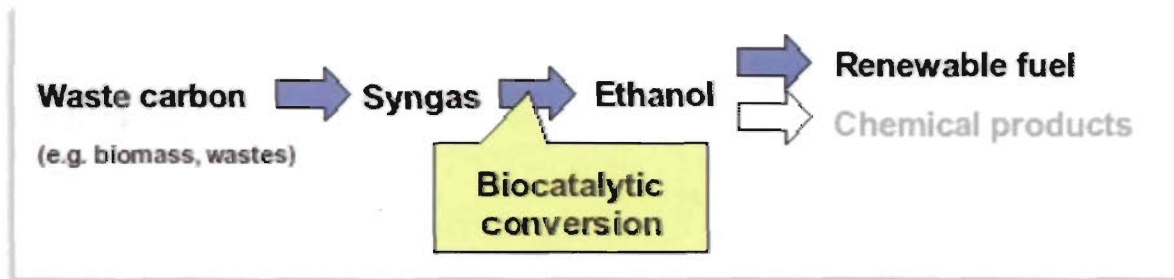
The primary feedstock for the facility will be vegetative yard waste and land clearing debris collected by the IRC Solid Waste Disposal District (SWDD) curbside collection program or delivered by the public to one of the IRC SWDD collection centers. On an annual average, yard waste will make up approximately 90 percent of the feedstock. The remainder of the biomass feedstock may consist of clean woody C&D debris, currently collected by IRC SWDD in a dedicated cell at the sanitary landfill. In addition, some municipal solid waste (MSW) may be used on a trial basis to demonstrate its feasibility.

The INEOS bio ethanol technology process will gasify the biomass feedstock. The organic material will not be directly combusted; instead, oxygen will be supplied to the gasifier which converts the feed material into a synthetic gas (syngas) consisting of carbon monoxide (CO), carbon dioxide (CO₂), hydrogen (H₂) and other hydrocarbons.

This syngas will not be directly combusted either. It will be cleaned and cooled and then fed into a fermentation system where proprietary bacterial metabolic action converts the syngas into ethanol. The

ethanol will then be distilled, dehydrated, denatured, stored and loaded into dedicated ethanol tanker trucks. Off gases from the fermentation process, however, will be routed to a boiler for combustion. Steam from the fermentation vent gas boiler—as well as steam from waste heat recovery at the gasifiers—will be routed to a turbine to generate electricity.

Figure 2 - Simplified INEOS Bio Ethanol Technology Process.



Source: http://ineosbio.com/60-Technology_platform.htm

Figure 3 – Gasification System and Ethanol Production (Fermentation and Distillation).



Source: http://ineosbio.com/60-Technology_platform.htm

1.3 Primary Regulatory Categories

The facility is not a major source of hazardous air pollutants (HAP). The facility has no units subject to the acid rain provisions of the Clean Air Act. The facility is not a major stationary source. The facility is a major source of air pollution (Title V source).

1.4 Project Description

On February 10, 2010, INPB submitted an application to the Florida Department of Environmental Protection (DEP) for a minor source air construction permit to build a new facility that will convert waste biomass to ethanol. The permit process will establish various federally enforceable limitations on the facility's potential to emit certain pollutants. These emissions limitations will ensure that the facility emits air pollutants at annual rates less than the emissions thresholds for the prevention of significant deterioration (PSD) pre-construction permitting program. Without these limitations in place, the facility would have the potential to emit over the applicable thresholds.

The design and construction of the INPB IRC facility will be informed by six years of work done at the INEOS Bio pilot plant in Fayetteville, Arkansas, to develop, demonstrate and optimize the INEOS Bio ethanol technology.² The INPB IRC facility will demonstrate this technology on a full commercial scale.

TECHNICAL EVALUATION & PRELIMINARY DETERMINATION

Table 1 lists—by emission unit identification number (EU No.)—the new emission units that will be added by this project. Figure 3 is a simplified process flow diagram, provided by the applicant, with annotations showing the new emission units.

Table 1 – List of Emission Units.

EU No.	Emission Unit Description
001	Materials Handling Area
002	Feedstock Dryers No. 1 and No. 2
003	Gasification, Fermentation and Distillation Systems
004	Distillation Unit Fugitive Emissions
005	Desulfurization Unit Oxidation Tank
006	Vent Gas Boiler
007	Tank Farm
008	Loadout Flare
009	Gasifier Flare
010	Syngas Flare

(001) Materials Handling Area

Trucks will deliver vegetative waste and clean woody construction debris to the tipping floor of the materials handling area. Vegetative waste will consist primarily of yard waste from the county's curbside collection program or yard waste or land clearing debris delivered to the county's collection centers. Construction debris will be material diverted from the dedicated C&D cell of the county landfill. The materials handling area will include equipment for storage, handling, grinding and screening of the feedstock.

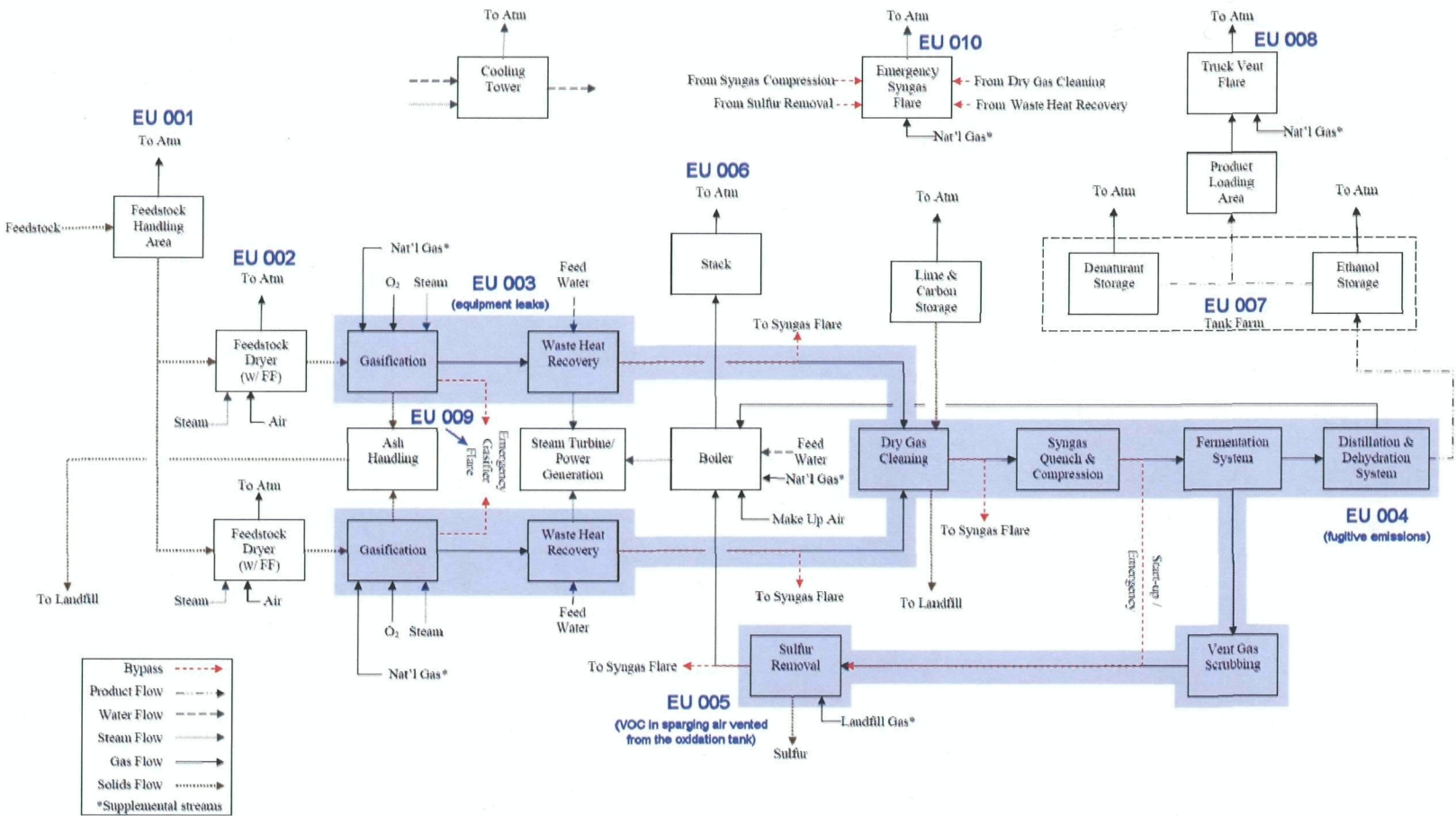
To help control fugitive particulate matter (PM) emissions, biomass (vegetative matter, yard waste and untreated wood) that exceeds the storage capacity of the tipping floor will be stored outdoors on hard-packed gravel. The facility will store all MSW in the enclosed feedstock building. The associated conveyer equipment will be unenclosed. To help control odors, and to meet state regulations regarding the temporary storage of putrescible waste, the enclosed MSW storage area will be sized to accommodate a maximum of two days worth of MSW feedstock. Any MSW stockpiled for more than 48 hours will be returned to the landfill.

Trucks delivering the feedstock will be accepted on a twelve hours per day, seven days per week basis, excluding some holidays – similar to present landfill operation hours. Trucks removing ash will operate on the same schedule. Feedstock deliveries are approximately 100 to 200 trips per day with much of this traffic being diverted from its current destination, the landfill just beyond the plant site entrance. New feedstock truck trips are estimated to be less than 30 trips daily. Three trucks per day for ash removal are anticipated and will travel on paved roads. Front-end loaders will be used to maneuver the materials from the truck tipping floor to the storage and processing areas.

The permit will require robust best management practices to minimize fugitive emissions from the materials handling area. The best management practices will also include requirements to screen the input material to ensure that no wood treated with chromated copper arsenate is used as feedstock.

The materials handling area will include a feedstock grinder so that the facility can accept vegetative waste, C&D material and MSW that has not yet been shredded. The grinder will be powered by a Caterpillar C18 ACERT industrial diesel engine rated for 765 brake horsepower at 2100 revolutions per minute, or an equivalent engine from another manufacturer. The engine will meet federal Tier 2 emissions requirements. Emissions from the diesel engine will be controlled by limiting the annual fuel use to 58,980 gallons, which equates to about 1570 hours of operation.

Figure 4 – INPB IRC Facility Process Flow Diagram.



Source: CDM (permit application for project)

Indian River County BioEnergy Facility
Biomass to Ethanol Production

(002) Feedstock Dryers No. 1 and No. 2

The two feedstock dryers will receive shredded feedstock from the storage piles and use low-pressure steam, provided by the boiler and heat recovery systems, to reduce the feedstock moisture to around 15 percent. The dryers will use 8,960 pounds per hour of steam to heat the inlet to about 250 °F. Flue gas from the dryers will be vented to the atmosphere through a dust control system. The dried feedstock will then be sent to the gasifiers by way of a covered conveyor system.

PM emissions from the dryer exhaust will be controlled with a baghouse. The permit will require volatile organic compound (VOC) emissions to be limited to 3.8 lb/hr. The permit will authorize installation of a control device such as a biofilter or a regenerative thermal oxidizer (RTO) to control VOC emissions.

Figure 5 – Shredded Vegetative Feedstock Storage and Drying at the Arkansas Pilot Plant.



Source: <http://www.ineosbio.com/80-Video.htm>

(003) Gasification, Fermentation and Distillation Systems

Two gasifiers will convert the shredded input feedstock to syngas through a two-stage process. First, a dedicated ram feeder pushes dried feedstock into the lower gasification zone. During startup, natural gas will be introduced into the lower zone burner to bring the system up to speed, but once steady operation is achieved, only additional oxygen will need to be supplied. There will be no vent from the gasifier, other than emergency pressure relief through diversion to the gasifier flare (EU No. 009).

Following gasification, the syngas is cleaned and cooled through several steps. First, two heat recovery systems will cool the syngas while preheating the boiler feed water. The two streams of cooled syngas will then combine before passing through dry gas clean-up, where lime and activated carbon injection will remove halogens, metals, tars and ammonia. A fabric filter will recover the spent lime and carbon, and the exhaust from the fabric filter is routed to a quench tower for additional cooling. The cool, dry, clean syngas will then be ready for introduction to the fermentation system.

In the fermentation system, proprietary bacteria will act to convert the syngas to ethanol. The fermentation system will include nutrient feed tanks and alkali for pH control. Liquid ethanol will be sent to the distillation system, and vent gas from the fermentor will be routed to a vent gas scrubber.

The distillation system will accept the filtered fermentation broth as well as the vent gas scrubber bottoms. The distillation tower will receive the broth (a mixture of water, ethanol, acetic acid and heavy alcohols) from the distillation feed tank, and overhead vapor leaving the distillation tower will be collected in a reflux drum and pumped back into the tower. There will be off-gas from the feed tank and the reflux drum. Off-gas from both will be routed to the vent gas boiler (EU No. 006). There will also be some fugitive emissions from the distillation system (EU No. 004).

The fermentation system vent gas scrubber will recover ethanol from the vent gas before routing it to the desulfurization unit. The desulfurization unit will use an iron chelate solution to remove hydrogen sulfide (H₂S) from the vent gas prior to combustion in the vent gas boiler; this will greatly reduce emissions of sulfur dioxide (SO₂) from the vent gas boiler. The spent iron chelate solution will be routed to an oxidation tank where air sparging will recharge it.

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Air sparging, in this case, is essentially allowing contact between air and the iron-chelate solution where oxygen in the air can be absorbed by the solution and oxidize the ferrous iron back to its ferric state.³

The desulfurization unit will also pretreat any landfill gas that is to be fired in the vent gas boiler.

(004) Distillation Unit Fugitive Emissions

Vents from the batch production fermentation, distillation and dehydration equipment will all be collected and either recirculated, sent to the vent gas scrubber or routed to the vent gas boiler. There will be, however, some fugitive emissions from the distillation and fermentation processes. The applicant estimated fugitive emissions by employing a calculation approach used in a recent permit application.⁴

(005) Desulfurization Unit Oxidation Tank

The iron chelate solution in the desulfurization unit may also capture some VOC from the vent gas stream. Any captured VOC will be emitted from the oxidation tank during the air sparging process.

(006) Vent Gas Boiler

The vent gas boiler will accept natural gas, landfill gas, vent gas from the desulfurization unit, off-gas from the distillation feed tank and off-gas from the distillation column reflux drum. A nominal 50 million British thermal units (MMBTU) per hour boiler—equipped with low nitrogen oxide (NO_x) burners—will combust these gases to provide steam. The steam will be used in the gasifiers, feedstock dryers, and a steam turbine to produce electricity. The electricity will power the plant, with some additional generation to be commercially sold on the electric grid.

(007) Tank Farm

The facility will install five internal floating roof storage tanks: two shift tanks, a re-run tank, a denaturant tank and a product storage tank. Each shift tank will be capable of storing the ethanol produced during a 14 hour period. The re-run tank will be the same size as the other two temporary ethanol holding tanks (shift tanks). The denaturant tank will store gasoline. The 8 million gallons per year of ethanol expected to be produced by the facility will be denatured with gasoline to yield 8.42 million gallons per year of final product. Prior to loadout, the denatured ethanol will be stored in the product storage tank.

There will be other smaller miscellaneous storage tanks, such as those that store nutrients and alkali for the fermentation process, that will not be included as part of this emission unit.

(008) Loadout Flare

The product loading area will be capable of transferring 128 gallons of denatured ethanol per minute to ethanol tanker trucks. The loadout area will include equipment to capture ethanol vapor displaced from the tanker trucks. This captured vapor will be routed to a flare for emissions control.

(009) Gasifier Flare

The gasifier flare will provide emergency protection for the gasification units. Normally, all of the gas generated in the gasifiers will be routed to fermentation through cooling and cleaning process steps. In the event these steps are not operative, while the gasifiers are shutting down, emergency venting to a dedicated flare will occur. The gasifier flare will be enclosed and equipped with a natural gas fueled pilot light. The gasifier flare is expected to operate a maximum of 100 hours per year.

(010) Syngas Flare

The syngas flare will be used as emergency backup during malfunctions when the vent gas boiler is inoperative. It will have a continuously fired pilot light fueled with natural gas. The same syngas vent streams that are normally routed to the boiler may be routed to the syngas flare, including those from waste heat recovery, dry gas cleaning, desulfurization, fermentation, distillation and dehydration. This emergency control device is expected to operate less than 300 hours per year.

1.5 Processing Schedule

- February 10, 2010: DEP received the application for an air pollution construction permit.
- March 10: DEP requested additional information.
- March 24: DEP received additional information (partial response that addressed feedstock handling, possible applicability of federal rules for air oxidation units, emergency flare use and procedures to detect and repair equipment leaks).
- March 29: DEP received additional information (partial confidential response that addressed temperature profiles, residence times and syngas composition).
- June 8: DEP received additional information (partial response that included an air dispersion modeling analysis, an updated site plan and additional information about the on-site feedstock grinder).
- July 30: DEP distributed written Intent to Issue Air Permit and posted documents.

2. APPLICABLE REGULATIONS

2.1 State Regulations

This project is subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize DEP to establish rules and regulations regarding air quality as part of the Florida Administrative Code (F.A.C.). This project is subject to the applicable rules and regulations defined in the following chapters of the F.A.C.

<u>Chapter</u>	<u>Description</u>
62-4	Permitting Requirements
62-204	Ambient Air Quality Requirements, PSD Increments and Federal Regulations Adopted by Reference
62-210	Permits Required, Public Notice, Emissions Computation and Reporting, Stack Height Policy, Circumvention, Excess Emissions and Forms
62-212	Stationary Sources Preconstruction Review Rule 62-212.300—General Preconstruction Review Requirements Rule 62-212.400—PSD (PSD applicability review only)
62-213	Operation Permits for Major Sources of Air Pollution
62-296	Stationary Sources Emission Standards
62-297	Stationary Sources Emissions Monitoring

Section 3 of this report includes a discussion of PSD applicability and the preconstruction review requirements of Rule 62-212.400, F.A.C. Section 4 contains additional details for the other applicable state regulations.

2.2 Federal Regulations

The U.S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (C.F.R.). Part 60 identifies New Source Performance Standards (NSPS) for a variety of industrial activities. Part 61 specifies National Emissions Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP provisions based on the Maximum Achievable Control Technology (MACT) for given source categories. Florida adopts these federal regulations in Rule 62-204.800, F.A.C., and stationary sources in Florida are required to comply with the adopted federal regulations as per Subsection 62-296.100(3), F.A.C. Section 4 of this report contains additional details for the applicable federal regulations.

3. PSD APPLICABILITY REVIEW

3.1 General PSD Applicability

Florida's PSD program, codified at Rule 62-212.400, F.A.C., applies to major stationary sources in areas that are currently in attainment with the state and federal Ambient Air Quality Standards (AAQS) for criteria pollutants (or in areas that are designated as unclassifiable for these pollutants). As defined in Rule 62-210.200, F.A.C., a facility is considered a major stationary source if it emits or has the potential to emit 250 tons per year (TPY) or more of any PSD pollutant, or 100 TPY or more of any PSD pollutant if the facility belongs to one of 28 listed categories of stationary sources.

PSD pollutants consist of the following: CO; NO_x; SO₂; PM with an aerodynamic diameter of 10 microns or less (PM₁₀); PM with an aerodynamic diameter of 2.5 microns or less (PM_{2.5}); VOC; lead (Pb); fluorides (F); sulfuric acid mist (SAM); H₂S; total reduced sulfur (TRS); reduced sulfur compounds; municipal waste combustor organics, metals and acid gases; MSW landfills emissions; mercury (Hg); and non-HAP, non-VOC ozone depleting substances (ODS).

The PSD rules apply to the construction of any new major stationary source or the major modification of an existing major stationary source. A new major stationary source is one not currently in existence and that will, when built, emit or have the potential to emit 250 TPY of *any* PSD pollutant (or 100 TPY for facilities on the list of 28 categories of stationary sources). Best Available Control Technology (BACT) must then be employed to minimize emissions of *each* PSD pollutant for which the new major stationary source emits or has the potential to emit above emissions thresholds known as significant emission rates. Significant emission rates vary by pollutant, and they are defined in Rule 62-212.200, F.A.C.

For existing major stationary sources, the procedures in Subsection 62-212.400(2), F.A.C., determine whether a project is a major modification. The first step is to calculate the baseline actual emissions, which are, essentially, the annual average emissions prior to the project. The procedure then compares pre-project baseline actual emissions to post-project emissions (either projected actual emissions or potential emissions). Different recordkeeping and permitting requirements apply depending on the applicability test. Regardless, the project is a major modification if the net emissions increase exceeds the significant emission rates. An existing major stationary source may be major because of the emissions of one PSD pollutant, but the permit for a major modification must include BACT level controls for *each* PSD pollutant that will experience a significant net emissions increase. (Netting is important, because eligible contemporaneous emissions increases and decreases can be taken into account when determining if a significant net emissions increase will occur.)

Rule 62-210.200, F.A.C., defines BACT as:

An emission limitation, including a visible emissions standard, based on the maximum degree of reduction of each pollutant emitted which the Department, on a case by case basis, taking into account:

- 1. Energy, environmental and economic impacts, and other costs;*
- 2. All scientific, engineering, and technical material and other information available to the Department; and*
- 3. The emission limiting standards or BACT determinations of Florida and any other state; determines is achievable through application of production processes and available methods, systems and techniques (including fuel cleaning or treatment or innovative fuel combustion techniques) for control of each such pollutant.*

If the Department determines that technological or economic limitations on the application of measurement methodology to a particular part of an emissions unit or facility would make the imposition of an emission standard infeasible, a design, equipment, work practice, operational standard or combination thereof, may be prescribed instead to satisfy the requirement for the

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application of BACT. Such standard shall, to the degree possible, set forth the emissions reductions achievable by implementation of such design, equipment, work practice or operation.

Each BACT determination shall include applicable test methods or shall provide for determining compliance with the standard(s) by means which achieve equivalent results.

In no event shall application of best available control technology result in emissions of any pollutant which would exceed the emissions allowed by any applicable standard under 40 CFR Parts 60, 61, and 63.

In addition, for new major stationary sources or major modifications to existing major stationary sources, applicants must provide an air quality analysis that evaluates the predicted air quality impacts resulting from the project. The air quality analysis must be performed for each PSD pollutant for which the new major stationary source is considered major, or for each PSD pollutant for which the major modification will cause a significant net emissions increase.

3.2 PSD Applicability for the Project

Applicant's Analysis. The INPB project is to be located in Indian River County, which is currently in attainment (or otherwise designated as unclassifiable) with respect to state and federal AAQS. The facility is a chemical process plant, which is one of the 28 listed categories of stationary sources, so the threshold of 100 TPY applies. The applicant has proposed certain operation and emissions limitations to limit the facility's potential to emit to less than 100 TPY for the PSD pollutants expected to be emitted above *de minimis* amounts. Therefore, the facility is not a new major stationary source, and the facility is not subject to PSD preconstruction review.

Table 2 contains the applicant's emissions estimates for PSD pollutants, taking into account the requested limits on operation and emissions. As shown in the table, the project will have potential emissions less than 100 TPY for all of the following: NO_x, CO, SO₂, VOC, PM₁₀, PM_{2.5} and Pb.

Table 2 – Summary of the Applicant's PSD Applicability Analysis.

Facility Emissions	Annual Emissions Rate (TPY)						
	NO _x	CO	SO ₂	VOC	PM ₁₀	PM _{2.5}	Pb
Feedstock Handling*	8.00	0.58	0.01	0.07	1.81	0.82	0
Feedstock Dryers				33.38	6.72	6.72	
Vent Gas Boiler	87.32	14.77	68.89	7.53	6.09	6.09	0.05
Oxidation Tank				33.90			
Distillation				0.46			
Gasifier Flare	0.62	11.57	5.16	0.36	0.26	0.26	
Syngas Flare	3.01	16.36	15.48	0.12			
Tank Farm				1.85			
Loading Area Flare	0.38	7.13		0.65	0.16	0.16	
Miscellaneous**				0.25	3.29E-02	3.29E-02	
TOTAL	99.33	50.41	89.54	78.57	15.07	14.08	0.05

* Includes emissions from vehicular traffic, feedstock grinding and fuel used by the grinder engine.

** Includes emissions from the activated carbon silo, lime silo, cooling tower and other storage tanks not part of the tank farm.

Emissions at the facility will come from several sources, and the applicant has proposed various control measures and operational limitations. For NO_x, SO₂ and CO, pre-treating the different streams that are routed to the vent gas boiler (EU No. 006) will keep emissions below the 100 TPY threshold. In fact, the boiler will essentially act as a VOC control device for a large portion of the facility. For VOC, control of emissions from the feedstock dryers (EU No. 002) will be the key to limiting total emissions at the facility

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to less than 100 TPY. For PM emissions, best operational practices will limit emissions associated with feedstock handling (EU No. 001). Limitations on the hours of permissible emergency flare use (i.e., the gasifier flare, EU No. 009, and the syngas flare, EU No. 010) will also be necessary to control CO.

DEP Review—Feedstock Handling (EU No. 001). Fugitive dust (PM₁₀ and PM_{2.5} emissions) will arise from three activities included in EU No. 001: vehicle traffic, materials handling and feedstock grinding. The applicant's calculations for PM₁₀ and PM_{2.5} emissions associated with vehicle traffic follow the approach outlined by the EPA in AP-42, Section 13.2.1, for paved roads.⁵ The applicant used reasonable estimates for the weight of the trucks, the silt content of the roads, the prevailing meteorological conditions, etc. The calculations assume that the roadways will be paved, and that vehicle acceptance will be on the order of 30 transfer trailer trucks (35 tons each, loaded) per day, 7 days per week, 52 weeks per year or 100 to 200 vehicles consisting mostly of local pickup trucks and lawn care service vehicles per 12-hour day, 7 days per week, 52 weeks per year.

For materials handling, the applicant followed AP-42, Section 13.2.4, which was developed for aggregate handling but seems to be the closest match in AP-42 to handling the shredded vegetative feedstock.⁶ The calculations are conservative, in that they assume a 17 percent moisture content for the material—this is the driest moisture content of the expected range for the feedstock, and will result in the highest PM₁₀ and PM_{2.5} estimates in the calculations. The calculations also assume four drops will occur during feedstock handling: when the truck offloads feedstock to the tipping floor, when front end loaders move feedstock to storage, when front end loaders move feedstock to the shredder and when front end loaders move feedstock to dryer. The calculations assume particulate emissions will result from each drop.

The application includes an on-site grinder or shredder in the feedstock handling area. Initially, the facility will likely be receiving pre-shredded material. The facility may, however, decide to install an on-site grinder and accept material that has not been shredded. In addition to particulate emissions from the shredding process, any use of an on-site grinder will generate fuel-burning emissions because it will be powered by a large, stationary, diesel-fired engine. To limit these fuel-burning emissions, the applicant has requested that the permit authorize only the use of ultra low sulfur diesel fuel (maximum 15 ppm sulfur by weight) for no more than 58,980 gallons per year. The engine under consideration delivers 765 brake horsepower and burns 37.6 gallons per hour at 100 percent load, so at full load, the engine will be constrained to approximately 1570 hours of operation per year.

For material grinding particulate emissions, the applicant was initially planning on using an AP-42 approach developed for mineral processing. To get a more realistic number to represent PM₁₀ and PM_{2.5} emissions from grinding vegetative matter, the applicant's consultant took a PM₁₀ monitor to the Martin County landfill. There, the consultant installed the monitor downwind of the landfill's grinding operation, measured ambient concentrations, took meteorological observations and ran air pollutant modeling software to back-calculate actual emissions. The applicant used this site-specific emission factor to estimate PM₁₀ and PM_{2.5} emissions from grinding operations.

DEP Review—Feedstock Dryers (EU No. 002). As woody material is exposed to heat, some of its organic content will volatilize and enter the atmosphere as VOC. To estimate VOC emissions from drying the shredded feedstock (vegetative yard waste and C&D debris), the applicant used the emission factors from AP-42 for direct natural gas fired rotary dryers used for drying softwood lumber in the particleboard manufacturing industry.⁷ Particleboard manufacturing includes plywood and other composite wood products, and using the particleboard emission factors for the facility's drying step appears reasonable. There are other AP-42 sections for different types of reconstituted wood products, such as oriented strandboard and waferboard. The particleboard AP-42 section is different from the other reconstituted wood products sections because of the feed material. Feed materials for particleboard manufacturing consist of "wood shavings, flakes, wafers, chips, sawdust, strands, [and] slivers." The feedstock for the INPB IRC facility will most closely match the feed material for particleboard manufacturing, so the VOC emissions from drying the feedstock should be comparable to the particleboard manufacturing dryer emissions in AP-42.

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Using these emission factors, the applicant estimates an uncontrolled total of 133.5 tons VOC per year from the two dryers. The applicant requests that the permit allow for the installation of a VOC control device if compliance testing confirms the need for one to comply with the VOC emission limit of 3.8 lb/hr per dryer to remain under the facility-wide 100 TPY major source threshold. A 75 percent reduction in VOC emissions can easily be accomplished through installation of a biofilter or an RTO. If testing confirms the need for VOC control, the applicant will submit the recommended design for a VOC control device to the Permitting Authority prior to installation.

DEP Review—Vent Gas Boiler (EU No. 006). The syngas will not be sent directly to the vent gas boiler; instead, the syngas will be cleaned and cooled and used as a raw material feed for the fermentation system. Off-gases from the fermentation and distillation system will be sent to the vent gas boiler, where they will be fired with supplemental natural gas as necessary. The vent gas boiler will accept natural gas, landfill gas, vent gas from the desulfurization unit, off-gas from the distillation feed tank and off-gas from the distillation column reflux drum. Because the vent gases will be treated prior to combustion and the vent gas boiler will be equipped with low NO_x burners, the exhaust will be relatively clean and a post-combustion control device will not be necessary. The applicant's vent gas boiler emission calculations are based on mass balances, vendor guarantees, bench testing and the emission limits contained in 40 C.F.R. part 60, subpart AAAA (the NSPS for small municipal waste combustion units).⁸

Regarding subpart AAAA, the federal definition of MSW means household, commercial/retail or institutional wastes, which includes yard waste but not C&D debris. To be conservative, for subpart AAAA applicability purposes, the capacity of each gasifier-to-vent gas boiler equipment train (183 tons per day) is assumed to be 100 percent MSW. Under the NSPS, this means the waste combustion units are "Class I Units" because the aggregate plant combustion capacity is 365 tons per day of MSW, which is greater than 250 tons per day (40 C.F.R. § 60.1045).

It is not explicitly clear, however, that subpart AAAA applies to the vent gas boiler because the subpart was written assuming direct combustion of MSW. At the INPB IRC facility, gasified MSW will be used in the fermentation process, with the resultant fermentation off-gases routed to the boiler. Regardless, the applicant and DEP have agreed that the vent gas boiler will be considered to be subject to subpart AAAA. The NSPS emission limits will apply at the outlet of the boiler—not at the gasifier outlet—and they will constrain the unit's potential to emit.

The applicant is confident that the vent gas boiler will be able to comply with these emission limits, based on its experience with bench testing and the pilot plant in Arkansas. Using the NSPS emission limits as the unit's potential to emit is appropriate, especially considering the facility will not be permitted to gasify MSW except on a limited trial basis. In addition, subpart AAAA requires the installation and operation of continuous emission monitoring systems (CEMS) for NO_x, SO₂ and CO and a continuous opacity monitoring system for visible emissions. Along with additional annual testing specified by the permit, this monitoring will provide ongoing assurance that the vent gas boiler emissions are below the limits specified in the NSPS—and that, by extension, total facility emissions will be below the PSD major source threshold.

DEP Review—Emergency Flares (EU Nos. 009 and 010). There will be no intentional venting of the gasification system; all of the syngas will be routed to cooling and cleaning prior to being directed to the fermentation system. In an upset or emergency condition, however, there will be a bypass line to an enclosed flare with a natural gas pilot light (EU No. 009). Expecting this flare to rarely be used, the applicant has requested a limit of 100 hours per year of operation for the emergency gasifier flare.

The applicant's calculations of potential emissions from the emergency gasifier flare use AP-42 emission factors for enclosed flares at MSW landfills.⁹ This is not unreasonable, given that some MSW will be allowed to be gasified. Flaring syngas generated from MSW is expected to represent worst-case conditions, as compared to flaring syngas produced from the primary feedstock (vegetative waste).

The syngas flare (EU No. 010) will similarly be used only in emergency, upset conditions, or in some instances of startup and shutdown, but it will protect a greater amount of equipment. The syngas flare

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will be used when the vent gas boiler is unavailable, so the following streams could potentially be diverted to it: syngas exiting waste heat recovery; syngas exiting dry gas cleaning; gases exiting the desulfurization unit; and gases exiting pressure relief valves in the fermentation, distillation and dehydration systems. The applicant has requested a limit of 300 hours per year of operation for the syngas flare, again expecting the flare to rarely be used.

The applicant's calculations of potential emissions from the syngas flare follow the procedures and emission factors in AP-42 for industrial flares.¹⁰ This section applies to flaring gaseous wastes at refineries and chemical plants; such wastes are typically composed of low molecular weight hydrocarbons with high heating value. The applicant's use of the industrial flares emission factors seems appropriate, given the expected makeup of the gases that could be routed to the syngas flare.

For both emergency flares, the applicant assumes 95 percent control of hydrogen chloride (HCl) and 98 percent control of VOC, H₂S and carbonyl sulfide (COS). These are reasonable assumptions for control efficiency.^{11,12}

DEP Review—Calculations for Other Emission Units. Emissions from the other emission units will have less of an overall impact. The applicant relied upon bench testing, mass balances, vendor guarantees, EPA software and air permits previously issued by DEP to calculate emissions. The calculation details are included with the permit application.

There appears to be an error in the calculation approach for emissions from the product storage tank. In the calculation software, this internal floating roof tank was assigned a throughput of over 41 million gallons per year of denatured ethanol, instead of 8 million gallons per year as indicated in the text of the application. This has little or no effect on the PSD applicability question, since the calculations overestimate the emissions by approximately 5 times and the total VOC emissions from the entire tank farm is less than 2 tons per year (even with the overstated emissions).

The oxidation tank in the desulfurization unit (EU No. 005) may be an important source of potential emissions for VOC. The applicant notes that while it will not be designed to capture VOC, the iron chelate solution could capture some VOC from the spent vent gas. Any such captured VOC would be released from the oxidation tank with the sparging air instead of being routed to the vent gas boiler for combustion. The applicant conservatively assumed the worst case scenario—that all of the VOC in the spent syngas stream is released from the oxidation tank.

DEP Analysis. Based on the available information, DEP believes the INPB IRC facility is unlikely to result in PSD-significant emissions increases based on the potential to emit of the new emission units. Accordingly, DEP intends to issue a draft air construction permit that includes the following requirements for the new facility:

- Annual fuel usage limit for the diesel engine powering the grinder (EU No. 001).
- Compliance testing to determine the need for a VOC control device for the feedstock dryer exhaust (EU No. 002).
- Limits on use of MSW in the gasification system (EU No. 003).
- 40 C.F.R. part 60, subpart AAAA, emissions limitations for the vent gas boiler (EU No. 006).
- Limits on annual hours of operation for the emergency flares (EU Nos. 009 and 010).
- Compliance with applicable state and federal regulations (multiple EU).

4. PROJECT REVIEW

4.1 State Regulations Review

Chapter 62-213, F.A.C. Operation Permits for Major Sources of Air Pollution (Title V). As discussed in section 3 of this technical evaluation, facility wide emissions of NO_x, CO, SO₂, VOC, PM₁₀ and PM_{2.5} will each be below 100 tons per year, and Pb emissions will be below 5 tons per year. Emissions of HAP from the vent gas boiler (EU No. 006) will consist primarily of benzene (4.82 tons per year) and HCl (3.42 tons per year). Some additional HAP may be emitted from the tank farm (EU No. 007) and other

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areas of the facility, but the facility as a whole will not emit 10 tons per year or more of any single HAP nor 25 tons per year or more of total HAP.

Although the potential emissions of these pollutants are below the relevant Title V permitting program applicability thresholds, the facility is still subject to the Title V air permitting program at Chapter 62-213, F.A.C. This is because the facility is subject to 40 C.F.R. part 60, subpart AAAA—the NSPS for small municipal waste combustors (MWC). Section 129(e) of the Clean Air Act requires Title V permits for all sources subject to one of the NSPS rules for solid waste combustion (which includes subpart AAAA).

Several pieces of equipment that are exempt from air construction permitting will likely be required to be listed as insignificant emissions units on the eventual Title V air operation permit, including the following: backup emergency power generator; lime storage silo; activated carbon storage silo; cooling towers; three temporary ethanol holding tanks; nine other miscellaneous storage tanks (e.g., the nutrient and vitamin mixture storage tanks); cold storage refrigeration equipment; laboratory equipment; brazing, soldering or welding equipment; fire suppression systems; petroleum lubrication systems; and use of fungicides, herbicides or pesticides.

Subsection 62-296.320(1), F.A.C. VOC Emissions. This rule forbids the storage, pumping, handling, processing, loading, unloading or use of VOC without applying vapor emission control devices or systems. At the INPB IRC facility, this rule could potentially apply to the gasification, fermentation and distillation systems (including EU Nos. 003, 004 and 005) as well as the tank farm (EU No. 007). The equipment included in these emissions units will be subject to either 40 C.F.R. part 60, subpart VVa or Kb, which will require control of VOC emissions and will therefore satisfy Subsection 62-296.320(1), F.A.C.

Subsection 62-296.320(2), F.A.C. Objectionable Odor Prohibited. This rule prohibits any person from discharging air pollutants which cause or contribute to objectionable odors. At the INPB IRC facility, with the exception of the raw material storage areas, all of the pollutant-laden streams will be combusted or controlled. This should eliminate the possibility of objectionable odors. No odors are expected from the vegetative waste or C&D debris, and odors will be controlled from MSW by limiting on-site storage to a maximum of 48 hours.

Paragraph 62-296.320(4)(b), F.A.C. General Visible Emissions Standard. This rule applies a visible emissions limit of 20 percent opacity for equipment that does not otherwise have limits for visible emissions or for PM. At the proposed facility, it will apply to the exhaust from the feedstock dryers.

Paragraph 62-296.320(4)(c), F.A.C. Unconfined Emissions of PM. This rule prohibits industrial facilities from emitting unconfined PM (such as dust from unpaved roads) without taking reasonable precautions. The activities and equipment that are considered reasonable precautions are included in the facility's permit. The facility's application includes a detailed best management practices plan that will be included in the permit. It includes practices such as paving roads and parking areas; street sweeping; landscaping; and covering the conveyor system for the dried feedstock material leaving the dryers.

Rule 62-296.416, F.A.C. Waste-to-Energy Facilities. The gasifiers at the INPB IRC facility will not combust or incinerate the feedstock. Instead, a starved-air pyrolysis heating in each gasifier will produce the syngas stream. Regardless, the applicant and DEP have agreed that the rules for small MSW combustors will apply as the best regulatory fit for this process. This includes Rule 62-296.416, F.A.C., which limits Hg emissions from waste-to-energy facilities. Rule 62-296.414, F.A.C., says, in part, that:

The requirements of this rule apply to all waste-to-energy facilities with charging rates of 40 tons per day or more. For those facilities subject to this rule and paragraph 62-204.800(8)(b), F.A.C., the mercury emissions limiting standards in this rule shall apply in place of the less restrictive mercury emission limiting standard set forth at paragraph 62-204.800(8)(b), F.A.C. However, the mercury percent reduction standard (85 percent) in paragraph 62-204.800(8)(b), F.A.C., shall apply in place of the less restrictive mercury percent reduction standard (80 percent) set forth in this rule.

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There is some understandable confusion in the application regarding this paragraph in the rule, because the rule citations are out of date. As it reads, it appears to indirectly reference 40 C.F.R. part 60, subpart AAAA—the applicable federal NSPS for small MWC—through a citation to paragraph 62-204.800(8)(b), F.A.C., which is where DEP adopts the federal NSPS rules by reference. The language would then imply that the state rule supersedes and replaces the federal NSPS. The state rules, however, cannot simply waive a federal requirement in this manner.

The citations in Rule 62-296.416, F.A.C., should be to paragraph 62-204.800(9)(b), F.A.C., which is another state rule (the emission guidelines for large MWC). The language cited above regards the interaction between two state rules: 62-296.416, F.A.C. which limits Hg emissions from waste-to-energy facilities and 62-204.800(9)(b), F.A.C. which is the emission guidelines for large MWC. The above-cited language is not intended to address the interaction between the state waste-to-energy facility Hg rule and the federal NSPS for small MWC (40 C.F.R. part 60, subpart AAAA). Both rules (Rule 62-296.416, F.A.C. and 40 C.F.R. part 60, subpart AAAA) apply independently to the proposed INPB IRC facility.

And, as an aside on a related topic, the facility is subject to the federal NSPS for small MWC (subpart AAAA), so it is not subject to the state emission guidelines for large MWC at Rule 62-296.800(9)(b), F.A.C. or the guidelines for small MWC at Rule 62-296.800(9)(e), F.A.C. Therefore, the language cited above regarding the interaction between Rule 62-296.414, F.A.C. and the state emission guidelines is irrelevant for this permitting action.

4.2 Federal Regulations Review (NSPS and NESHAP)

The following federal regulations are applicable to this project:

40 C.F.R. part 60, subpart A—NSPS General Provisions. The general provisions apply to all emissions units that are subject to one or more of the NSPS rules. They include common requirements that address compliance testing, monitoring, reporting and recordkeeping. They also include requirements for different types of control devices such as flares, which are applicable to EU Nos. 008, 009 and 010.

40 C.F.R. part 60, subpart AAAA—NSPS for Small MWC. As previously discussed, DEP and the applicant have agreed that subpart AAAA will apply to the gasification units/biological reactor/vent gas boiler train, with the point of comparison to the federal emission limits at the exit of the vent gas boiler stack (EU No. 006). The NSPS sets emissions standards for the following pollutants: PM, cadmium, Pb, Hg, SO₂, HCl, NO_x, municipal waste combustor organics and CO. The NSPS also requires operation and work practice standards, such as following good combustion practices, obtaining operator training and certification, handling fugitive emissions and implementing a materials separation plan. The applicant has prepared a materials separation and quality control plan, which will be attached as part of the draft permit for public notice and review.

Note that subpart AAAA requires the monitoring of the temperature of the flue gases at the inlet to the PM control device. Along with the activated carbon injection rate, the temperature recorded during a successful compliance test for dioxin/furan emissions becomes a monitored parameter for continuous compliance with the dioxin/furan emissions limit. In a typical small MWC, the PM control device would follow the combustion step, but for the INPB IRC facility, the syngas will be cleaned prior to fermentation, and the fermentation off-gases will be combusted in the vent gas boiler with no post-combustion PM control device.

Dioxin/furan can only form if there is chloride present in the flue gases and the temperature is within a certain range (i.e., between a minimum and maximum temperature window). The point of monitoring temperature is to ensure that the flue gas temperature quickly passes through the dioxin/furan temperature formation window and remains below the minimum temperature required for dioxin/furan formation. After reviewing the applicant's submitted information, DEP believes that monitoring the temperature at the inlet to the fabric filter in the dry gas sorbent injection area will satisfy these conditions and the NSPS monitoring requirement. The dry gas cleaning fabric filter is, in essence, the PM control device for the gasification units/biological reactor/vent gas boiler train.

TECHNICAL EVALUATION & PRELIMINARY DETERMINATION

40 C.F.R. part 60, subpart Kb—NSPS for Volatile Organic Liquid Storage Vessels. This rule establishes design and emissions control criteria for certain storage tanks, as a function of their size and the vapor pressure of the organic liquid being stored. At the proposed facility, only the product storage tank and the denaturant storage tank will be subject to subpart Kb (EU No. 007). The applicant intends to construct internal floating roofs for both tanks.

40 C.F.R. part 60, subpart IIII—NSPS for Stationary Compression Ignition Internal Combustion Engines.

40 C.F.R. part 63, subpart ZZZZ—NESHAP for Stationary Reciprocating Internal Combustion Engines.

There will be two diesel engines at the facility. One is an older model that was previously installed on the site by the Ocean Spray citrus processing facility. This engine, an emergency power generator rated at 500 kilowatts, is a 1989 model year Caterpillar engine that has not been modified or reconstructed since that time. (A change in ownership does not constitute a modification for this purpose.) As such, it will not be subject to either of these federal rules. The other diesel engine will power the grinder in the materials handling area (EU No. 001). It will be a new engine, and it will be subject to subpart IIII and subpart ZZZZ.

40 C.F.R. part 60, subpart VVa—NSPS for Equipment Leaks of VOC. This rule limits fugitive emissions of VOC from leaking equipment (such as pumps, valves, flanges and connectors) through the implementation of a site-specific leak detection and repair (LDAR) plan. The permit will require the applicant to submit a final LDAR plan once the facility is constructed. Until then, the facility will implement their temporary plan, attached to and made part of the permit.

The following federal regulations are not applicable to this project:

40 C.F.R. part 60, subpart NNN and RRR—NSPS for Distillation Operations and Reactor Processes.

These rules are potentially applicable, because they address some common practices (distillation and reactors) in the synthetic organic chemical manufacturing industry (SOCMI). Ethanol production in general is considered part of SOCMI. The EPA, however, has for many years taken the position that these two NSPS do not apply to ethanol totally produced through biological synthesis. The EPA recently made a relevant, case-by-case decision for another DEP permitting project and confirmed this position.¹³ And while EPA has not weighed in on this specific project, it seems consistent that subparts NNN and RRR would not apply to the biological production of ethanol at the proposed INPB IRC facility.

5. AIR QUALITY IMPACT ANALYSIS

5.1 Introduction

The proposed INPB IRC facility will demonstrate the biomass-to-ethanol technology at production levels. If successful, INEOS may someday decide to proceed with plans for a second, expanded phase. Such an expansion would require preconstruction review and permitting; it would also raise the question of project aggregation and whether this current determination of new source review applicability should have addressed a combined Phase I/Phase II facility.

To provide assurances that the project's environmental consequences are minimized, DEP requested that the applicant perform dispersion modeling to demonstrate whether, at full build-out, the combined Phase I/Phase II facility would exceed any national AAQS or PSD increments. Given the uncertain nature of the second phase, DEP requested that the dispersion modeling be based on the best available data for Phase I along with reasonable extrapolations for Phase II.

The applicant responded to the DEP request, providing air dispersion modeling results while identifying certain problems with a simplified scale-up from the current Phase I (8 million gallons of ethanol per year) to a full production-scale facility (around 50 million gallons per year). The applicant noted that the full production-scale facility is not certain, may be based on a different technology and may not be located at this same location. More importantly, the applicant pointed out that simply scaling the emissions by a factor of six would not account for design changes, improvements and process changes

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that would be expected to occur in the second phase. Therefore, the applicant provided results for only the Phase I Demonstration facility. The DEP review of the air dispersion modeling follows.

5.2 DEP Review and Summary

Even though the Demonstration facility remains a minor source, atmospheric dispersion modeling was performed for nitrogen dioxide (NO₂), CO, SO₂, PM₁₀ and PM_{2.5} emissions to determine predicted impacts in the vicinity of the facility for comparison with the Florida and national ambient air quality standards (AAQS). The most recently available version of the AERMOD modeling system was used. AERMOD is currently listed as the preferred model for refined dispersion modeling in EPA's *Guideline on Air Quality Models* (Appendix W to 40 CFR 51), and was approved by the EPA in November 2005. The AERMOD modeling system incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including the treatment of both surface and elevated sources, and both simple and complex terrain. AERMOD contains two input data processors, AERMET and AERMAP. AERMAP is the terrain processor and AERMET is the meteorological data processor.

The AERMET meteorological data used for this analysis consisted of a concurrent 5-year period of hourly surface weather observations and twice-daily upper air soundings from the National Weather Service at Palm Beach International (PBI) Airport and Florida International University in Miami, respectively. The 5-year period of meteorological data was from 2001 through 2005.

Direction-specific downwash parameters were used for all sources for which downwash was considered. The stacks associated with this project all satisfied the good engineering practice (GEP) stack height criteria.

For pollutants analyzed in an AAQS review, the total impact on ambient air quality is obtained by adding a "background" concentration to the maximum modeled concentration. This "background" concentration takes into account all sources of a particular pollutant that are not explicitly modeled. The results of the AAQS analysis are summarized in the table below. As shown in the table below, emissions from the proposed facility are not expected to cause or contribute to a violation of an AAQS.

Table 3 - Ambient Air Quality Impacts

Pollutant	Averaging Time	Major Sources Impact (µg/m ³)	Background Conc. 2007- 2009 (µg/m ³)	Total Impact (µg/m ³)	Total Impact Greater Than AAQS?	Florida AAQS (µg/m ³)
SO ₂ (ug/m ³) ¹	3-hour	50	11	61	NO	1300
	24-hour	21	3	24	NO	260
	Annual	4	3	7	NO	60
NO ₂ (ppb) ²	1-hour	47	34	81	NO	100
	Annual	2	6	8	NO	53
PM ₁₀ (ug/m ³)	24-hour	32	44	76	NO	150
	Annual	4	15	19	NO	50
PM _{2.5} (ug/m ³)	24-hour	14	18	32	NO	35
	Annual	3	7	10	NO	15
CO (ppm) ³	1-hour	0.4	2.1	2.5	NO	35

¹ ug/m³ = micrograms per cubic meter.

² ppb = parts per billion.

³ ppm = parts per million.

6. PRELIMINARY DETERMINATION

DEP makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant and the conditions specified in the draft permit. Tiffany Miesel is the primary processor for reviewing the application and drafting the permit, working under the supervision of project engineer Greg DeAngelo. Cleve Holladay is the meteorologist responsible for reviewing and approving the ambient air quality analyses. They may be contacted at (850) 488-0114.

¹ INEOS. Fact File 2010. Accessed May 11, 2010. http://www.ineos.com/pdf/INE_FF_2009_01_web.pdf

² Kristen Kerwin, NEPA Compliance Officer, U.S. Department of Energy. Notice of Scoping—INEOS New Planet BioEnergy Commercial Scale Integrated Demonstration Biorefinery, Indian River County, Florida (DOE/EA1773). April 20, 2010.

³ Nagl, Gary J. The State of Liquid Redox. Accessed July 27, 2010, from http://www.gtp-merichem.com/resources/technical_papers/state_of_liquid_redox/index.php.

⁴ AMEC Earth & Environmental. Application for PSD Air Construction Permit for the Highlands Ethanol Facility, Highlands County, Verenium Biofuels Corp. January 2009. (Facility ID No. 0550061)

⁵ U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, 5th ed. 1995. Section 13.2.1, Paved Roads, November 2006.

⁶ U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, 5th ed. 1995. Section 13.2.4, Aggregate Handling And Storage Piles, November 2006.

⁷ U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, 5th ed. 1995. Section 10.6.2, Particleboard Manufacturing, June 2002.

⁸ 40 C.F.R. Part 60, Subpart AAAA—Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001.

⁹ U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, 5th ed. 1995. Section 2.4, Municipal Solid Waste Landfills, November 1998.

¹⁰ U.S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors, Volume I: Stationary Point and Area Sources, 5th ed. 1995. Section 13.5, Industrial Flares. January 1995.

¹¹ Cooper, C. David and F.C. Alley. Air Pollution Control: A Design Approach. Waveland Press. 1990.

¹² Pohl, J.H. and N.R. Soelberg. U.S. Environmental Protection Agency. Evaluation of the Efficiency of Industrial Flares: H₂S Gas Mixtures and Pilot Assisted Flares. EPA 600/S2-86/080. December 1986.

¹³ Correspondence dated March 26, 2009. From Carol Kemker, Acting Director, Air, Pesticides, and Toxics Management Division, U.S. Environmental Protection Agency, Region 4. To Joseph Kahn, Director, Division of Air Resource Management, Florida Department of Environmental Protection.

DRAFT PERMIT

PERMITTEE

INEOS New Planet BioEnergy
3030 Warrenville Road, Suite 650
Lisle, Illinois 60532

Authorized Representative:
Mr. David King, President

Air Permit No. 0610096-001-AC
Permit Expires: September 30, 2013

Indian River County BioEnergy Facility
Minor Source Air Construction Permit
Biomass to Ethanol Production

PROJECT

This is the final air construction permit, which authorizes construction of a waste-to-ethanol production facility using biomass feedstock made up of vegetative yard waste and construction and demolition (C&D) debris. The new facility will be located at 925 74th Avenue in Vero Beach, Florida in Indian River County (IRC). The proposed facility is expected to produce up to 8 million gallons of ethanol per year, and although it will generate a small amount of electricity available for commercial use (about 6 megawatts gross, with 2 megawatts net exported), it will be categorized under Standard Industrial Classification (SIC) Code No. 2869—Industrial Organic Chemicals, Not Elsewhere Classified. The UTM coordinates are Zone 17, 550.7 km East and 3,051.3 km North. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

This permit is organized into the following sections: Section 1 (General Information), Section 2 (Administrative Requirements), Section 3 (Emissions Unit Specific Conditions) and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix CF of Section 4 of this permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C., and is not subject to the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C., for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

(DRAFT)

Joseph Kahn, Director
Division of Air Resource Management

(Date)

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit with Appendices) was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on _____ to the persons listed below.

- David King, INEOS Bio: david.king@ineos.com
- Daniel Cummings, INEOS Bio: dan.cummings@ineos.com
- Dr. Mark Niederschulte, INEOS Bio: mark.niederschulte@ineos.com
- Joseph Curro, P.E., Camp Dresser & McKee Inc.: currojp@cdm.com
- Cynthia Hibbard, Camp Dresser & McKee Inc.: hibbardcs@cdm.com
- Gretchen Janssen, Camp Dresser & McKee Inc.: janssenge@cdm.com
- Caroline Shine, DEP Central District Office: caroline.shine@dep.state.fl.us
- Heather Abrams, EPA Region 4: abrams.heather@epa.gov
- Vickie Gibson, DEP BAR Reading File: victoria.gibson@dep.state.fl.us
- Joy Ezell: hopeforcleanwater@yahoo.com

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED,
on this date, pursuant to Section 120.52(7), Florida
Statutes, with the designated agency clerk, receipt of
which is hereby acknowledged.

(DRAFT)

(Clerk)

(Date)

SECTION 1. GENERAL INFORMATION (DRAFT PERMIT)

PROPOSED PROJECT

The project is for the construction of a waste biomass-to-ethanol production facility. The primary feedstock will be biomass collected by the IRC curbside collection program or delivered by the public to one of the IRC collection centers. On an annual average, yard waste will make up approximately 90 percent of the feedstock. The remainder of the biomass feedstock will consist of clean woody C&D debris, currently collected by IRC in a dedicated cell at the sanitary landfill, and small amounts of municipal solid waste (MSW) used on a trial basis.

The INEOS bio ethanol technology process will gasify the biomass feedstock: The organic material will not be directly combusted; instead, oxygen will be supplied to the gasifier which converts the feed material into a synthetic gas (syngas) consisting of carbon monoxide (CO), carbon dioxide (CO₂), hydrogen (H₂) and other hydrocarbons.

This syngas will not be directly combusted either. It will be cleaned and cooled and then fed into a fermentation system where proprietary bacterial metabolic action converts the syngas into ethanol. The ethanol will then be distilled, dehydrated, stored and loaded into dedicated ethanol tanker trucks. Off gases from the fermentation process, however, will be treated and then routed to a boiler for combustion. Steam from the fermentation vent gas boiler—as well as steam from waste heat recovery at the gasifiers—will be routed to a turbine to generate electricity.

This project will consist of the following emissions units (EU).

EU ID No.	Emission Unit Description
001	Materials Handling Area
002	Feedstock Dryers No. 1 and No. 2
003	Gasification, Fermentation and Distillation Systems
004	Distillation Unit Fugitive Emissions
005	Desulfurization Unit Oxidation Tank
006	Vent Gas Boiler
007	Tank Farm
008	Loadout Flare
009	Gasifier Flare
010	Syngas Flare

FACILITY REGULATORY CLASSIFICATION

- The facility is not a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act (CAA).
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is not a major stationary source in accordance with Rule 62-212.400, F.A.C. (PSD).

SECTION 2. ADMINISTRATIVE REQUIREMENTS (DRAFT PERMIT)

1. Permitting Authority: The Permitting Authority for this project is the Bureau of Air Regulation in the Division of Air Resource Management of the Department. The mailing address for the Bureau of Air Regulation is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. All documents related to applications for permits to operate an emissions unit shall be submitted to the Air Resource Section of the Department's Central District Office at: 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Air Resource Section of the Department's Central District Office at: 3319 Maguire Boulevard, Suite 232, Orlando, Florida 32803-3767.
3. Appendices: The following Appendices are attached as a part of this permit and must be complied with by the permittee:
 - a. Appendix CF: Citation Formats, Acronyms and Glossary of Common Terms;
 - b. Appendix GC: General Conditions;
 - c. Appendix CC: Common Conditions;
 - d. Appendix CTR: Common Testing Requirements;
 - e. Appendix BMP: Best Management Practices;
 - f. Appendix LDAR: Preliminary Leak Detection and Repair (LDAR) Program;
 - g. Appendix GP: Identification of Applicable General Provisions from 40 C.F.R. 60;
 - h. Appendix Kb: New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels, 40 C.F.R. 60, subpart Kb;
 - i. Appendix VVa: NSPS for Equipment Leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI), 40 C.F.R. 60, Subpart VVa;
 - j. Appendix AAAA: NSPS for Small Municipal Waste Combustion Units, 40 C.F.R. 60, subpart AAAA;
 - k. Appendix IIII: NSPS for Stationary Compression Ignition Internal Combustion Engines, 40 C.F.R. 60, subpart IIII; and
 - l. Appendix ZZZZ: National Emission Standards for HAP (NESHAP) for Stationary Reciprocating Internal Combustion Engines (RICE), 40 C.F.R. 63, subpart ZZZZ.
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]

SECTION 2. ADMINISTRATIVE REQUIREMENTS (DRAFT PERMIT)

7. Source Obligation: At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.
[Rule 62-212.400(12), F.A.C.]
8. Title V Permit: This permit authorizes construction of the permitted emissions units and initial operation to determine compliance with Department rules. A Title V operation permit is required for regular operation of the permitted emissions units. The permittee shall apply for a Title V operation permit at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicant shall submit the appropriate application form, compliance test results and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to the Compliance Authority.
[Rules 62-4.030, 62-4.050, 62-4.220, and Chapter 62-213, F.A.C.]
9. Monthly Operations Summary: By the tenth calendar day of each month, the permittee shall record the following parameters in a written or electronic log for the previous month of operation:
- Hours of operation and total heat input (MMBtu) for the vent gas boiler;
 - Tons of feedstock processed in the gasifier by type of material (biomass and MSW);
 - Cubic feet of syngas, natural gas and landfill gas fired in the vent gas boiler;
 - Ethanol production and final (denatured) ethanol product loadout (gallons); and
 - Updated 12-month rolling totals for each of these operating parameters.
- The Monthly Operations Summary shall be kept and made available to the Compliance Authority upon request.
[Rule 62-4.070(3), F.A.C.]
10. Annual Operating Report: The Annual Operating Report for Air Pollutant Emitting Facility (DEP Form No. 62-210.900(5)) shall be completed each year and submitted to the appropriate Department of Environmental Protection (DEP) division, district or DEP-approved local air pollution control program office by April 1 of the following year.
[Rule 62-210.370(3), F.A.C.]
11. Reasonable Precautions to Prevent Emissions of Unconfined Particulate Matter (PM): The facility shall take the following reasonable precautions to prevent emissions of unconfined PM:
- All normally traveled roads on the site shall be paved.
 - Access paths used exclusively for maintenance purposes may be unpaved.
 - Speed limit signs will be posted.
 - The unpaved areas of the facility shall be maintained and either sodded or landscaped as necessary.
 - The conveyor systems outside of the materials handling area shall be fully enclosed.
 - Hoods, fans, filters, or similar equipment shall be used to contain, capture or vent particulate matter.
 - The ash shall be wetted before being stored in the ash handling roll-off bins.
- [Rule 62-296(4)(c), F.A.C.]

SECTION 2. ADMINISTRATIVE REQUIREMENTS (DRAFT PERMIT)

12. Objectionable Odors Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. Prior to the MSW trial period outlined in Condition C.10 of this permit, the permittee shall submit an odor control plan to the Compliance Authority that addresses how the facility will control MSW odors, such as through implementing a "first in/first out" material handling practice or other procedures.
[Rule 62-296.320(2), F.A.C. and Rule 62-4.070, F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

A. Materials Handling Area (EU-001)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
001	<u>Materials Handling Area</u> : Trucks deliver vegetative waste and clean woody construction debris to the tipping floor of the materials handling area. Vegetative waste is primarily yard waste from the county's curbside collection program or yard waste or land clearing debris delivered to the county's collection centers. The C&D debris is material diverted from a dedicated cell of the county landfill. The feedstock system encompasses storage, handling, grinding and screening. MSW will be stored in an enclosed area. Vegetative waste and C&D debris will be stored outdoors on a hard-packed gravel area. The grinder is powered by a Caterpillar C18 ACERT industrial diesel engine rated for 765 brake horsepower at 2100 revolutions per minute, or equivalent.

APPLICABLE STANDARDS AND REGULATIONS

1. NSPS for Stationary Compression Ignition Internal Combustion Engines (Appendix III): 40 C.F.R. part 60, subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines—applies to the diesel engine powering the grinder. The permittee shall comply with the requirements of the NSPS, included as Appendix IIII.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
2. NESHAP for Stationary RICE (Appendix ZZZZ): 40 C.F.R. part 63, subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines—applies to the diesel engine powering the grinder. The permittee shall comply with the requirements of the NESHAP, included as Appendix ZZZZ.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

EQUIPMENT

3. Feedstock System: The permittee is authorized to install the following major pieces of equipment for feedstock delivery, handling and processing:
 - a. Tipping floor;
 - b. Front-end loaders;
 - c. Hard-packed gravel storage area for biomass (authorized feedstock other than MSW, see Condition A.4 of this permit);
 - d. Paved storage area for MSW inside a building;
 - e. Conveyer systems;
 - f. Relocateable shredding/grinding equipment including a stationary diesel engine; and
 - g. Screening equipment.

[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

4. Authorized Feedstock: Vegetative matter, yard waste, land clearing debris, untreated wood and MSW is authorized to be stored in the materials handling area. For purposes of this permit, "biomass" refers to authorized feedstock other than MSW.
[Application No. 0610096-001-AC; Rule 62-210.200, F.A.C. Definitions of "Yard Waste," "Land Clearing Debris," "Untreated Wood" and "Solid Waste"; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
5. Restricted Operation: The hours of operation of this emissions unit are not limited (8,760 hours per year).

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

A. Materials Handling Area (EU-001)

[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

6. Restricted Fuel Use: The engine associated with the shredder/grinder is limited to using no more than 58,980 gallons of ultra low sulfur diesel fuel (maximum 15 ppm sulfur by weight) per year on a rolling 12-month basis.

[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

WORK PRACTICE STANDARDS

7. Feedstock Storage:

- a. Biomass shall be delivered directly to the tipping floor unless the tipping floor cannot accommodate additional material. The tipping floor shall be designed to accommodate feedstock for up to two days (48-hour period) of operation.
- b. Additional biomass shall be delivered to the hard-packed gravel storage area.
- c. Storage of MSW shall be limited to an enclosed building.
- d. Any MSW which has been at the facility for more than 48 hours shall be returned to the county landfill.

[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

8. Roadways: The plant roadways shall be paved and during dry conditions wetted sufficiently to maintain surface moisture to minimize fugitive dust emissions. Roadways shall be swept at least monthly with a vacuum sweeper in good working order to prevent the buildup of dirt and silt on the roadway surfaces. A record of the sweeping shall be kept and made available to the Compliance Authority upon request.

[Application No. 0610096-001-AC; Rule 62-296(4)(c), F.A.C. Unconfined Emissions of Particulate Matter; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

9. Traffic Control: The feedstock delivery vehicles shall be accepted at the site on a 12 hours per day (7:00 AM to 7:00 PM), seven days per week basis. Speed limit signs shall be posted. The vehicles shall be weighed on entry and exit from the site.

[Application No. 0610096-001-AC; Rule 62-296(4)(c), F.A.C. Unconfined Emissions of Particulate Matter; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

10. Treated Wood Management Plan: To ensure that wood treated with chromated copper arsenate is not included with the C&D debris delivered to the facility for use as feedstock, the permittee shall only accept shredded or mulched C&D debris from a source complying with a treated wood management plan meeting the requirements of Rule 62-701.730(20), F.A.C. The permittee shall implement the treated wood management plan in Appendix BMP to screen any C&D debris that is to be shredded or mulched at the facility, unless the delivered C&D debris has been screened at its source as per a treated wood management plan meeting the requirements of Rule 62-701.730(20), F.A.C.

[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

RECORDS AND REPORTS

11. Recordkeeping Requirements: The permittee shall maintain records of the amount of biomass and MSW feedstock delivered, on a tons per day, as-received basis and an annual average tons per day average. The permittee shall maintain monthly records of ultra low sulfur diesel fuel use in the grinder, and the permittee shall maintain fuel delivery receipts identifying the sulfur content of the delivered diesel fuel. These records shall be kept and made available to the Compliance Authority upon request.

[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

B. Feedstock Dryers No. 1 and No. 2 (EU-002)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
002	<p><u>Feedstock Dryers No. 1 and No. 2:</u> The two feedstock dryers (Carrier Model QAD-3660S-20'-6"-5 HP or equivalent) receive feedstock from the storage piles and use low-pressure steam, provided by the boiler and heat recovery systems, to reduce the feedstock moisture to around 15 percent. The dryers use 8,960 pounds per hour of the steam to heat the inlet to about 250 °F. Flue gas from the dryers is vented to the atmosphere through a dust control system. PM emissions from the dryer exhaust are controlled with a baghouse. The dried feedstock is then sent to the gasifiers by way of a covered conveyor system.</p>

EQUIPMENT

1. Feedstock dryers: The permittee is authorized to install two vibrating fluidized bed dryers that use low-pressure steam to reduce the feedstock moisture to approximately 15 percent.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
2. Air Pollution Control Equipment: To comply with the emission standards of this permit, the permittee shall install the following air pollution control equipment on each feedstock dryer.
 - a. Baghouse: The permittee shall install a baghouse to remove PM emissions from the dryer exhaust. The baghouse shall be designed to achieve a PM emissions rate of 0.005 grains per dry standard cubic meter (gr/dscm).
 - b. VOC control: The permittee is authorized to vent the dryer exhaust to a VOC control device, if necessary, to meet the VOC emission limit in B.7. The choice and design of the control device, if needed, will be made after the initial compliance test data are available. The permittee shall submit the recommended design for a VOC control device to the Permitting Authority prior to installation.

[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
3. Enclosed Conveyor System: The permittee shall install an enclosed conveyor system to transport dried feedstock from the dryers to the gasification system.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

4. Permitted Capacity: The total maximum permitted capacity for both dryers combined is 365 dried tons per day (15% moisture content) on an annual average basis.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
5. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

EMISSIONS STANDARDS

6. PM Standard: PM emissions from each feedstock dryer shall not exceed 0.005 gr/dscm.
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
7. VOC Standard: VOC emissions from each feedstock dryer shall not exceed 3.8 pounds per hour (lbs/hr).
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

B. Feedstock Dryers No. 1 and No. 2 (EU-002)

TESTING REQUIREMENTS

8. **Initial Compliance Tests:** Each feedstock dryer stack shall be tested to demonstrate initial compliance with the emissions standards for PM and VOC. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the unit. [Rules 62-4.070(3), F.A.C. Reasonable Assurance and Rule 62-297.310(7)(a)1., F.A.C.]
9. **Annual Compliance Tests:** Prior to obtaining a renewed operation permit, each feedstock dryer stack shall be tested to demonstrate compliance for PM and VOC. [Rule 62-4.070(3), F.A.C. Reasonable Assurance and Rule 62-297.310(7)(a)3., F.A.C.]
10. **Waiver of Annual PM Test:** The requirement to conduct an annual PM test is waived provided each feedstock dryer meets an alternative visible emissions standard of 5% opacity. In place of the annual PM test, the permittee shall conduct a visible emissions evaluation for each feedstock dryer stack. [Rule 62-297.620(4), F.A.C.]
11. **Test Methods:** Required tests shall be performed in accordance with the following reference methods.

Method	Description of Method and Comments
5	Determination of Particulate Emissions.
9	Visual Determination of the Opacity of Emissions from Stationary Sources.
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

The above methods are described in Appendix A of 40 C.F.R. 60 and are adopted by reference in Rule 62-204.800, F.A.C. No other method may be used unless prior written approval is received from the Department.
[Rules 62-204.800 and 62-297.100, F.A.C. and Appendix A of 40 C.F.R. 60]

RECORDS AND REPORTS

12. **Recordkeeping Requirements:** The permittee shall maintain records of the amount of total combined biomass and MSW feedstock processed in both dryers on a dry tons per day and annual average dry tons per day basis (15% moisture content). These records shall be kept and made available to the Compliance Authority upon request. [Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

C. Gasification, Fermentation and Distillation Systems (EU-003)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
003	<p><u>Gasification, Fermentation and Distillation Systems:</u></p> <p>Two gasifiers heat feedstock through starved-air pyrolysis to produce syngas, a mixture of CO, CO₂, H₂ and other hydrocarbons. The syngas is cleaned and bubbled through the fermentation system. The distillation system extracts ethanol from the filtered fermentation broth. This emissions unit also includes equipment to accomplish waste heat recovery, dry gas cleaning, syngas quench and compression, vent gas scrubbing and sulfur removal.</p>

APPLICABLE STANDARDS AND REGULATIONS

1. NSPS for Equipment Leaks of VOC (Appendix VVa): 40 C.F.R. part 60, subpart VVa—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006—applies to each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, flange or other connector that contains or contacts a process fluid that is at least 10 percent VOC by weight. It also applies to any devices or systems that it requires to be installed. The permittee shall comply with the requirements of the NSPS, included as Appendix VVa, for all subject equipment.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
2. Closed Vent Systems and Control Devices: During normal operation, off-gas from the fermentation and distillation systems shall be collected and routed via closed vent systems to vent gas scrubbing and sulfur removal prior to being routed to a control device. The control device for these streams shall be the vent gas boiler (EU-006).
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
3. Temporary LDAR Program: Because the final list of subject equipment will not be known until the facility's design is complete, the permittee shall implement the preliminary LDAR program contained in Appendix LDAR until a final LDAR program is submitted to the Compliance Authority. The permittee shall submit the final LDAR plan and otherwise demonstrate compliance with the NSPS, included as Appendix VVa, within 180 days of initial startup.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

EQUIPMENT

4. Gasifiers: The permittee is authorized to install two gasifiers, each consisting of a two-stage, upper and lower gasification zone with a dedicated ram feeder to feed the dried feedstock. The gasifiers shall be equipped with emergency vent valves that can route syngas to the syngas flare in the event of emergencies such as a failure of the electrical supply to the plant or high pressure in the system caused by the blockage of downstream equipment. The permittee is authorized to install ancillary equipment to cool the syngas and to recover waste heat through the boiler feed water preheater.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]
5. Dry Gas Cleanup Package: The permittee is authorized to install a dry gas cleanup package, which consists of lime and activated carbon injection followed immediately by a fabric filter. Exhaust from the fabric filter is not emitted to the atmosphere, but is routed to syngas quench and compression.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]
6. Syngas Quench and Compression: The permittee is authorized to install a quench tower to further cool the cleaned and filtered syngas, an electrical driven gas compression system and ancillary equipment including a cooled water heat exchanger and a knock-out drum.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

C. Gasification, Fermentation and Distillation Systems (EU-003)

7. Fermentation and Distillation System: The permittee is authorized to install a fermentation and distillation system consisting of fermentation vessels, distillation feed tank, distillation tower, reflux drum and dehydration system.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]
8. Vent Gas Scrubbing: The permittee is required to install a vent scrubber column to remove residual ethanol from the fermentation off-gas.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]
9. Desulfurization Unit: The permittee is required to install a desulfurization unit that uses an iron chelate solution to remove hydrogen sulfide (H₂S) from the vent gas prior to combustion in the vent gas boiler.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

10. Primary Authorized Feedstock: Vegetative matter, yard waste, land clearing debris and untreated wood is authorized to be used as feedstock to the gasification system. Feedstock processing is limited to an annual average throughput of no more than 183 dry tons per day (15% moisture content) per gasifier, 365 dry tons per day (15% moisture content) total.
[Application No. 0610096-001-AC; Rule 62-210.200, F.A.C. Definitions of "Biomass," "Yard Waste," "Untreated Wood" and "Solid Waste"; and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
11. MSW Trial Period: During an MSW trial period not to exceed 120 continuous days, MSW is authorized to be used as a feedstock, alone or in combination with biomass, subject to the following requirements.
 - a. Feedstock: The permittee may fire MSW alone or in combination with the biomass feedstock. MSW processing is limited to no more than 183 dry tons per day (15% moisture content) per gasifier. A maximum of 10,950 dry tons of MSW (15% moisture content) is authorized to be processed during the MSW trial period.
 - b. Notification: The permittee shall notify the Compliance Authority at least 30 days prior to commencement of the MSW trial period.
 - c. Testing: The permittee shall conduct stack tests at the vent gas boiler stack, following the methods and procedures specified in Appendix AAAA, for the following pollutants: PM, lead, mercury, hydrogen chloride (HCl) and cadmium. These tests shall be conducted while processing MSW in the gasifiers at the maximum anticipated rate for the trial period. If the MSW processing rate later exceeds the rate during the testing, the stack tests do not have to be repeated.
 - d. Report: As part of any permit application to authorize the routine processing of MSW in the gasifiers, the permittee shall include a report that uses available monitor and stack test data to evaluate the impact of processing MSW on emissions of the following pollutants: NO_x, CO, SO₂, PM, lead, mercury, HCl and cadmium.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]
12. Authorized Fuels: Natural gas and landfill gas are authorized to be fed to the gasifier bottom chamber start-up burners in order to bring the system up to temperature until the solid feed is started. During normal operation, butanol from the distillation system is authorized to be fed to the gasifier burners.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]
13. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

C. Gasification, Fermentation and Distillation Systems (EU-003)

14. Ethanol Production Rate: Ethanol production is limited to 8.00 million gallons per year.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
{Permitting Note: The final product with the addition of a denaturant will be limited to 8.42 million gallons per year.}
15. Ethanol Capture: The vent gas scrubber shall be designed to remove 95 percent of the residual ethanol from the gas stream.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
16. Sulfur Removal: The desulfurization unit shall be designed to reduce H₂S to 50 parts per million by volume (ppmv) or less at the desulfurization unit exit.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

RECORDS AND REPORTS

17. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix CTR of this permit.
[Rule 62-297.310(8), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

D. Distillation Unit Fugitive Emissions (EU-004)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
004	<u>Distillation Unit Fugitive Emissions:</u> Process vents from the fermentation, distillation and dehydration system are collected, and emissions are routed through closed vent systems to a control device (the vent gas boiler, EU-006). There will be some fugitive VOC emissions from the distillation unit, however, that are not captured and routed to control.

EQUIPMENT

1. Fermentation and Distillation System: The permittee is authorized to install a fermentation and distillation system as specified in Section 3.C of this permit for EU-003.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

2. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
3. Ethanol Production Rate: Ethanol production is limited to 8.00 million gallons per year.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

{Permitting Note: The final product with the addition of a denaturant will be limited to 8.42 million gallons per year. Controlled VOC emissions from distillation are assumed to be 0.1161 lb VOC per 1000 gallons of ethanol produced. At 95 percent control and 8 million gallons per year of ethanol, this equates to 0.46 tons of fugitive VOC—primarily ethanol and butanol.}

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

E. Desulfurization Unit Oxidation Tank (EU-005)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
005	<u>Desulfurization Unit Oxidation Tank:</u> The iron chelate solution used to capture H ₂ S in the syngas stream may also capture VOC and then release those VOC from the oxidation tank during the air sparging process.

EQUIPMENT

1. Desulfurization Unit: The permittee is required to install a desulfurization unit that uses an iron chelate solution to remove H₂S from the vent gas prior to combustion in the vent gas boiler, as specified in Section 3.C of this permit for EU-003.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

2. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
3. Ethanol Production Rate: Ethanol production is limited to 8.00 million gallons per year.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

{Permitting Note: The final product with the addition of a denaturant will be limited to 8.42 million gallons per year. The VOC anticipated in the process gas stream will be mostly ethanol and butanol. The vent gas scrubber, which precedes the desulfurization unit, is designed to capture 95 percent of the ethanol from the vent gas streams from the fermentation and distillation processes. Though not designed to capture butanol, the scrubber is expected to remove at least 95 percent of butanol and other heavier compounds. In the worst case scenario, all VOC following the vent gas scrubber would be captured in the iron chelate catalyst medium of the desulfurization unit and would be subsequently released with the air used to sparge the oxidation tank. In this case, the ethanol production rate limitation would limit potential emissions of VOC from the desulfurization unit oxidation tank to 33.9 tons per year.}

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

F. Vent Gas Boiler (EU-006)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
006	<p>Vent Gas Boiler: The vent gas boiler is a CB Nebraska D-Type industrial watertube boiler, Model NB-301D-65, or equivalent boiler with a nominal maximum heat input rate of 53.2 million British thermal units per hour (MMBtu/hr).</p> <p><i>Fuels:</i> During startup, the vent gas boiler fires landfill gas supplemented with natural gas. During normal operation, the boiler fires the vent gases collected from fermentation, distillation and dehydration. Vent gases are scrubbed and sent through desulfurization prior to combustion in the vent gas boiler. The vent gases may be supplemented with desulfurized landfill gases during normal operation.</p> <p><i>Control Devices:</i> The vent gas boiler is equipped with low-nitrogen oxide (NO_x) burners and flue gas recirculation. The vent gases and landfill gases routed to the boiler undergo significant cleaning prior to being combusted. There are no add-on air pollution control devices on the boiler exhaust.</p> <p><i>Stack Parameters:</i> The vent gas boiler exhaust stack is 150 feet tall and 2.5 feet in diameter. Flow rate at the vent gas boiler stack exit is approximately 15,500 dry standard cubic feet per minute (dscfm) at 7% oxygen (O₂). Exit velocity at the vent gas boiler stack is estimated to be 52.5 feet per second (ft/sec).</p>

APPLICABLE STANDARDS AND REGULATIONS

1. **NSPS for Small Municipal Waste Combustion Units (Appendix AAAA):** Each gasification-to-vent gas boiler equipment train is a separate new municipal waste combustion unit for purposes of 40 C.F.R. part 60, subpart AAAA—Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 31, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001. The permittee shall comply with the requirements of the NSPS, included as Appendix AAAA. The following requirements and specifications are relevant to NSPS applicability.
 - a. The word "combust" in reference to the NSPS refers to the pyrolysis reaction in the gasifiers.
 - b. Each municipal waste combustion unit (gasifier-to-vent gas boiler equipment train) has a capacity of greater than 35 but less than 250 tons per day of MSW.
 - c. The municipal waste combustion units are "Class I Units" because the aggregate plant combustion capacity is 365 tons per day of MSW, which is greater than 250 tons per day.
 - d. The municipal waste combustion units use activated carbon to control emissions of dioxin/furan and mercury.
 - e. The NSPS emissions limits will apply at the vent gas boiler exhaust stack.
 - f. Continuous monitors required by the NSPS will be located at the vent gas boiler exhaust stack.
 - g. The municipal waste combustion units generate steam.
 - h. With respect to NSPS-required monitoring of flue gas temperature, the inlet to the dry gas cleaning fabric filter is deemed to be the inlet to the PM air pollution control device.
 - i. The municipal waste combustion units are deemed to be modular starved-air and excess air units.

[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

F. Vent Gas Boiler (EU-006)

2. NSPS for Equipment Leaks of VOC (Appendix VVa): The vent gas boiler is an enclosed combustion device for purposes of 40 C.F.R. part 60, subpart VVa—Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for Which Construction, Reconstruction, or Modification Commenced After November 7, 2006. The permittee shall comply with the requirements of the NSPS, included as Appendix VVa.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

EQUIPMENT

3. Vent Gas Boiler: The permittee is authorized to construct a nominal 53.2 MMBtu/hr watertube boiler for steam generation. The boiler will include low NO_x burners and flue gas recirculation technology, as well as a feed water heat exchanger, steam drum, turbine, stack and other ancillary equipment. The vent gas boiler shall be designed and operated to one of the following specifications:
- Reduce VOC emissions vented to the boiler with an efficiency of 95 percent or greater. For the fermentation system vent gas, the uncontrolled inlet is specified to be upstream of the vent gas scrubber.
 - Reduce VOC emissions vented to the boiler to an exit concentration of 20 ppmv on a dry basis corrected to 3% O₂.
 - Provide a minimum residence time of 0.75 seconds at a minimum temperature of 816 °C.
- [Application No. 0610096-001-AC; Appendix VVa; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

PERFORMANCE RESTRICTIONS

4. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
5. Authorized Fuels: The vent gas boiler is authorized to fire the following fuels: syngas, natural gas and landfill gas that has been treated in the sulfur removal equipment. For purposes of this section of the permit (Section 3.F), the term "syngas" includes the mixture of CO, CO₂, H₂ and other hydrocarbons resulting from the starved-air pyrolysis in the gasifiers as well as the off-gases from the fermentation and distillation systems.
[Application No. 0610096-001-AC]
6. Circumvention of Air Pollution Control Equipment: The permittee shall not circumvent any air pollution control equipment or allow the emission of air pollutants without the applicable air pollution equipment operating properly. Syngas shall not be routed to the vent gas boiler for combustion except through the gasifier-to-vent gas boiler equipment train, including dry gas cleaning (lime and activated carbon injection followed by fabric filtration), vent gas scrubbing, and sulfur removal. If all or part of the gasifier-to-vent gas boiler equipment train is inoperative, then syngas shall be routed to the syngas flare instead of the vent gas boiler.
[Rule 62-210.650, F.A.C.]
7. Operation and Maintenance: The permittee shall monitor the vent gas boiler to ensure that it is operated and maintained in conformance with its design.
[Paragraph 60.482-10a(e), Appendix VVa]

EMISSIONS STANDARDS

8. Emissions Standards: The NSPS for small municipal waste combustion units (Appendix AAAA) specifies emissions standards for the following pollutants: dioxins/furans, cadmium, lead, mercury, PM, HCl, NO_x, sulfur dioxide (SO₂) and CO. This NSPS also limits visible emissions. The

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

F. Vent Gas Boiler (EU-006)

permittee shall comply with the NSPS limits when the vent gas boiler is combusting any authorized fuel, including syngas generated from the gasification of C&D debris.

[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

9. **Continuous Monitoring Requirements:** The permittee shall install, calibrate, maintain and operate continuous emissions monitoring systems (CEMS), a continuous opacity monitoring system (COMS) and a diluent monitor (either O₂ or CO₂ monitor) to measure and record the emissions of SO₂, NO_x, CO and opacity from the vent gas boiler stack in the manner prescribed by the NSPS for small municipal waste combustion units (Appendix AAAA). Within one working day of discovering emissions in excess of a SO₂, NO_x or CO standard (and subject to the specified averaging period), the permittee shall notify the Compliance Authority.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

TESTING REQUIREMENTS

10. **Initial and Annual Stack Tests:** The permittee shall conduct initial and annual stack testing as specified by the NSPS for small municipal waste combustion units (Appendix AAAA).
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]
11. **Initial and Annual VOC Performance Check:** No later than 180 days after initial operation and annually during each federal fiscal year (October 1 to September 30) thereafter, the permittee shall determine compliance with Condition F.3.a, F.3.b or F.3.c. Any VOC stack testing performed pursuant to this condition shall be performed in accordance with the following reference test method.

Method	Description of Method and Comments
25A	Method for Determining Gaseous Organic Concentrations (Flame Ionization)

The above method is described in Appendix A of 40 C.F.R. 60 and is adopted by reference in Rule 62-204.800, F.A.C. No other method may be used unless prior written approval is received from the Department.

[Rules 62-4.070(3), 62-204.800, 62-297.100 and 62-297.310(7)(a)3., F.A.C. and Appendix A of 40 C.F.R. 60]

RECORDS AND REPORTS

12. **Stack Test Reports:** In addition to the information required in Appendix CTR, each stack test report shall also include the following information: heat input rate (MMBtu/hour), calculated authorized fuels firing rate by fuel type (cubic feet per minute), emissions rate (in the units of the applicable standard) and approximate gasifier feed rates by feedstock type, in dry tons per hour (15% moisture content).
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

G. Tank Farm (EU-007)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
007	<p><u>Tank Farm:</u></p> <ul style="list-style-type: none">• <u>Product Storage Tank:</u> 65,455-gallon ethanol storage tank. The maximum true vapor pressure of ethanol at 32.4 °C (maximum monthly average temperature for Vero Beach) is 1.72 pounds per square inch, absolute (psia).• <u>Denaturant Storage Tank:</u> 18,006-gallon denaturant storage tank. The denaturant is gasoline with a nominal Reid vapor pressure of 9 psia.

APPLICABLE STANDARDS AND REGULATIONS

1. NSPS for Volatile Organic Liquid Storage Vessels (Appendix Kb): The product storage tank and the denaturant storage tank are subject to 40 C.F.R. part 60, 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. The permittee shall comply with the requirements of the NSPS, included as Appendix Kb.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

EQUIPMENT

2. Storage Tanks: The permittee is authorized to install a nominal 18,006-gallon denaturant storage tank and a nominal 65,455-gallon tank to store the final ethanol product. The final ethanol product shall be a mixture of ethanol and 2 to 5 percent denaturant. The denaturant shall be gasoline with a nominal Reid vapor pressure of 9 psia.
[Application No. 0610096-001-AC]
3. Internal Floating Roofs: The storage tanks shall be equipped with fixed roofs in combination with internal floating roofs meeting the requirements of the NSPS, included as Appendix Kb.
[Application No. 0610096-001-AC]

PERFORMANCE RESTRICTIONS

4. Ethanol Throughput: Throughput of final ethanol product is limited to 8.42 million gallons per year.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
5. Denaturant Throughput: Throughput of denaturant is limited to 0.42 million gallons per year.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
6. Restricted Operation: The hours of operation of this emission unit are not limited (8,760 hours per year).
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

H. Loadout Flare (EU-008)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
008	<u>Loadout Flare:</u> Up to 128 gallons of denatured ethanol per minute will be transferred to ethanol tanker trucks. Displaced vapor from the 8,000 gallon, dedicated ethanol tank trucks will be routed to the loadout flare.

EQUIPMENT

1. Loading Rack: The permittee is authorized to construct a product loading and metering system equipped with a loading rack designed to transfer 128 gallons per minute of denatured ethanol product to nominal 8,000 gallon, dedicated ethanol tank trucks.
[Application No. 0610096-001-AC; Rule 62-4.070(3), F.A.C. Reasonable Assurance; and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
2. Loadout Flare: The permittee is required to construct an enclosed flare system to capture and destroy vapors displaced during truck loadout. The flare used to comply with this permit shall comply with the requirements of 40 C.F.R. 60.18, included in Appendix GP.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

3. Restricted Operation: The hours of operation of the pilot flame for the flare system are not limited (8,760 hours per year). Operation of the flare is limited to 3,120 hours per year. The flare shall be operated at all times when truck loading operations are taking place.
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]
4. Approximate Capacities: The flare system shall be designed to combust vapors displaced from the trucks during the loading of the denatured ethanol product. The trucks are assumed to be in dedicated denatured ethanol product service (i.e., only denatured ethanol product vapors will be displaced). The product loadout flare shall have a nominal rated capacity of 6 MMBtu/hr. Natural gas will be used as the fuel for the pilot, which shall have a nominal rated capacity of 0.17 MMBtu/hr.
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

TESTING AND MONITORING REQUIREMENTS

5. Visible Emission Compliance Tests: The flare system exhaust shall be tested to demonstrate initial compliance with the visible emission standard specified in 40 C.F.R. 60.18 no later than 180 days after initial operation and during each federal fiscal year (October 1 to September 30) thereafter. Testing shall be conducted as specified in 40 C.F.R. 60.18(f). Testing shall be conducted while tank trucks are being loaded.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]
6. Operation and Maintenance: The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

RECORDS AND REPORTS

7. Records: The permittee shall record in a written or electronic log the duration of each flare event and the reason for flaring. These records shall be kept and made available to the Compliance Authority upon request.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

I. Gasifier Flare (EU-009)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
009	<u>Gasifier Flare:</u> The emergency gasifier flare is an enclosed flare with a natural gas fueled pilot light. Crude syngas is sent to the flare through an emergency vent valve when there is downstream blockage in the gasifier or when the power supply to the plant fails.

EQUIPMENT

1. Gasifier Flare: The permittee is authorized to construct an enclosed flare system with a continuous natural gas pilot flame. The flare used to comply with this permit shall comply with the requirements of 40 C.F.R. 60.18, included in Appendix GP.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

2. Restricted Operation: The emergency gasifier flare is limited to 100 hours of operation per year.
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

TESTING AND MONITORING REQUIREMENTS

3. Visible Emission Compliance Tests: The flare system exhaust shall be tested to demonstrate initial compliance with the visible emission standard specified in 40 C.F.R. 60.18 no later than 180 days after initial operation and during each federal fiscal year (October 1 to September 30) thereafter. Testing shall be conducted as specified in 40 C.F.R. 60.18(f). Testing shall be conducted while venting syngas to the flare, if practical.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]
4. Operation and Maintenance: The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

RECORDS AND REPORTS

5. Records: The permittee shall record in a written or electronic log the duration of each flare event and the reason for flaring. These records shall be kept and made available to the Compliance Authority upon request.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS (DRAFT PERMIT)

J. Syngas Flare (EU-010)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
010	<u>Syngas Flare:</u> The emergency syngas flare is only used to control vent gas emissions during system malfunctions when the vent gas boiler is unavailable. It has a natural gas fueled pilot light that operates continuously. The largest streams that are routed to the flare are from syngas exiting the waste heat recovery, dry gas cleaning and desulfurization systems. The fermentation, distillation and dehydration systems also have emergency valves that can route to the flare.

EQUIPMENT

1. Syngas Flare: The permittee is authorized to construct an enclosed flare system with a continuous natural gas pilot flame. The flare used to comply with this permit shall comply with the requirements of 40 C.F.R. 60.18, included in Appendix GP.
[Application No. 0610096-001-AC and Rule 62-4.070(3), F.A.C. Reasonable Assurance]

PERFORMANCE RESTRICTIONS

2. Restricted Operation: The emergency syngas flare is limited to 300 hours of operation per year.
[Application No. 0610096-001-AC and Rule 62-210.200, F.A.C. Definition of "Potential to Emit"]

TESTING AND MONITORING REQUIREMENTS

3. Visible Emission Compliance Tests: The flare system exhaust shall be tested to demonstrate initial compliance with the visible emission standard specified in 40 C.F.R. 60.18 no later than 180 days after initial operation and during each federal fiscal year (October 1 to September 30) thereafter. Testing shall be conducted as specified in 40 C.F.R. 60.18(f). Testing shall be conducted while venting syngas to the flare, if practical.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]
4. Operation and Maintenance: The permittee shall monitor the flare to ensure that it is operated and maintained in conformance with its design.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

RECORDS AND REPORTS

5. Records: The permittee shall record in a written or electronic log the duration of each flare event and the reason for flaring. These records shall be kept and made available to the Compliance Authority upon request.
[Rule 62-4.070(3), F.A.C. Reasonable Assurance]

SECTION 4. APPENDICES

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- a. Appendix CF: Citation Formats and Glossary of Common Terms
- b. Appendix GC: General Conditions
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- d. Appendix CTR: Common Testing Requirements
- e. Appendix BMP: Best Management Practices
- f. Appendix LDAR: Preliminary Leak Detection and Repair (LDAR) Program
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- j. Appendix AAAA: NSPS for Small Municipal Waste Combustion Units, 40 C.F.R. 60, subpart AAAA
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SECTION 4. APPENDIX CF

CITATION FORMATS AND GLOSSARY OF COMMON TERMS

CITATION FORMATS

The following illustrate the formats used in the permit to identify applicable requirements from permits and regulations.

Old Permit Numbers

Example: Permit No. AC50-123456 or Permit No. AO50-123456

Where: "AC" identifies the permit as an Air Construction permit
"AO" identifies the permit as an Air Operation permit
"123456" identifies the specific permit project number

New Permit Numbers

Example: Permit Nos. 099-2222-001-AC, 099-2222-001-AF, 099-2222-001-AO, or 099-2222-001-AV

Where: "099" represents the specific county ID number in which the project is located
"2222" represents the specific facility ID number for that county
"001" identifies the specific permit project number
"AC" identifies the permit as an air construction permit
"AF" identifies the permit as a minor source federally enforceable state operation permit
"AO" identifies the permit as a minor source air operation permit
"AV" identifies the permit as a major Title V air operation permit

PSD Permit Numbers

Example: Permit No. PSD-FL-317

Where: "PSD" means issued pursuant to the preconstruction review requirements of the Prevention of Significant Deterioration of air quality
"FL" means that the permit was issued by the State of Florida
"317" identifies the specific permit project number

Florida Administrative Code (F.A.C.)

Example: [Rule 62-213.205, F.A.C.]

Means: Title 62, Chapter 213, Rule 205 of the Florida Administrative Code

Code of Federal Regulations (CFR)

Example: [40 C.F.R. 60.7]

Means: Title 40, Part 60, Section 7 of the Code of Federal Regulations

SECTION 4. APPENDIX CF

CITATION FORMATS AND GLOSSARY OF COMMON TERMS

GLOSSARY OF COMMON TERMS

°F: degrees Fahrenheit	lb: pound
acfm: actual cubic feet per minute	MACT: maximum achievable control technology
ARMS: Air Resource Management System (Department's database)	MMBtu: million British thermal units
BACT: best available control technology	MSDS: material safety data sheets
Btu: British thermal units	MSW: municipal solid waste
CAM: compliance assurance monitoring	MW: megawatt
CEMS: continuous emissions monitoring system	MWC: municipal waste combustor
cfm: cubic feet per minute	NESHAP: National Emissions Standards for Hazardous Air Pollutants
CFR: Code of Federal Regulations	NO_x: nitrogen oxides
CO: carbon monoxide	NSPS: New Source Performance Standards
COMS: continuous opacity monitoring system	O&M: operation and maintenance
DEP: Department of Environmental Protection	O₂: oxygen
Department: Department of Environmental Protection	Pb: lead
dscfm: dry standard cubic feet per minute	PM: particulate matter
EPA: Environmental Protection Agency	PM₁₀ (PM_{2.5}): particulate matter with a mean aerodynamic diameter of 10 (2.5) microns or less
ESP: electrostatic precipitator (control system for reducing particulate matter)	PSD: prevention of significant deterioration
EU: emissions unit	psi: pounds per square inch
F.A.C.: Florida Administrative Code	PTE: potential to emit
F.D.: forced draft	RATA: relative accuracy test audit
F.S.: Florida Statutes	SAM: sulfuric acid mist
FGR: flue gas recirculation	scf: standard cubic feet
F: fluoride	scfm: standard cubic feet per minute
ft²: square feet	SIC: standard industrial classification code
ft³: cubic feet	SNCR: selective non-catalytic reduction (control system used for reducing emissions of nitrogen oxides)
gpm: gallons per minute	SO₂: sulfur dioxide
gr: grains	TPH: tons per hour
HAP: hazardous air pollutant	TPY: tons per year
Hg: mercury	UTM: Universal Transverse Mercator (coordinate system)
I.D.: induced draft	VE: visible emissions
ID: identification	VOC: volatile organic compounds
kPa: kilopascals	

SECTION 4. APPENDIX GC

GENERAL CONDITIONS

The permittee shall comply with the following general conditions from Rule 62-4.160, F.A.C.

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit are "Permit Conditions" and are binding and enforceable pursuant to Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey and vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit is not a waiver or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at a reasonable time, access to the premises, where the permitted activity is located or conducted to:
 - a. Have access to and copy and records that must be kept under the conditions of the permit;
 - b. Inspect the facility, equipment, practices, or operations regulated or required under this permit, and,
 - c. Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:
 - a. A description of and cause of non-compliance; and
 - b. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the non-compliance.

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

SECTION 4. APPENDIX GC
GENERAL CONDITIONS

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.73 and 403.111, Florida Statutes. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance, provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.
11. This permit is transferable only upon Department approval in accordance with Florida Administrative Code Rules 62-4.120 and 62-730.300, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.
12. This permit or a copy thereof shall be kept at the work site of the permitted activity.
13. This permit also constitutes:
 - a. Determination of Best Available Control Technology ();
 - b. Determination of Prevention of Significant Deterioration ();
 - c. Compliance with National Emission Standards for Hazardous Air Pollutants (X); and
 - d. Compliance with New Source Performance Standards (X).
14. The permittee shall comply with the following:
 - a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
 - b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application or this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
 - c. Records of monitoring information shall include:
 - 1) The date, exact place, and time of sampling or measurements;
 - 2) The person responsible for performing the sampling or measurements;
 - 3) The dates analyses were performed;
 - 4) The person responsible for performing the analyses;
 - 5) The analytical techniques or methods used; and
 - 6) The results of such analyses.
15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SECTION 4. APPENDIX CC

COMMON CONDITIONS

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities.

EMISSIONS AND CONTROLS

1. Plant Operation - Problems: If temporarily unable to comply with any of the conditions of the permit due to breakdown of equipment or destruction by fire, wind or other cause, the permittee shall notify each Compliance Authority as soon as possible, but at least within one working day, excluding weekends and holidays. The notification shall include: pertinent information as to the cause of the problem; steps being taken to correct the problem and prevent future recurrence; and, where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the permittee from any liability for failure to comply with the conditions of this permit or the regulations. [Rule 62-4.130, F.A.C.]
2. Circumvention: The permittee shall not circumvent the air pollution control equipment or allow the emission of air pollutants without this equipment operating properly. [Rule 62-210.650, F.A.C.]
3. Excess Emissions Allowed: Excess emissions resulting from startup, shutdown or malfunction of any emissions unit shall be permitted providing (1) best operational practices to minimize emissions are adhered to and (2) the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period unless specifically authorized by the Department for longer duration. Pursuant to Rule 62-210.700(5), F.A.C., the permit subsection may specify more or less stringent requirements for periods of excess emissions. Rule 62-210-700(Excess Emissions), F.A.C., cannot vary or supersede any federal NSPS or NESHAP provision. [Rule 62-210.700(1), F.A.C.]
4. Excess Emissions Prohibited: Excess emissions caused entirely or in part by poor maintenance, poor operation, or any other equipment or process failure that may reasonably be prevented during startup, shutdown or malfunction shall be prohibited. [Rule 62-210.700(4), F.A.C.]
5. Excess Emissions - Notification: In case of excess emissions resulting from malfunctions, the permittee shall notify the Compliance Authority in accordance with Rule 62-4.130, F.A.C. A full written report on the malfunctions shall be submitted in a quarterly report, if requested by the Department. [Rule 62-210.700(6), F.A.C.]
6. VOC or OS Emissions: No person shall store, pump, handle, process, load, unload or use in any process or installation, volatile organic compounds (VOC) or organic solvents (OS) without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. [Rule 62-296.320(1), F.A.C.]
7. Objectionable Odor Prohibited: No person shall cause, suffer, allow or permit the discharge of air pollutants, which cause or contribute to an objectionable odor. An "objectionable odor" means any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance. [Rules 62-296.320(2) and 62-210.200(Definitions), F.A.C.]
8. General Visible Emissions: No person shall cause, let, permit, suffer or allow to be discharged into the atmosphere the emissions of air pollutants from any activity equal to or greater than 20% opacity. This regulation does not impose a specific testing requirement. [Rule 62-296.320(4)(b)1, F.A.C.]
9. Unconfined Particulate Emissions: During the construction period, unconfined particulate matter emissions shall be minimized by dust suppressing techniques such as covering and/or application of water or chemicals to the affected areas, as necessary. During operation of the facility, the permittee shall follow the Best Management Practices as contained in Appendix BMP. [Rule 62-296.320(4)(c), F.A.C.]
10. Open Burning Prohibited: No person shall ignite, cause to be ignited, or permit to be ignited, any material which will result in any prohibited open burning as regulated by chapter 62-256, F.A.C.; nor shall any person suffer, allow, conduct or maintain any prohibited open burning. [Rule 62-256.300, F.A.C.]

SECTION 4. APPENDIX CC

COMMON CONDITIONS

RECORDS AND REPORTS

11. Records Retention: All measurements, records, and other data required by this permit shall be documented in a permanent, legible format and retained for at least 5 years following the date on which such measurements, records, or data are recorded. Records shall be made available to the Department upon request. [Rule 62-213.440(1)(b)2, F.A.C.]
12. Emissions Computation and Reporting
 - a. *Applicability*. This rule sets forth required methodologies to be used by the owner or operator of a facility for computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for computing emissions for purposes of the reporting requirements of subsection 62-210.370(3) and paragraph 62-212.300(1)(e), F.A.C., or of any permit condition that requires emissions be computed in accordance with this rule. This rule is not intended to establish methodologies for determining compliance with the emission limitations of any air permit.
 - b. *Computation of Emissions*. For any of the purposes set forth in subsection 62-210.370(1), F.A.C., the owner or operator of a facility shall compute emissions in accordance with the requirements set forth in this subsection.
 - (1) *Basic Approach*. The owner or operator shall employ, on a pollutant-specific basis, the most accurate of the approaches set forth below to compute the emissions of a pollutant from an emissions unit; provided, however, that nothing in this rule shall be construed to require installation and operation of any continuous emissions monitoring system (CEMS), continuous parameter monitoring system (CPMS), or predictive emissions monitoring system (PEMS) not otherwise required by rule or permit, nor shall anything in this rule be construed to require performance of any stack testing not otherwise required by rule or permit.
 - (a) If the emissions unit is equipped with a CEMS meeting the requirements of paragraph 62-210.370(2)(b), F.A.C., the owner or operator shall use such CEMS to compute the emissions of the pollutant, unless the owner or operator demonstrates to the department that an alternative approach is more accurate because the CEMS represents still-emerging technology.
 - (b) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C., but emissions of the pollutant can be computed pursuant to the mass balance methodology of paragraph 62-210.370(2)(c), F.A.C., the owner or operator shall use such methodology, unless the owner or operator demonstrates to the department that an alternative approach is more accurate.
 - (c) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C., and emissions cannot be computed pursuant to the mass balance methodology, the owner or operator shall use an emission factor meeting the requirements of paragraph 62-210.370(2)(d), F.A.C., unless the owner or operator demonstrates to the department that an alternative approach is more accurate.
 - (2) *Continuous Emissions Monitoring System (CEMS)*.
 - (a) An owner or operator may use a CEMS to compute emissions of a pollutant for purposes of this rule provided:
 - 1) The CEMS complies with the applicable certification and quality assurance requirements of 40 CFR Part 60, Appendices B and F, or, for an acid rain unit, the certification and quality assurance requirements of 40 CFR Part 75, all adopted by reference at Rule 62-204.800, F.A.C.; or
 - 2) The owner or operator demonstrates that the CEMS otherwise represents the most accurate means of computing emissions for purposes of this rule.
 - (b) Stack gas volumetric flow rates used with the CEMS to compute emissions shall be obtained by the most accurate of the following methods as demonstrated by the owner or operator:
 - 1) A calibrated flowmeter that records data on a continuous basis, if available; or

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- 2) The average flow rate of all valid stack tests conducted during a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.
 - (c) The owner or operator may use CEMS data in combination with an appropriate f-factor, heat input data, and any other necessary parameters to compute emissions if such method is demonstrated by the owner or operator to be more accurate than using a stack gas volumetric flow rate as set forth at subparagraph 62-210.370(2)(b)2., F.A.C., above.
- (3) Mass Balance Calculations.
- (a) An owner or operator may use mass balance calculations to compute emissions of a pollutant for purposes of this rule provided the owner or operator:
 - 1) Demonstrates a means of validating the content of the pollutant that is contained in or created by all materials or fuels used in or at the emissions unit; and
 - 2) Assumes that the emissions unit emits all of the pollutant that is contained in or created by any material or fuel used in or at the emissions unit if it cannot otherwise be accounted for in the process or in the capture and destruction of the pollutant by the unit's air pollution control equipment.
 - (b) Where the vendor of a raw material or fuel which is used in or at the emissions unit publishes a range of pollutant content from such material or fuel, the owner or operator shall use the highest value of the range to compute the emissions, unless the owner or operator demonstrates using site-specific data that another content within the range is more accurate.
 - (c) In the case of an emissions unit using coatings or solvents, the owner or operator shall document, through purchase receipts, records and sales receipts, the beginning and ending VOC inventories, the amount of VOC purchased during the computational period, and the amount of VOC disposed of in the liquid phase during such period.
- (4) Emission Factors.
- (a) An owner or operator may use an emission factor to compute emissions of a pollutant for purposes of this rule provided the emission factor is based on site-specific data such as stack test data, where available, unless the owner or operator demonstrates to the department that an alternative emission factor is more accurate. An owner or operator using site-specific data to derive an emission factor, or set of factors, shall meet the following requirements.
 - 1) If stack test data are used, the emission factor shall be based on the average emissions per unit of input, output, or gas volume, whichever is appropriate, of all valid stack tests conducted during at least a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.
 - 2) Multiple emission factors shall be used as necessary to account for variations in emission rate associated with variations in the emissions unit's operating rate or operating conditions during the period over which emissions are computed.
 - 3) The owner or operator shall compute emissions by multiplying the appropriate emission factor by the appropriate input, output or gas volume value for the period over which the emissions are computed. The owner or operator shall not compute emissions by converting an emission factor to pounds per hour and then multiplying by hours of operation, unless the owner or operator demonstrates that such computation is the most accurate method available.
 - (b) If site-specific data are not available to derive an emission factor, the owner or operator may use a published emission factor directly applicable to the process for which emissions are computed.

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If no directly-applicable emission factor is available, the owner or operator may use a factor based on a similar, but different, process.

- (5) Accounting for Emissions During Periods of Missing Data from CEMS, PEMS, or CPMS. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of missing data from CEMS, PEMS, or CPMS using other site-specific data to generate a reasonable estimate of such emissions.
 - (6) Accounting for Emissions During Periods of Startup and Shutdown. In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of startup and shutdown of the emissions unit.
 - (7) Fugitive Emissions. In computing the emissions of a pollutant from a facility or emissions unit, the owner or operator shall account for the fugitive emissions of the pollutant, to the extent quantifiable, associated with such facility or emissions unit.
 - (8) Recordkeeping. The owner or operator shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the department for any regulatory purpose.
- c. *Annual Operating Report for Air Pollutant Emitting Facility*
- (1) The Annual Operating Report for Air Pollutant Emitting Facility (DEP Form No. 62-210.900(5)) shall be completed each year for the following facilities:
 - (a) All Title V sources.
 - (b) All synthetic non-Title V sources.
 - (c) All facilities with the potential to emit ten (10) tons per year or more of volatile organic compounds or twenty-five (25) tons per year or more of nitrogen oxides and located in an ozone nonattainment area or ozone air quality maintenance area.
 - (d) All facilities for which an annual operating report is required by rule or permit.
 - (2) Notwithstanding paragraph 62-210.370(3)(a), F.A.C., no annual operating report shall be required for any facility operating under an air general permit.
 - (3) The annual operating report shall be submitted to the appropriate Department of Environmental Protection (DEP) division, district or DEP-approved local air pollution control program office by April 1 of the following year.
 - (4) Beginning with 2007 annual emissions, emissions shall be computed in accordance with the provisions of subsection 62-210.370(2), F.A.C., for purposes of the annual operating report.

[Rule 62-210.370, F.A.C.]

SECTION 4. APPENDIX CTR
COMMON TESTING REQUIREMENTS

Unless otherwise specified in the permit, the following conditions apply to all emissions units and activities.

COMPLIANCE TESTING REQUIREMENTS

1. Operating Rate During Testing: Testing of emissions shall be conducted with the emissions unit operating at permitted capacity. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the maximum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test rate until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. [Rule 62-297.310(2), F.A.C.]
2. Applicable Test Procedures - Opacity Compliance Tests: When either EPA Method 9 or DEP Method 9 is specified as the applicable opacity test method, the required minimum period of observation for a compliance test shall be sixty (60) minutes for emissions units which emit or have the potential to emit 100 tons per year or more of particulate matter, and thirty (30) minutes for emissions units which have potential emissions less than 100 tons per year of particulate matter and are not subject to a multiple-valued opacity standard. The opacity test observation period shall include the period during which the highest opacity emissions can reasonably be expected to occur. Exceptions to these requirements are as follows:
 - a. For batch, cyclical processes, or other operations which are normally completed within less than the minimum observation period and do not recur within that time, the period of observation shall be equal to the duration of the batch cycle or operation completion time.
 - b. The observation period for special opacity tests that are conducted to provide data to establish a surrogate standard pursuant to Rule 62-297.310(5)(k), F.A.C., Waiver of Compliance Test Requirements, shall be established as necessary to properly establish the relationship between a proposed surrogate standard and an existing mass emission limiting standard.
 - c. The minimum observation period for opacity tests conducted by employees or agents of the Department to verify the day-to-day continuing compliance of a unit or activity with an applicable opacity standard shall be twelve minutes.

[Rule 62-297.310(4), F.A.C.]

3. Determination of Process Variables
 - a. *Required Equipment*. The owner or operator of an emissions unit for which compliance tests are required shall install, operate, and maintain equipment or instruments necessary to determine process variables, such as process weight input or heat input, when such data are needed in conjunction with emissions data to determine the compliance of the emissions unit with applicable emission limiting standards.
 - b. *Accuracy of Equipment*. Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

[Rule 62-297.310(5), F.A.C.]

4. Frequency of Compliance Tests: The following provisions apply only to those emissions units that are subject to an emissions limiting standard for which compliance testing is required.
 - a. *General Compliance Testing*.
 1. The owner or operator of a new or modified emissions unit that is subject to an emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining an operation permit for such emissions unit.

SECTION 4. APPENDIX CTR
COMMON TESTING REQUIREMENTS

2. The owner or operator of an emissions unit that is subject to any emission limiting standard shall conduct a compliance test that demonstrates compliance with the applicable emission limiting standard prior to obtaining a renewed operation permit. Emissions units that are required to conduct an annual compliance test may submit the most recent annual compliance test to satisfy the requirements of this provision. In renewing an air operation permit pursuant to sub-subparagraph 62-210.300(2)(a)3.b., c., or d., F.A.C., the Department shall not require submission of emission compliance test results for any emissions unit that, during the year prior to renewal:
 - (a) Did not operate; or
 - (b) In the case of a fuel burning emissions unit, burned liquid and/or solid fuel for a total of no more than 400 hours,
 3. During each federal fiscal year (October 1 – September 30), unless otherwise specified by rule, order, or permit, the owner or operator of each emissions unit shall have a formal compliance test conducted for visible emissions, if there is an applicable standard.
 4. The owner or operator shall notify the Department, at least 15 days prior to the date on which each formal compliance test is to begin, of the date, time, and place of each such test, and the test contact person who will be responsible for coordinating and having such test conducted for the owner or operator.
- b. *Special Compliance Tests.* When the Department, after investigation, has good reason (such as complaints, increased visible emissions or questionable maintenance of control equipment) to believe that any applicable emission standard contained in a Department rule or in a permit issued pursuant to those rules is being violated, it shall require the owner or operator of the emissions unit to conduct compliance tests which identify the nature and quantity of pollutant emissions from the emissions unit and to provide a report on the results of said tests to the Department.

[Rule 62-297.310(7), F.A.C.]

RECORDS AND REPORTS

5. Test Reports: The owner or operator of an emissions unit for which a compliance test is required shall file a report with the Department on the results of each such test. The required test report shall be filed with the Department as soon as practical but no later than 45 days after the last sampling run of each test is completed. The test report shall provide sufficient detail on the emissions unit tested and the test procedures used to allow the Department to determine if the test was properly conducted and the test results properly computed. As a minimum, the test report shall provide the following information.
 - a. The type, location, and designation of the emissions unit tested.
 - b. The facility at which the emissions unit is located.
 - c. The owner or operator of the emissions unit.
 - d. The normal type and amount of fuels used and materials processed, and the types and amounts of fuels used and material processed during each test run.
 - e. The means, raw data and computations used to determine the amount of fuels used and materials processed, if necessary to determine compliance with an applicable emission limiting standard.
 - f. The date, starting time and end time of the observation.
 - g. The test procedures used.
 - h. The names of individuals who furnished the process variable data, conducted the test, and prepared the report.
 - i. The applicable emission standard and the resulting maximum allowable emission rate for the emissions unit plus the test result in the same form and unit of measure.

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COMMON TESTING REQUIREMENTS

- j. A certification that to the knowledge of the owner or his authorized agent, all data submitted are true and correct. The owner or his authorized agent shall certify that all data required and provided to the person conducting the test are true and correct to his knowledge.

[Rule 62-297.310(8), F.A.C.]

SECTION 4. APPENDIX BMP
BEST MANAGEMENT PRACTICES

Introduction

As per Condition A.4 of the permit, authorized feedstock for the INEOS New Planet BioEnergy (INPB) facility in Indian River County (IRC) consists of vegetative matter, yard waste, land clearing debris, untreated wood and municipal solid waste (MSW). These terms are defined in Rule 62-210.200, F.A.C.

- "Biomass" – Vegetative matter and untreated wood.
- "Yard Waste" – Vegetative matter resulting from landscaping and yard maintenance operations and other such routine property clean-up activities. It includes materials such as leaves, shrub trimmings, grass clippings, palm fronds, and brush.
- "Land Clearing Debris" – Uprooted or cleared vegetation resulting from a land clearing operation, including any untreated wood generated by the land clearing operation (e.g., untreated fence posts).
- "Untreated Wood" – Wood (including lighter pine, tree trunks, limbs and stumps, shrubs, and lumber) which is free of paint, glue, filler, pentachlorophenol, creosote, tar, asphalt, chromated copper arsenate (CCA), and other wood preservatives or treatments.
- "Solid Waste" – Includes garbage, refuse, yard trash, clean debris, white goods, special waste, ashes, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.

This Appendix BMP contains best management practices related to materials separation, quality control and dust minimization. In this Appendix BMP, "feedstock" refers to any authorized feedstock at the facility; "vegetative matter" refers to yard waste and land clearing debris other than untreated wood; "construction and demolition (C&D) debris" refers to untreated wood other than yard waste and land clearing debris; and "MSW" refers to solid waste other than yard trash and clean debris. As such, the three non-overlapping categories of authorized feedstock are vegetative matter, C&D debris and MSW.

Limited Use of MSW

The routine feedstock for the INPB IRC facility consists of vegetative matter and C&D debris, blended together in varying ratios depending upon availability. On an annual average basis, the blend is approximately 90 percent vegetative matter with the remainder made up of C&D debris or MSW. The permit authorizes up to 100 percent use of MSW, but limits total MSW use to a maximum of 10,950 dry tons of MSW (15 percent moisture content). This represents the equivalent of 30 days of 100 percent MSW use.

Any material delivered to the facility that is not authorized by the permit as feedstock shall be collected and delivered to IRC Solid Waste Disposal District (SWDD) or to another disposal facility.

Vegetative Matter

Source: The vegetative matter is primarily yard waste from the IRC SWDD curbside collection program, supplemented by additional yard waste and land clearing debris delivered by the public directly to the county's customer convenience centers. Some vegetative matter may be delivered by the public to the INPB IRC facility.

Screening Prior to Shredding: Shredding may be performed either by the county before the vegetative matter is delivered to the facility or by the facility following delivery. Vegetative matter shall not be processed at the INPB IRC facility, however, unless it was collected under the following conditions:

- Personnel at scale houses or other receiving areas have been trained to prevent significant quantities of undesirable waste (more than 1 percent plastic, metal or other non-vegetative matter) from being disposed of in the vegetative matter stream.
- The public providing the yard waste have been educated in reducing the amount of plastic and garbage that is discarded with the yard waste through outreach activities such as posting signs at drop off areas.

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BEST MANAGEMENT PRACTICES

Alternate Disposal: The permit authorizes a tipping floor, designed to accommodate a 48-hour period of operation (730 tons), with an additional hard-packed gravel overflow storage area for vegetative matter and C&D debris. The INPB IRC facility shall have the necessary agreements, logistics and procedures in place for at least one alternative disposal location should the storage capacity of the site be exceeded.

C&D Debris

Source: The C&D debris is primarily waste accepted by the IRC SWDD for disposal in a dedicated cell in their landfill. Some C&D debris may be delivered by the public to the INPB IRC facility.

Screening Prior to Shredding: Shredding may be performed either by the county before the C&D debris is delivered to the facility or by the facility following delivery. To ensure that wood treated with chromated copper arsenate (CCA) is not included in the feedstock, C&D debris shall be processed at the facility under the following conditions:

- The C&D debris delivered from the county landfill shall be pre-screened under a wood management plan in compliance with Rule 62-701.730, F.A.C.
- Prior to on-site shredding, the C&D debris delivered directly to the INPB IRC facility shall be pre-screened under the Florida DEP "Guidance for the Management and Disposal of CCA-Treated Wood," August 10, 2005 draft or subsequent final version (attached).

Alternate Disposal: The permit authorizes a tipping floor, designed to accommodate a 48-hour period of operation (730 tons), with an additional hard-packed gravel overflow storage area for vegetative matter and C&D debris. The INPB IRC facility shall have the necessary agreements, logistics and procedures in place for at least one alternative disposal location should the storage capacity of the site be exceeded.

Municipal Solid Waste

Source: MSW to be used as feedstock will be waste diverted from the IRC SWDD Class I landfill or material delivered pre-shredded from a waste-to-energy facility. No MSW shall be delivered by the public to the INPB IRC facility.

Screening Prior to Shredding: Shredding may be performed either before the MSW is delivered to the facility or by the facility following delivery. Prior to on-site shredding, the INPB IRC facility shall develop and implement a detailed feedstock management plan to ensure removal of hazardous materials such as propane tanks from the waste.

Alternate Disposal: The permit authorizes a tipping floor, designed to accommodate a 48-hour period of operation (730 tons), with an additional enclosed, paved storage area for MSW, designed to accommodate two days of operation (730 tons). MSW shall be stored in the enclosed paved area, and any MSW which has been at the INPB IRC facility for more than 48 hours shall be returned to the county landfill.

Best Management Practices

In addition to the reasonable precautions to prevent emissions of unconfined particulate matter (PM) specified in the permit, the facility shall implement the following best management practices:

- The feedstock shall be delivered directly to the tipping floor.
- The feedstock shall not be sprayed with water to control dust emissions, unless water-spraying proves necessary to prevent emissions of unconfined PM.
- The feedstock piles shall be managed by front end loaders.
- Unnecessary movement of the piles shall be avoided to minimize fugitive emissions.
- The front end loaders shall feed the biomass or MSW to a conveyor system connected to the dryers.

SECTION 4. APPENDIX BMP
BEST MANAGEMENT PRACTICES

- The conveyor system from the tipping floor to the dryers and from the dryers to the gasifiers shall be covered and shall employ flexible connections to avoid drops.
- The ash from the gasifiers shall be collected as wet slurry and stored in bins prior to removal for off-site disposal. The bins shall be covered for transportation.
- Both the limestone and activated carbon used as air pollution controls shall be delivered in batch loads. The silos for storage of these materials shall be equipped with dust collection systems to limit fugitive particulate matter emissions.
- Other chemicals used on site, such as nutrients for the fermentation process will be delivered as liquids.
- Trucks shall deliver feedstock or remove ash only during a 12-hour day, seven days per week.

SECTION 4. APPENDIX LDAR

PRELIMINARY LEAK DETECTION AND REPAIR (LDAR) PROGRAM

PRELIMINARY LEAK DETECTION AND REPAIR (LDAR) PROGRAM

1. Introduction

The New Source Performance Standards (NSPS) for equipment leaks at synthetic organic chemical manufacturing industries (40 CFR 60, subpart VVa) apply to several areas of the INEOS New Planet (INP) BioEnergy Indian River County (IRC) Facility. The NSPS applies to each pump, compressor, pressure relief device, sampling connection system, open-ended valve or line, valve, flange or other connector that contains or contacts a process fluid that is at least 10 percent VOC by weight. It also applies to any devices or systems that it requires to be installed.

One requirement of subpart VVa is the development of a leak detection and repair (LDAR) program. Because the final list of subject equipment will not be known until the facility's design is complete, this preliminary procedure has been developed and will be used until a final LDAR program can be submitted to the Compliance Authority.

2. Procedures

Except as may be provided for in the special conditions of the air construction permit, the following requirements apply:

- A. These conditions shall not apply (1) where the VOC has an aggregate partial pressure or vapor pressure of less than 0.044 pounds per square inch, absolute (psia) at 68°F or (2) operating pressure is at least 5 kilopascals (0.725 psi) below ambient pressure. Equipment excluded from this condition shall be identified in a list or by one of the methods described below to be made available upon request.

The exempted components may be identified by one or more of the following methods:

- i. piping and instrumentation diagram (PID); or
 - ii. a written or electronic database.
- B. Construction of new and reworked piping, valves, pump systems, and compressor systems shall conform to applicable American National Standards Institute (ANSI), American Petroleum Institute (API), American Society of Mechanical Engineers (ASME), or equivalent codes.
- C. New and reworked underground process pipelines shall contain no buried valves such that fugitive emission monitoring is rendered impractical.
- D. To the extent that good engineering practice will permit, new and reworked valves and piping connections shall be so located to be reasonably accessible for leak-checking during plant operation. Non-accessible valves, as defined by the NSPS subpart, shall be identified in a list to be made available upon request. The non-accessible valves may be identified by one or more of the methods described in subparagraph A above.
- E. New and reworked piping connections shall be welded or flanged. Screwed connections are permissible only on piping smaller than two-inch diameter. Gas or hydraulic testing of the new and reworked piping connections at no less than operating pressure shall be performed prior to returning the components to service or they shall be monitored for leaks using an approved gas analyzer within 8 hours of the components being returned to service. Adjustments shall be made as necessary to obtain leak-free performance. Connectors shall be inspected by visual, audible, and/or olfactory means at least weekly by operating personnel walk-through.

Each open-ended valve or line shall be equipped with a cap, blind flange, plug, or a second valve. Except during sampling, the second valve shall be closed. If the removal of a component for repair or replacement results in an open-ended line or valve, it is exempt from the requirement to install a cap, blind flange, plug, or second valve for 24 hours. If the repair or replacement is not completed within 24 hours, the line or valve must have a cap, blind flange, plug, or second valve installed.

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PRELIMINARY LEAK DETECTION AND REPAIR (LDAR) PROGRAM

- F. Accessible valves shall be monitored by leak-checking for fugitive emissions at least quarterly using an approved gas analyzer. Sealless/leakless valves (including, but not limited to, welded bonnet bellows and diaphragm valves) and relief valves equipped with a rupture disc upstream or venting to a control device are not required to be monitored. For valves equipped with rupture discs, a pressure-sensing device shall be installed between the relief valve and rupture disc to monitor disc integrity. All leaking discs shall be replaced at the earliest opportunity but no later than the next process shutdown.

An approved gas analyzer shall conform to requirements listed in Method 21 of 40 CFR part 60, appendix A. The gas analyzer shall be calibrated with methane. In addition, the response factor of the instrument for a specific VOC of interest shall be determined and meet the requirements of Section 8 of Method 21. If a mixture of VOCs is being monitored, the response factor shall be calculated for the average composition of the process fluid. If a response factor less than 10 cannot be achieved using methane, then the instrument may be calibrated with one of the VOC to be measured or any other VOC so long as the instrument has a response factor of less than 10 for each of the VOC to be measured.

Replacements for leaking components shall be re-monitored within 15 days of being placed back into VOC service.

- G. Except as may be provided for in the special conditions of this permit, all pump, compressor, and agitator seals shall be monitored with an approved gas analyzer at least quarterly or be equipped with a shaft sealing system that prevents or detects emissions of VOC from the seal. Seal systems designed and operated to prevent emissions or seals equipped with an automatic seal failure detection and alarm system need not be monitored. These seal systems may include (but are not limited to) dual pump seals with barrier fluid at higher pressure than process pressure, seals degassing to vent control systems kept in good working order, or seals equipped with an automatic seal failure detection and alarm system. Submerged pumps or sealless pumps (including, but not limited to, diaphragm, canned, or magnetic-driven pumps) may be used to satisfy the requirements of this condition and need not be monitored.
- H. Damaged or leaking valves or connectors found to be emitting VOC in excess of 500 parts per million by volume (ppmv) or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired. Damaged or leaking pump, compressor, and agitator seals found to be emitting VOC in excess of 2,000 ppmv or found by visual inspection to be leaking (e.g., dripping process fluids) shall be tagged and replaced or repaired.
- I. Every reasonable effort shall be made to repair a leaking component, as specified in this paragraph, within 15 days after the leak is found. If the repair of a component would require a unit shutdown that would create more emissions than the repair would eliminate, the repair may be delayed until the next scheduled shutdown. All leaking components which cannot be repaired until a scheduled shutdown shall be identified for such repair by tagging. A listing of all components that qualify for delay of repair shall be maintained on a delay of repair list.
- J. The results of the required fugitive instrument monitoring and maintenance program shall be made available to the FDEP upon request. Records shall indicate appropriate dates, test methods, instrument readings, repair results, justification for delay of repairs, and corrective actions taken for all components. Records of physical inspections shall be noted in the operator's log or equivalent.
- K. Alternative monitoring frequency schedules as specified in the NSPS subpart may be used in lieu of Items F through G of this condition.

SECTION 4. APPENDIX GP

NSPS SUBPART A AND NESHAP SUBPART A - IDENTIFICATION OF GENERAL PROVISIONS

NSPS - SUBPART A, IDENTIFICATION OF GENERAL PROVISIONS

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a New Source Performance Standard of 40 C.F.R. part 60 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

- § 60.1 Applicability.
- § 60.2 Definitions.
- § 60.3 Units and abbreviations.
- § 60.4 Address.
- § 60.5 Determination of construction or modification.
- § 60.6 Review of plans.
- § 60.7 Notification and Record Keeping.
- § 60.8 Performance Tests.
- § 60.9 Availability of information.
- § 60.10 State Authority.
- § 60.11 Compliance with Standards and Maintenance Requirements.
- § 60.12 Circumvention.
- § 60.13 Monitoring Requirements.
- § 60.14 Modification.
- § 60.15 Reconstruction.
- § 60.16 Priority List.
- § 60.17 Incorporations by Reference.
- § 60.18 General Control Device Requirements.
- § 60.19 General Notification and Reporting Requirements.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

SECTION 4. APPENDIX GP

NSPS SUBPART A AND NESHAP SUBPART A - IDENTIFICATION OF GENERAL PROVISIONS

NESHAP - SUBPART A, IDENTIFICATION OF GENERAL PROVISIONS

The provisions of this Subpart may be provided in full upon request. Emissions units subject to a National Emission Standards for Hazardous Air Pollutants of 40 C.F.R. part 63 are also subject to the applicable requirements of Subpart A, the General Provisions, including:

§ 63.1 Applicability.

§ 63.2 Definitions.

§ 63.3 Units and abbreviations.

§ 63.4 Prohibited Activities and Circumvention.

§ 63.5 Preconstruction Review and Notification Requirements.

§ 63.6 Compliance with Standards and Maintenance Requirements.

§ 63.7 Performance Testing Requirements.

§ 63.8 Monitoring Requirements.

§ 63.9 Notification Requirements.

§ 63.10 Recordkeeping and Reporting Requirements.

§ 63.11 Control Device Requirements.

§ 63.12 State Authority and Delegations.

§ 63.13 Addresses of State Air Pollution Control Agencies and EPA Regional Offices.

§ 63.14 Incorporation by Reference.

§ 63.15 Availability of Information and Confidentiality.

Individual subparts may exempt specific equipment or processes from some or all of these requirements. The general provisions may be provided in full upon request.

SECTION 4. APPENDIX Kb

NSPS, SUBPART KB – STANDARDS OF PERFORMANCE FOR VOLATILE ORGANIC LIQUID STORAGE VESSELS

Two tanks at the facility are subject to 40 C.F.R. part 60, 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. The NSPS applies to any storage tank with a capacity greater than or equal to 10,300 gallons that is used to store volatile organic liquids. The two tanks have a capacity greater than or equal to 40,000 gallons (nominal 72,727 gallons each) and store a liquid with a maximum true vapor pressure greater than 3.5 kilopascals (kPa). Consequently, the two tanks (product storage tank and denaturant storage tank) are subject to 40 C.F.R. part 60, subpart A (general provisions) as well as subpart Kb (storage vessels).

The complete provisions of subparts A and Kb may be provided in full upon request and are also available from the following links:

[Link to Subpart A](#)

[Link to Subpart Kb](#)

SECTION 4. APPENDIX VVa

NSPS SUBPART VVa – STANDARDS OF PERFORMANCE FOR EQUIPMENT LEAKS OF VOC IN THE SOCFI

SUBPART VVA—STANDARDS OF PERFORMANCE FOR EQUIPMENT LEAKS OF VOC IN THE SYNTHETIC ORGANIC CHEMICALS MANUFACTURING INDUSTRY FOR WHICH CONSTRUCTION, RECONSTRUCTION, OR MODIFICATION COMMENCED AFTER NOVEMBER 7, 2006

Source: 72 FR 64883, Nov. 16, 2007, unless otherwise noted.

§ 60.480A 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 §60.481a) within a process unit is an affected facility.

(b) Any affected facility under paragraph (a) of this section that commences construction, reconstruction, or modification after November 7, 2006, shall be subject to the requirements of this subpart.

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

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

(2) Any affected facility that has the design capacity to produce less than 1,000 Mg/yr (1,102 ton/yr) of a chemical listed in §60.489 is exempt from §§60.482–1a through 60.482–11a.

(3) If an affected facility produces heavy liquid chemicals only from heavy liquid feed or raw materials, then it is exempt from §§60.482–1a through 60.482–11a.

(4) Any affected facility that produces beverage alcohol is exempt from §§60.482–1a through 60.482–11a.

(5) Any affected facility that has no equipment in volatile organic compounds (VOC) service is exempt from §§60.482–1a through 60.482–11a.

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

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 65, subpart F must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(1)(ii) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 65, subpart F, except that provisions required to be met prior to implementing 40 CFR part 65 still apply. Owners and operators who choose to comply with 40 CFR part 65, subpart F, must comply with 40 CFR part 65, subpart A.

(2) *Part 63, subpart H.* (i) Owners or operators may choose to comply with the provisions of 40 CFR part 63, subpart H, to satisfy the requirements of §§60.482–1a through 60.487a for an affected facility. When choosing

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to comply with 40 CFR part 63, subpart H, the requirements of §60.485a(d), (e), and (f), and §60.486a(i) and (j) still apply.

(ii) *Part 60, subpart A.* Owners or operators who choose to comply with 40 CFR part 63, subpart H must also comply with §§60.1, 60.2, 60.5, 60.6, 60.7(a)(1) and (4), 60.14, 60.15, and 60.16 for that equipment. All sections and paragraphs of subpart A of this part that are not mentioned in this paragraph (e)(2)(ii) do not apply to owners or operators of equipment subject to this subpart complying with 40 CFR part 63, subpart H, except that provisions required to be met prior to implementing 40 CFR part 63 still apply. Owners and operators who choose to comply with 40 CFR part 63, subpart H, must comply with 40 CFR part 63, subpart A.

(f) *Stay of standards.* (1) Owners or operators that start a new, reconstructed, or modified affected source prior to November 16, 2007 are not required to comply with the requirements in this paragraph until EPA takes final action to require compliance and publishes a document in the Federal Register.

(i) The definition of "capital expenditure" in §60.481a of this subpart. While the definition of "capital expenditure" is stayed, owners or operators should use the definition found in §60.481 of subpart VV of this part.

(ii) [Reserved]

(2) Owners or operators are not required to comply with the requirements in this paragraph until EPA takes final action to require compliance and publishes a document in the Federal Register.

(i) The definition of "process unit" in §60.481a of this subpart. While the definition of "process unit" is stayed, owners or operators should use the following definition:

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.

(ii) The method of allocation of shared storage vessels in §60.482–1a(g) of this subpart.

(iii) The standards for connectors in gas/vapor service and in light liquid service in §60.482–1a of this subpart.

[72 FR 64883, Nov. 16, 2007, as amended at 73 FR 31375, June 2, 2008]

§ 60.481A DEFINITIONS.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act (CAA) 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:

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

(2) The percent Y is determined from the following equation: $Y = 1.0 - 0.575 \log X$, where X is 2006 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 Value for B

Subpart applicable to facility	Value of B to be used in equation
VVa	12.5
GGGa	7.0

Closed-loop system means an enclosed system that returns process fluid to the process.

Closed-purge system means a system or combination of systems and portable containers to capture purged liquids. Containers for purged liquids must be covered or closed when not being filled or emptied.

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, or other joined fittings used to connect two pipe lines or a pipe line and a piece of process equipment or that close an opening in a pipe that could be connected to another pipe. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this regulation.

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 action for the purpose of stopping or reducing leakage of organic material to the atmosphere using best practices.

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

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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, P.O. Box 2300, Fairfield, NJ 07007–2300).

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 §60.485a(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 §60.485a(d) specify how to determine that a piece of equipment is not in VOC service.)

Initial calibration value means the concentration measured during the initial calibration at the beginning of each day required in §60.485a(b)(1), or the most recent calibration if the instrument is recalibrated during the day (i.e., the calibration is adjusted) after a calibration drift assessment.

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 the components assembled and connected by pipes or ducts to process raw materials and to produce, as intermediate or final products, one or more of the chemicals listed in §60.489. A process unit can operate independently if supplied with sufficient feed or raw materials and sufficient storage facilities for the product. For the purpose of this subpart, process unit includes any feed, intermediate and final product storage vessels (except as specified in §60.482–1a(g)), product transfer racks, and connected ducts and piping. A process unit includes all equipment as defined in this subpart.

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Process unit shutdown means a work practice or operational procedure that stops production from a process unit or part of a process unit during which it is technically feasible to clear process material from a process unit or part of a process unit consistent with safety constraints and during which repairs can be accomplished. The following are not considered process unit shutdowns:

- (1) 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.
- (2) An unscheduled work practice or operational procedure that would stop production from a process unit or part of a process unit for a shorter period of time than would be required to clear the process unit or part of the process unit of materials and start up the unit, and would result in greater emissions than delay of repair of leaking components until the next scheduled process unit shutdown.
- (3) The use of spare equipment and technically feasible bypassing of equipment without stopping production.

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 defined in the applicable sections of this subpart and, except for leaks identified in accordance with §§60.482–2a(b)(2)(ii) and (d)(6)(ii) and (d)(6)(iii), 60.482–3a(f), and 60.482–10a(f)(1)(ii), is re-monitored as specified in §60.485a(b) to verify that emissions from the equipment are below the applicable leak definition.

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.

Storage vessel means a tank or other vessel that is used to store organic liquids that are used in the process as raw material feedstocks, produced as intermediates or final products, or generated as wastes. Storage vessel does not include vessels permanently attached to motor vehicles, such as trucks, railcars, barges or ships.

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.

Transfer rack means the collection of loading arms and loading hoses, at a single loading rack, that are used to fill tank trucks and/or railcars with organic liquids.

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

Effective Date Note: At 73 FR 31376, June 2, 2008, in §60.481a, the definitions of "capital expenditure" and "process unit" were stayed until further notice.

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§ 60.482-1A STANDARDS: GENERAL.

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

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

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

(2) If the Administrator makes a determination that a means of emission limitation is at least equivalent to the requirements of §§60.482–2a, 60.482–3a, 60.482–5a, 60.482–6a, 60.482–7a, 60.482–8a, or 60.482–10a, 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 §§60.482–2a through 60.482–10a if it is identified as required in §60.486a(e)(5).

(e) Equipment that an owner or operator designates as being in VOC service less than 300 hr/yr is excluded from the requirements of §§60.482–2a through 60.482–11a if it is identified as required in §60.486a(e)(6) and it meets any of the conditions specified in paragraphs (e)(1) through (3) of this section.

(1) The equipment is in VOC service only during startup and shutdown, excluding startup and shutdown between batches of the same campaign for a batch process.

(2) The equipment is in VOC service only during process malfunctions or other emergencies.

(3) The equipment is backup equipment that is in VOC service only when the primary equipment is out of service.

(f)(1) If a dedicated batch process unit operates less than 365 days during a year, an owner or operator may monitor to detect leaks from pumps, valves, and open-ended valves or lines at the frequency specified in the following table instead of monitoring as specified in §§60.482–2a, 60.482–7a, and 60.483.2a:

Operating time (percent of hours during year)	Equivalent monitoring frequency time in use		
	Monthly	Quarterly	Semiannually
0 to <25	Quarterly	Annually	Annually.
25 to <50	Quarterly	Semiannually	Annually.
50 to <75	Bimonthly	Three quarters	Semiannually.
75 to 100	Monthly	Quarterly	Semiannually.

(2) Pumps and valves that are shared among two or more batch process units that are subject to this subpart may be monitored at the frequencies specified in paragraph (f)(1) of this section, provided the operating time of all such process units is considered.

(3) The monitoring frequencies specified in paragraph (f)(1) of this section are not requirements for monitoring at specific intervals and can be adjusted to accommodate process operations. An owner or operator may monitor at any time during the specified monitoring period (e.g., month, quarter, year), provided the monitoring is

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conducted at a reasonable interval after completion of the last monitoring campaign. Reasonable intervals are defined in paragraphs (f)(3)(i) through (iv) of this section.

- (i) When monitoring is conducted quarterly, monitoring events must be separated by at least 30 calendar days.
 - (ii) When monitoring is conducted semiannually (*i.e.* , once every 2 quarters), monitoring events must be separated by at least 60 calendar days.
 - (iii) When monitoring is conducted in 3 quarters per year, monitoring events must be separated by at least 90 calendar days.
 - (iv) When monitoring is conducted annually, monitoring events must be separated by at least 120 calendar days.
- (g) If the storage vessel is shared with multiple process units, the process unit with the greatest annual amount of stored materials (predominant use) is the process unit the storage vessel is assigned to. If the storage vessel is shared equally among process units, and one of the process units has equipment subject to this subpart, the storage vessel is assigned to that process unit. If the storage vessel is shared equally among process units, none of which have equipment subject to this subpart of this part, the storage vessel is assigned to any process unit subject to subpart VV of this part. If the predominant use of the storage vessel varies from year to year, then the owner or operator must estimate the predominant use initially and reassess every 3 years. The owner or operator must keep records of the information and supporting calculations that show how predominant use is determined. All equipment on the storage vessel must be monitored when in VOC service.

Effective Date Note: At 73 FR 31376, June 2, 2008, in §60.482–1a, paragraph (g) was stayed until further notice.

§ 60.482-2A 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 §60.485a(b), except as provided in §60.482–1a(c) and (f) and paragraphs (d), (e), and (f) of this section. A pump that begins operation in light liquid service after the initial startup date for the process unit must be monitored for the first time within 30 days after the end of its startup period, except for a pump that replaces a leaking pump and except as provided in §60.482–1a(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, except as provided in §60.482–1a(f).
- (b)(1) The instrument reading that defines a leak is specified in paragraphs (b)(1)(i) and (ii) of this section.
- (i) 5,000 parts per million (ppm) or greater for pumps handling polymerizing monomers;
 - (ii) 2,000 ppm or greater for all other pumps.
- (2) If there are indications of liquids dripping from the pump seal, the owner or operator shall follow the procedure specified in either paragraph (b)(2)(i) or (ii) of this section. This requirement does not apply to a pump that was monitored after a previous weekly inspection and the instrument reading was less than the concentration specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable.

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(i) Monitor the pump within 5 days as specified in §60.485a(b). A leak is detected if the instrument reading measured during monitoring indicates a leak as specified in paragraph (b)(1)(i) or (ii) of this section, whichever is applicable. The leak shall be repaired using the procedures in paragraph (c) of this section.

(ii) Designate the visual indications of liquids dripping as a leak, and repair the leak using either the procedures in paragraph (c) of this section or by eliminating the visual indications of liquids dripping.

(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 §60.482–9a.

(2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected. First attempts at repair include, but are not limited to, the practices described in paragraphs (c)(2)(i) and (ii) of this section, where practicable.

(i) Tightening the packing gland nuts;

(ii) Ensuring that the seal flush is operating at design pressure and temperature.

(d) Each pump equipped with a dual mechanical seal system that includes a barrier fluid system is exempt from the requirements of paragraph (a) of this section, provided the requirements specified in paragraphs (d)(1) through (6) of this section 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) Equipped 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 §60.482–10a; 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)(i) Each pump is checked by visual inspection, each calendar week, for indications of liquids dripping from the pump seals.

(ii) If there are indications of liquids dripping from the pump seal at the time of the weekly inspection, the owner or operator shall follow the procedure specified in either paragraph (d)(4)(ii)(A) or (B) of this section prior to the next required inspection.

(A) Monitor the pump within 5 days as specified in §60.485a(b) to determine if there is a leak of VOC in the barrier fluid. If an instrument reading of 2,000 ppm or greater is measured, a leak is detected.

(B) Designate the visual indications of liquids dripping as a leak.

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- (5)(i) Each sensor as described in paragraph (d)(3) is checked daily or is equipped with an audible alarm.
- (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.
- (iii) If the sensor indicates failure of the seal system, the barrier fluid system, or both, based on the criterion established in paragraph (d)(5)(ii) of this section, a leak is detected.
- (6)(i) When a leak is detected pursuant to paragraph (d)(4)(ii)(A) of this section, it shall be repaired as specified in paragraph (c) of this section.
- (ii) A leak detected pursuant to paragraph (d)(5)(iii) of this section shall be repaired within 15 days of detection by eliminating the conditions that activated the sensor.
- (iii) A designated leak pursuant to paragraph (d)(4)(ii)(B) of this section shall be repaired within 15 days of detection by eliminating visual indications of liquids dripping.
- (e) Any pump that is designated, as described in §60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a), (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 §60.485a(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 §60.482-10a, it is exempt from paragraphs (a) through (e) of this section.
- (g) Any pump that is designated, as described in §60.486a(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.

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§ 60.482-3A STANDARDS: COMPRESSORS.

- (a) Each compressor shall be equipped with a seal system that includes a barrier fluid system and that prevents leakage of VOC to the atmosphere, except as provided in §60.482-1a(c) and paragraphs (h), (i), and (j) of this section.
- (b) Each compressor seal system as required in paragraph (a) of this section shall be:
- (1) Operated with the barrier fluid at a pressure that is greater than the compressor stuffing box pressure; or
 - (2) Equipped with a barrier fluid system degassing reservoir that is routed to a process or fuel gas system or connected by a closed vent system to a control device that complies with the requirements of §60.482-10a; or
 - (3) Equipped with a system that purges the barrier fluid into a process stream with zero VOC emissions to the atmosphere.
- (c) The barrier fluid system shall be in heavy liquid service or shall not be in VOC service.
- (d) Each barrier fluid system as described in paragraph (a) shall be equipped with a sensor that will detect failure of the seal system, barrier fluid system, or both.
- (e)(1) Each sensor as required in paragraph (d) of this section shall be checked daily or shall be equipped with an audible alarm.
- (2) The owner or operator shall determine, based on design considerations and operating experience, a criterion that indicates failure of the seal system, the barrier fluid system, or both.
- (f) If the sensor indicates failure of the seal system, the barrier system, or both based on the criterion determined under paragraph (e)(2) of this section, a leak is detected.
- (g)(1) When a leak is detected, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482-9a.
- (2) A first attempt at repair shall be made no later than 5 calendar days after each leak is detected.
- (h) A compressor is exempt from the requirements of paragraphs (a) and (b) of this section, if it is equipped with a closed vent system to capture and transport leakage from the compressor drive shaft back to a process or fuel gas system or to a control device that complies with the requirements of §60.482-10a, except as provided in paragraph (i) of this section.
- (i) Any compressor that is designated, as described in §60.486a(e)(1) and (2), for no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, is exempt from the requirements of paragraphs (a) through (h) of this section if the compressor:
- (1) Is demonstrated to be operating with no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background, as measured by the methods specified in §60.485a(c); and
 - (2) Is tested for compliance with paragraph (i)(1) of this section initially upon designation, annually, and at other times requested by the Administrator.

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

§ 60.482-4A 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 §60.485a(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 §60.482-9a.

(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 §60.485a(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 §60.482-10a 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 §60.482-9a.

§ 60.482-5A STANDARDS: SAMPLING CONNECTION SYSTEMS.

(a) Each sampling connection system shall be equipped with a closed-purge, closed-loop, or closed-vent system, except as provided in §60.482-1a(c) and paragraph (c) of this section.

(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) Gases displaced during filling of the sample container are not required to be collected or captured.

(2) Containers that are part of a closed-purge system must be covered or closed when not being filled or emptied.

(3) Gases remaining in the tubing or piping between the closed-purge system valve(s) and sample container valve(s) after the valves are closed and the sample container is disconnected are not required to be collected or captured.

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(4) Each closed-purge, closed-loop, or closed-vent system shall be designed and operated to meet requirements in either paragraph (b)(4)(i), (ii), (iii), or (iv) of this section.

(i) Return the purged process fluid directly to the process line.

(ii) Collect and recycle the purged process fluid to a process.

(iii) Capture and transport all the purged process fluid to a control device that complies with the requirements of §60.482-10a.

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

(A) 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;

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

(C) 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;

(D) A waste management unit subject to and operated in compliance with the treatment requirements of 40 CFR 61.348(a), provided all waste management units that collect, store, or transport the purged process fluid to the treatment unit are subject to and operated in compliance with the management requirements of 40 CFR 61.343 through 40 CFR 61.347; or

(E) A device used to burn off-specification used oil for energy recovery in accordance with 40 CFR part 279, subpart G, provided the purged process fluid is 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.

§ 60.482-6A 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 §60.482-1a(c) and paragraphs (d) and (e) of this section.

(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) of this section 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.

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(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.

§ 60.482-7A STANDARDS: VALVES IN GAS/VAPOR SERVICE AND IN LIGHT LIQUID SERVICE.

(a)(1) Each valve shall be monitored monthly to detect leaks by the methods specified in §60.485a(b) and shall comply with paragraphs (b) through (e) of this section, except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1a(c) and (f), and §§60.483-1a and 60.483-2a.

(2) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for the process unit must be monitored according to paragraphs (a)(2)(i) or (ii), except for a valve that replaces a leaking valve and except as provided in paragraphs (f), (g), and (h) of this section, §60.482-1a(c), and §§60.483-1a and 60.483-2a.

(i) Monitor the valve as in paragraph (a)(1) of this section. The valve must be monitored for the first time within 30 days after the end of its startup period to ensure proper installation.

(ii) If the existing valves in the process unit are monitored in accordance with §60.483-1a or §60.483-2a, count the new valve as leaking when calculating the percentage of valves leaking as described in §60.483-2a(b)(5). If less than 2.0 percent of the valves are leaking for that process unit, the valve must be monitored for the first time during the next scheduled monitoring event for existing valves in the process unit or within 90 days, whichever comes first.

(b) If an instrument reading of 500 ppm or greater is measured, a leak is detected.

(c)(1)(i) 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.

(ii) As an alternative to monitoring all of the valves in the first month of a quarter, an owner or operator may elect to subdivide the process unit into two or three subgroups of valves and monitor each subgroup in a different month during the quarter, provided each subgroup is monitored every 3 months. The owner or operator must keep records of the valves assigned to each subgroup.

(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 §60.482-9a.

(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;

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(4) Injection of lubricant into lubricated packing.

(f) Any valve that is designated, as described in §60.486a(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) of this section 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 §60.485a(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 §60.486a(f)(1), as an unsafe-to-monitor valve is exempt from the requirements of paragraph (a) of this section 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) of this section, 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 §60.486a(f)(2), as a difficult-to-monitor valve is exempt from the requirements of paragraph (a) of this section 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:

(i) Becomes an affected facility through §60.14 or §60.15 and was constructed on or before January 5, 1981; or

(ii) Has less than 3.0 percent of its total number of valves designated as difficult-to-monitor by the owner or operator.

(3) The owner or operator of the valve follows a written plan that requires monitoring of the valve at least once per calendar year.

§ 60.482-8A STANDARDS: PUMPS, VALVES, AND CONNECTORS IN HEAVY LIQUID SERVICE AND PRESSURE RELIEF DEVICES IN LIGHT LIQUID OR HEAVY LIQUID SERVICE.

(a) If evidence of a potential leak is found by visual, audible, olfactory, or any other detection method at pumps, valves, and connectors in heavy liquid service and pressure relief devices in light liquid or heavy liquid service, 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 §60.485a(b) and shall comply with the requirements of paragraphs (b) through (d) of this section.

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(2) The owner or operator shall eliminate the visual, audible, olfactory, or other indication of a potential leak within 5 calendar days of detection.

(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 §60.482–9a.

(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 §§60.482–2a(c)(2) and 60.482–7a(e).

§ 60.482-9A 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. Monitoring to verify repair must occur within 15 days after startup of the process unit.

(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 and connectors 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 §60.482–10a.

(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.

(f) When delay of repair is allowed for a leaking pump, valve, or connector that remains in service, the pump, valve, or connector may be considered to be repaired and no longer subject to delay of repair requirements if two consecutive monthly monitoring instrument readings are below the leak definition.

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§ 60.482-10A 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 (ppmv), 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 ppmv, 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 (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 (ii) of this section:
- (i) Conduct an initial inspection according to the procedures in §60.485a(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 §60.485a(b); and
 - (ii) Conduct annual inspections according to the procedures in §60.485a(b).
- (g) Leaks, as indicated by an instrument reading greater than 500 ppmv 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.

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(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 (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 (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 (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 §60.486a(c).

(4) For each inspection conducted in accordance with §60.485a(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.

§ 60.482-11A STANDARDS: CONNECTORS IN GAS/VAPOR SERVICE AND IN LIGHT LIQUID SERVICE.

(a) The owner or operator shall initially monitor all connectors in the process unit for leaks by the later of either 12 months after the compliance date or 12 months after initial startup. If all connectors in the process unit have

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been monitored for leaks prior to the compliance date, no initial monitoring is required provided either no process changes have been made since the monitoring or the owner or operator can determine that the results of the monitoring, with or without adjustments, reliably demonstrate compliance despite process changes. If required to monitor because of a process change, the owner or operator is required to monitor only those connectors involved in the process change.

(b) Except as allowed in §60.482–1a(c), §60.482–10a, or as specified in paragraph (e) of this section, the owner or operator shall monitor all connectors in gas and vapor and light liquid service as specified in paragraphs (a) and (b)(3) of this section.

(1) The connectors shall be monitored to detect leaks by the method specified in §60.485a(b) and, as applicable, §60.485a(c).

(2) If an instrument reading greater than or equal to 500 ppm is measured, a leak is detected.

(3) The owner or operator shall perform monitoring, subsequent to the initial monitoring required in paragraph (a) of this section, as specified in paragraphs (b)(3)(i) through (iii) of this section, and shall comply with the requirements of paragraphs (b)(3)(iv) and (v) of this section. The required period in which monitoring must be conducted shall be determined from paragraphs (b)(3)(i) through (iii) of this section using the monitoring results from the preceding monitoring period. The percent leaking connectors shall be calculated as specified in paragraph (c) of this section.

(i) If the percent leaking connectors in the process unit was greater than or equal to 0.5 percent, then monitor within 12 months (1 year).

(ii) If the percent leaking connectors in the process unit was greater than or equal to 0.25 percent but less than 0.5 percent, then monitor within 4 years. An owner or operator may comply with the requirements of this paragraph by monitoring at least 40 percent of the connectors within 2 years of the start of the monitoring period, provided all connectors have been monitored by the end of the 4-year monitoring period.

(iii) If the percent leaking connectors in the process unit was less than 0.25 percent, then monitor as provided in paragraph (b)(3)(iii)(A) of this section and either paragraph (b)(3)(iii)(B) or (b)(3)(iii)(C) of this section, as appropriate.

(A) An owner or operator shall monitor at least 50 percent of the connectors within 4 years of the start of the monitoring period.

(B) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is greater than or equal to 0.35 percent of the monitored connectors, the owner or operator shall monitor as soon as practical, but within the next 6 months, all connectors that have not yet been monitored during the monitoring period. At the conclusion of monitoring, a new monitoring period shall be started pursuant to paragraph (b)(3) of this section, based on the percent of leaking connectors within the total monitored connectors.

(C) If the percent of leaking connectors calculated from the monitoring results in paragraph (b)(3)(iii)(A) of this section is less than 0.35 percent of the monitored connectors, the owner or operator shall monitor all connectors that have not yet been monitored within 8 years of the start of the monitoring period.

(iv) If, during the monitoring conducted pursuant to paragraphs (b)(3)(i) through (iii) of this section, a connector is found to be leaking, it shall be re-monitored once within 90 days after repair to confirm that it is not leaking.

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(v) The owner or operator shall keep a record of the start date and end date of each monitoring period under this section for each process unit.

(c) For use in determining the monitoring frequency, as specified in paragraphs (a) and (b)(3) of this section, the percent leaking connectors as used in paragraphs (a) and (b)(3) of this section shall be calculated by using the following equation:

$$\%C_L = C_L / C_T * 100$$

Where:

$\%C_L$ = Percent of leaking connectors as determined through periodic monitoring required in paragraphs (a) and (b)(3)(i) through (iii) of this section.

C_L = Number of connectors measured at 500 ppm or greater, by the method specified in §60.485a(b).

C_T = Total number of monitored connectors in the process unit or affected facility.

(d) When a leak is detected pursuant to paragraphs (a) and (b) of this section, it shall be repaired as soon as practicable, but not later than 15 calendar days after it is detected, except as provided in §60.482–9a. A first attempt at repair as defined in this subpart shall be made no later than 5 calendar days after the leak is detected.

(e) Any connector that is designated, as described in §60.486a(f)(1), as an unsafe-to-monitor connector is exempt from the requirements of paragraphs (a) and (b) of this section if:

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

(2) The owner or operator of the connector has a written plan that requires monitoring of the connector 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 (d) of this section if a leak is detected.

(f) *Inaccessible, ceramic, or ceramic-lined connectors*. (1) Any connector that is inaccessible or that is ceramic or ceramic-lined (e.g., porcelain, glass, or glass-lined), is exempt from the monitoring requirements of paragraphs (a) and (b) of this section, from the leak repair requirements of paragraph (d) of this section, and from the recordkeeping and reporting requirements of §§63.1038 and 63.1039. An inaccessible connector is one that meets any of the provisions specified in paragraphs (f)(1)(i) through (vi) of this section, as applicable:

(i) Buried;

(ii) Insulated in a manner that prevents access to the connector by a monitor probe;

(iii) Obstructed by equipment or piping that prevents access to the connector by a monitor probe;

(iv) Unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold that would allow access to connectors up to 7.6 meters (25 feet) above the ground;

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(v) Inaccessible because it would require elevating the monitoring personnel more than 2 meters (7 feet) above a permanent support surface or would require the erection of scaffold; or

(vi) Not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-lift basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.

(2) If any inaccessible, ceramic, or ceramic-lined connector is observed by visual, audible, olfactory, or other means to be leaking, the visual, audible, olfactory, or other indications of a leak to the atmosphere shall be eliminated as soon as practical.

(g) Except for instrumentation systems and inaccessible, ceramic, or ceramic-lined connectors meeting the provisions of paragraph (f) of this section, identify the connectors subject to the requirements of this subpart. Connectors need not be individually identified if all connectors in a designated area or length of pipe subject to the provisions of this subpart are identified as a group, and the number of connectors subject is indicated.

Effective Date Note: At 73 FR 31376, June 2, 2008, §60.482–11a was stayed until further notice.

§ 60.483-1A 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 §60.487a(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 §60.482–7a(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 §60.485a(b).

(2) If an instrument reading of 500 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, determined as described in §60.485a(h).

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§ 60.483-2A 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)a.
- (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 §60.482–7a.
- (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 §60.482–7a but can again elect to use this section.
- (5) The percent of valves leaking shall be determined as described in §60.485a(h).
- (6) An owner or operator must keep a record of the percent of valves found leaking during each leak detection period.
- (7) A valve that begins operation in gas/vapor service or light liquid service after the initial startup date for a process unit following one of the alternative standards in this section must be monitored in accordance with §60.482–7a(a)(2)(i) or (ii) before the provisions of this section can be applied to that valve.

§ 60.484A 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 demonstrating equivalence of 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.

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(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) of this section.

(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 CAA.

(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.

§ 60.485A 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).

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(b) The owner or operator shall determine compliance with the standards in §§60.482–1a through 60.482–1 la, 60.483a, and 60.484a 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 of appendix A–7 of this part. 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 no more than 2,000 ppm greater than the leak definition concentration of the equipment monitored. If the monitoring instrument's design allows for multiple calibration scales, then the lower scale shall be calibrated with a calibration gas that is no higher than 2,000 ppm above the concentration specified as a leak, and the highest scale shall be calibrated with a calibration gas that is approximately equal to 10,000 ppm. If only one scale on an instrument will be used during monitoring, the owner or operator need not calibrate the scales that will not be used during that day's monitoring.

(2) A calibration drift assessment shall be performed, at a minimum, at the end of each monitoring day. Check the instrument using the same calibration gas(es) that were used to calibrate the instrument before use. Follow the procedures specified in Method 21 of appendix A–7 of this part, Section 10.1, except do not adjust the meter readout to correspond to the calibration gas value. Record the instrument reading for each scale used as specified in §60.486a(e)(7). Calculate the average algebraic difference between the three meter readings and the most recent calibration value. Divide this algebraic difference by the initial calibration value and multiply by 100 to express the calibration drift as a percentage. If any calibration drift assessment shows a negative drift of more than 10 percent from the initial calibration value, then all equipment monitored since the last calibration with instrument readings below the appropriate leak definition and above the leak definition multiplied by (100 minus the percent of negative drift/divided by 100) must be re-monitored. If any calibration drift assessment shows a positive drift of more than 10 percent from the initial calibration value, then, at the owner/operator's discretion, all equipment since the last calibration with instrument readings above the appropriate leak definition and below the leak definition multiplied by (100 plus the percent of positive drift/divided by 100) may be re-monitored.

(c) The owner or operator shall determine compliance with the no-detectable-emission standards in §§60.482–2a(e), 60.482–3a(i), 60.482–4a, 60.482–7a(f), and 60.482–10a(e) as follows:

(1) The requirements of paragraph (b) shall apply.

(2) Method 21 of appendix A–7 of this part 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.

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(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 a piece of equipment is in light liquid service by showing that all the following conditions apply:

(1) The vapor pressure of one or more of the organic 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 organic 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 of appendix A–7 of this part 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:

$$H_T = K \sum_{i=1}^n C_i H_i$$

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Where:

K = Conversion constant, 1.740×10^{-7} (g-mole)(MJ)/(ppm-scm-kcal) (metric units) = 4.674×10^{-6} [(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 of appendix A-6 of this part or ASTM D6420-99 (2004) (where the target compound(s) are those listed in Section 1.1 of ASTM D6420-99, and the target concentration is between 150 parts per billion by volume and 100 ppmv) 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 of appendix A-7 of this part, 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.

(h) The owner or operator shall determine compliance with §60.483-1a or §60.483-2a as follows:

(1) The percent of valves leaking shall be determined using the following equation:

$\%V_L = (V_L / V_T) * 100$

Where:

$\%V_L$ = Percent leaking valves.

V_L= Number of valves found leaking.

V_T= The sum of the total number of valves monitored.

(2) The total number of valves monitored shall include difficult-to-monitor and unsafe-to-monitor valves only during the monitoring period in which those valves are monitored.

(3) The number of valves leaking shall include valves for which repair has been delayed.

(4) Any new valve that is not monitored within 30 days of being placed in service shall be included in the number of valves leaking and the total number of valves monitored for the monitoring period in which the valve is placed in service.

(5) If the process unit has been subdivided in accordance with §60.482-7a(c)(1)(ii), the sum of valves found leaking during a monitoring period includes all subgroups.

(6) The total number of valves monitored does not include a valve monitored to verify repair.

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§ 60.486A 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.

(3) The owner or operator shall record the information specified in paragraphs (a)(3)(i) through (v) of this section for each monitoring event required by §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a.

(i) Monitoring instrument identification.

(ii) Operator identification.

(iii) Equipment identification.

(iv) Date of monitoring.

(v) Instrument reading.

(b) When each leak is detected as specified in §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, 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 §60.482–7a(c) and no leak has been detected during those 2 months.

(3) The identification on a connector may be removed after it has been monitored as specified in §60.482–11a(b)(3)(iv) and no leak has been detected during that monitoring.

(4) The identification on equipment, except on a valve or connector, may be removed after it has been repaired.

(c) When each leak is detected as specified in §§60.482–2a, 60.482–3a, 60.482–7a, 60.482–8a, 60.482–11a, and 60.483–2a, 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, except when indications of liquids dripping from a pump are designated as a leak.

(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.

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- (4) Maximum instrument reading measured by Method 21 of appendix A-7 of this part at the time the leak is successfully repaired or determined to be nonrepairable, except when a pump is repaired by eliminating indications of liquids dripping.
 - (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 §60.482-10a 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 §60.482-10a(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 §§60.482-2a, 60.482-3a, 60.482-4a, and 60.482-5a 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 §§60.482-2a, 60.482-3a, 60.482-4a, and 60.482-5a.
- (e) The following information pertaining to all equipment subject to the requirements in §§60.482-1a to 60.482-11a 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 §§60.482-2a(e), 60.482-3a(i), and 60.482-7a(f).
 - (ii) The designation of equipment as subject to the requirements of §60.482-2a(e), §60.482-3a(i), or §60.482-7a(f) shall be signed by the owner or operator. Alternatively, the owner or operator may establish a mechanism with their permitting authority that satisfies this requirement.
 - (3) A list of equipment identification numbers for pressure relief devices required to comply with §60.482-4a.
 - (4)(i) The dates of each compliance test as required in §§60.482-2a(e), 60.482-3a(i), 60.482-4a, and 60.482-7a(f).

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- (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.
- (6) A list of identification numbers for equipment that the owner or operator designates as operating in VOC service less than 300 hr/yr in accordance with §60.482–1a(e), a description of the conditions under which the equipment is in VOC service, and rationale supporting the designation that it is in VOC service less than 300 hr/yr.
- (7) The date and results of the weekly visual inspection for indications of liquids dripping from pumps in light liquid service.
- (8) Records of the information specified in paragraphs (e)(8)(i) through (vi) of this section for monitoring instrument calibrations conducted according to sections 8.1.2 and 10 of Method 21 of appendix A–7 of this part and §60.485a(b).
 - (i) Date of calibration and initials of operator performing the calibration.
 - (ii) Calibration gas cylinder identification, certification date, and certified concentration.
 - (iii) Instrument scale(s) used.
 - (iv) A description of any corrective action taken if the meter readout could not be adjusted to correspond to the calibration gas value in accordance with section 10.1 of Method 21 of appendix A–7 of this part.
 - (v) Results of each calibration drift assessment required by §60.485a(b)(2) (i.e., instrument reading for calibration at end of monitoring day and the calculated percent difference from the initial calibration value).
 - (vi) If an owner or operator makes their own calibration gas, a description of the procedure used.
- (9) The connector monitoring schedule for each process unit as specified in §60.482–11a(b)(3)(v).
- (10) Records of each release from a pressure relief device subject to §60.482–4a.
 - (f) The following information pertaining to all valves subject to the requirements of §60.482–7a(g) and (h), all pumps subject to the requirements of §60.482–2a(g), and all connectors subject to the requirements of §60.482–11a(e) shall be recorded in a log that is kept in a readily accessible location:
 - (1) A list of identification numbers for valves, pumps, and connectors that are designated as unsafe-to-monitor, an explanation for each valve, pump, or connector stating why the valve, pump, or connector is unsafe-to-monitor, and the plan for monitoring each valve, pump, or connector.
 - (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 §60.483–2a:

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- (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 §§60.482–2a(d)(5) and 60.482–3a(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 §60.480a(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.

§ 60.487A REPORTING REQUIREMENTS.

- (a) Each owner or operator subject to the provisions of this subpart shall submit semiannual reports to the Administrator beginning 6 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 §60.482–7a, excluding those valves designated for no detectable emissions under the provisions of §60.482–7a(f).
 - (3) Number of pumps subject to the requirements of §60.482–2a, excluding those pumps designated for no detectable emissions under the provisions of §60.482–2a(e) and those pumps complying with §60.482–2a(f).
 - (4) Number of compressors subject to the requirements of §60.482–3a, excluding those compressors designated for no detectable emissions under the provisions of §60.482–3a(i) and those compressors complying with §60.482–3a(h).
 - (5) Number of connectors subject to the requirements of §60.482–11a.
- (c) All semiannual reports to the Administrator shall include the following information, summarized from the information in §60.486a:

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- (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 §60.482–7a(b) or §60.483–2a,
 - (ii) Number of valves for which leaks were not repaired as required in §60.482–7a(d)(1),
 - (iii) Number of pumps for which leaks were detected as described in §60.482–2a(b), (d)(4)(ii)(A) or (B), or (d)(5)(iii),
 - (iv) Number of pumps for which leaks were not repaired as required in §60.482–2a(c)(1) and (d)(6),
 - (v) Number of compressors for which leaks were detected as described in §60.482–3a(f),
 - (vi) Number of compressors for which leaks were not repaired as required in §60.482–3a(g)(1),
 - (vii) Number of connectors for which leaks were detected as described in §60.482–11a(b)
 - (viii) Number of connectors for which leaks were not repaired as required in §60.482–11a(d), and
 - (ix)–(x) [Reserved]
 - (xi) 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) of this section 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 §§60.483–1a or 60.483–2a 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 CAA, 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.

§ 60.488A RECONSTRUCTION.

For the purposes of this subpart:

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(a) The cost of the following frequently replaced components of the facility shall not be considered in calculating either the "fixed capital cost of the new components" or the "fixed capital costs that would be required to construct a comparable new facility" under §60.15: Pump seals, nuts and bolts, rupture disks, and packings.

(b) Under §60.15, the "fixed capital cost of new components" includes the fixed capital cost of all depreciable components (except components specified in §60.488a(a)) which are or will be replaced pursuant to all continuous programs of component replacement which are commenced within any 2-year period following the applicability date for the appropriate subpart. (See the "Applicability and designation of affected facility" section of the appropriate subpart.) For purposes of this paragraph, "commenced" means that an owner or operator has undertaken a continuous program of component replacement or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of component replacement.

§ 60.489A LIST OF CHEMICALS PRODUCED BY AFFECTED FACILITIES.

Process units that produce, as intermediates or final products, chemicals listed in §60.489 are covered under this subpart. The applicability date for process units producing one or more of these chemicals is November 8, 2006

SECTION 4. APPENDIX AAAAA

NSPS SUBPART AAAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

SUBPART AAAAA—STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTION UNITS FOR WHICH CONSTRUCTION IS COMMENCED AFTER AUGUST 30, 1999 OR FOR WHICH MODIFICATION OR RECONSTRUCTION IS COMMENCED AFTER JUNE 6, 2001

Source: 65 FR 76355, Dec. 6, 2000, unless otherwise noted.

INTRODUCTION

§ 60.1000 WHAT DOES THIS SUBPART DO?

This subpart establishes new source performance standards for new small municipal waste combustion units.

§ 60.1005 WHEN DOES THIS SUBPART BECOME EFFECTIVE?

This subpart takes effect June 6, 2001. Some of the requirements in this subpart apply to municipal waste combustion unit planning and must be completed before construction is commenced on the municipal waste combustion unit. In particular, the preconstruction requirements in §§60.1050 through 60.1150 must be completed prior to commencing construction. Other requirements (such as the emission limits) apply when the municipal waste combustion unit begins operation.

APPLICABILITY

§ 60.1010 DOES THIS SUBPART APPLY TO MY MUNICIPAL WASTE COMBUSTION UNIT?

Yes, if your municipal waste combustion unit meets two criteria:

- (a) Your municipal waste combustion unit is a new municipal waste combustion unit.
- (b) Your municipal waste combustion unit has the capacity to combust at least 35 tons per day but no more than 250 tons per day of municipal solid waste or refuse-derived fuel.

§ 60.1015 WHAT IS A NEW MUNICIPAL WASTE COMBUSTION UNIT?

(a) A new municipal waste combustion unit is a municipal waste combustion unit that meets either of two criteria:

- (1) Commenced construction after August 30, 1999.
- (2) Commenced reconstruction or modification after June 6, 2001.

(b) This subpart does not apply to your municipal waste combustion unit if you make physical or operational changes to an existing municipal waste combustion unit primarily to comply with the emission guidelines in subpart BBBB of this part. Such changes do not qualify as reconstruction or modification under this subpart.

§ 60.1020 DOES THIS SUBPART ALLOW ANY EXEMPTIONS?

(a) *Small municipal waste combustion units that combust less than 11 tons per day.* You are exempt from this subpart if you meet four requirements:

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NSPS SUBPART AAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

(1) Your municipal waste combustion unit is subject to a federally enforceable permit limiting the amount of municipal solid waste combusted to less than 11 tons per day.

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with a copy of the federally enforceable permit.

(4) You keep daily records of the amount of municipal solid waste combusted.

(b) *Small power production facilities.* You are exempt from this subpart if you meet four requirements:

(1) Your unit qualifies as a small power production facility under section 3(17)(C) of the Federal Power Act (16 U.S.C. 796(17)(C)).

(2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity.

(3) You notify the Administrator that the unit qualifies for the exemption.

(4) You provide the Administrator with documentation that the unit qualifies for the exemption.

(c) *Cogeneration facilities.* You are exempt from this subpart if you meet four requirements:

(1) Your unit qualifies as a cogeneration facility under section 3(18)(B) of the Federal Power Act (16 U.S.C. 796(18)(B)).

(2) Your unit combusts homogeneous waste (excluding refuse-derived fuel) to produce electricity and steam or other forms of energy used for industrial, commercial, heating, or cooling purposes.

(3) You notify the Administrator that the unit qualifies for the exemption.

(4) You provide the Administrator with documentation that the unit qualifies for the exemption.

(d) *Municipal waste combustion units that combust only tires.* You are exempt from this subpart if you meet three requirements:

(1) Your municipal waste combustion unit combusts a single-item waste stream of tires and no other municipal waste (the unit can co-fire coal, fuel oil, natural gas, or other nonmunicipal solid waste).

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with documentation that the unit qualifies for the exemption.

(e) *Hazardous waste combustion units.* You are exempt from this subpart if you get a permit for your unit under section 3005 of the Solid Waste Disposal Act.

(f) *Materials recovery units.* You are exempt from this subpart if your unit combusts waste mainly to recover metals. Primary and secondary smelters qualify for the exemption.

(g) *Co-fired combustors.* You are exempt from this subpart if you meet four requirements:

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NSPS SUBPART AAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

(1) Your unit has a federally enforceable permit limiting the combustion of municipal solid waste to 30 percent of the total fuel input by weight.

(2) You notify the Administrator that the unit qualifies for the exemption.

(3) You provide the Administrator with a copy of the federally enforceable permit.

(4) You record the weights, each quarter, of municipal solid waste and of all other fuels combusted.

(h) *Plastics/rubber recycling units.* You are exempt from this subpart if you meet four requirements:

(1) Your pyrolysis/combustion unit is an integrated part of a plastics/rubber recycling unit as defined under "Definitions" (§60.1465).

(2) You record the weights, each quarter, of plastics, rubber, and rubber tires processed.

(3) You record the weights, each quarter, of feed stocks produced and marketed from chemical plants and petroleum refineries.

(4) You keep the name and address of the purchaser of those feed stocks.

(i) *Units that combust fuels made from products of plastics/rubber recycling plants.* You are exempt from this subpart if you meet two requirements:

(1) Your unit combusts gasoline, diesel fuel, jet fuel, fuel oils, residual oil, refinery gas, petroleum coke, liquified petroleum gas, propane, or butane produced by chemical plants or petroleum refineries that use feedstocks produced by plastics/rubber recycling units.

(2) Your unit does not combust any other municipal solid waste.

(j) *Cement kilns.* You are exempt from this subpart if your cement kiln combusts municipal solid waste.

(k) *Air curtain incinerators.* If your air curtain incinerator (see §60.1465 for definition) combusts 100 percent yard waste, you must meet only the requirements under "Air Curtain Incinerators That Burn 100 Percent Yard Waste" (§§60.1435 through 60.1455).

§ 60.1025 DO SUBPART E NEW SOURCE PERFORMANCE STANDARDS ALSO APPLY TO MY MUNICIPAL WASTE COMBUSTION UNIT?

If this subpart AAAA applies to your municipal waste combustion unit, then subpart E of this part does not apply to your municipal waste combustion unit.

§ 60.1030 CAN THE ADMINISTRATOR DELEGATE AUTHORITY TO ENFORCE THESE FEDERAL NEW SOURCE PERFORMANCE STANDARDS TO A STATE AGENCY?

Yes, the Administrator can delegate all authorities in all sections of this subpart to the State for direct State enforcement.

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§ 60.1035 HOW ARE THESE NEW SOURCE PERFORMANCE STANDARDS STRUCTURED?

These new source performance standards contain five major components:

- (a) Preconstruction requirements.
 - (1) Materials separation plan.
 - (2) Siting analysis.
- (b) Good combustion practices.
 - (1) Operator training.
 - (2) Operator certification.
 - (3) Operating requirements.
- (c) Emission limits.
- (d) Monitoring and stack testing.
- (e) Recordkeeping and reporting.

§ 60.1040 DO ALL FIVE COMPONENTS OF THESE NEW SOURCE PERFORMANCE STANDARDS APPLY AT THE SAME TIME?

No, you must meet the preconstruction requirements before you commence construction of the municipal waste combustion unit. After the municipal waste combustion unit begins operation, you must meet all of the good combustion practices, emission limits, monitoring, stack testing, and most recordkeeping and reporting requirements.

§ 60.1045 ARE THERE DIFFERENT SUBCATEGORIES OF SMALL MUNICIPAL WASTE COMBUSTION UNITS WITHIN THIS SUBPART?

(a) Yes, this subpart subcategorizes small municipal waste combustion units into two groups based on the aggregate capacity of the municipal waste combustion plant as follows:

(1) *Class I Units.* Class I units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. (See the definition of "municipal waste combustion plant capacity" in §60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.)

(2) *Class II Units.* Class II units are small municipal waste combustion units that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. (See the definition of "municipal waste combustion plant capacity" in §60.1465 for specification of which units at a plant are included in the aggregate capacity calculation.)

(b) The requirements for Class I and Class II units are identical except for two items:

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- (1) Class I units have a nitrogen oxides emission limit. Class II units do not have a nitrogen oxides emission limit (see table 1 of this subpart). Additionally, Class I units have continuous emission monitoring, recordkeeping, and reporting requirements for nitrogen oxides.
- (2) Class II units are eligible for the reduced testing option provided in §60.1305.

PRECONSTRUCTION REQUIREMENTS: MATERIALS SEPARATION PLAN

§ 60.1050 WHO MUST SUBMIT A MATERIALS SEPARATION PLAN?

- (a) You must prepare a materials separation plan for your municipal waste combustion unit if you commence construction of a new small municipal waste combustion unit after December 6, 2000.
- (b) If you commence construction of your municipal waste combustion unit after August 30, 1999 but before December 6, 2000, you are not required to prepare the materials separation plan specified in this subpart.
- (c) You must prepare a materials separation plan if you are required to submit an initial application for a construction permit, under 40 CFR part 51, subpart I, or part 52, as applicable, for the reconstruction or modification of your municipal waste combustion unit.

§ 60.1055 WHAT IS A MATERIALS SEPARATION PLAN?

The plan identifies a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling.

§ 60.1060 WHAT STEPS MUST I COMPLETE FOR MY MATERIALS SEPARATION PLAN?

- (a) For your materials separation plan, you must complete nine steps:
- (1) Prepare a draft materials separation plan.
 - (2) Make your draft plan available to the public.
 - (3) Hold a public meeting on your draft plan.
 - (4) Prepare responses to public comments received during the public comment period on your draft plan.
 - (5) Prepare a revised materials separation plan.
 - (6) Discuss the revised plan at the public meeting for review of the siting analysis.
 - (7) Prepare responses to public comments received on your revised plan.
 - (8) Prepare a final materials separation plan.
 - (9) Submit the final materials separation plan.
- (b) You may use analyses conducted under the requirements of 40 CFR part 51, subpart I, or part 52, to comply with some of the materials separation requirements of this subpart.

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§ 60.1065 WHAT MUST I INCLUDE IN MY DRAFT MATERIALS SEPARATION PLAN?

- (a) You must prepare and submit a draft materials separation plan for your municipal waste combustion unit and its service area.
- (b) Your draft materials separation plan must identify a goal and an approach for separating certain components of municipal solid waste for a given service area prior to waste combustion and making them available for recycling. A materials separation plan may include such elements as drop-off facilities, buy-back or deposit-return incentives, programs for curbside pickup, and centralized systems for mechanical separation.
- (c) Your materials separation plan may include different goals or approaches for different subareas in the service area.
- (d) Your materials separation plan may exclude materials separation activities for certain subareas or, if warranted, the entire service area.

§ 60.1070 HOW DO I MAKE MY DRAFT MATERIALS SEPARATION PLAN AVAILABLE TO THE PUBLIC?

- (a) Distribute your draft materials separation plan to the main public libraries in the area where you will construct the municipal waste combustion unit.
- (b) Publish a notice of a public meeting in the main newspapers that serve two areas:
 - (1) The area where you will construct the municipal waste combustion unit.
 - (2) The areas where the waste that your municipal waste combustion unit combusts will be collected.
- (c) Include six items in your notice of the public meeting:
 - (1) The date of the public meeting.
 - (2) The time of the public meeting.
 - (3) The location of the public meeting.
 - (4) The location of the public libraries where the public can find your materials separation plan. Include the normal business hours of each library.
 - (5) An agenda of the topics that will be discussed at the public meeting.
 - (6) The beginning and ending dates of the public comment period on your draft materials separation plan.

§ 60.1075 WHEN MUST I ACCEPT COMMENTS ON THE MATERIALS SEPARATION PLAN?

- (a) You must accept verbal comments at the public meeting.
- (b) You must accept written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.

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§ 60.1080 WHERE AND WHEN MUST I HOLD A PUBLIC MEETING ON MY DRAFT MATERIALS SEPARATION PLAN?

- (a) You must hold a public meeting and accept comments on your draft materials separation plan.
- (b) You must hold the public meeting in the county where you will construct the municipal waste combustion unit.
- (c) You must schedule the public meeting to occur at least 30 days after you make your draft materials separation plan available to the public.
- (d) You may combine the public meeting with any other public meeting required as part of any other Federal, State, or local permit review. However, you may not combine it with the public meeting required for the siting analysis under "Preconstruction Requirements: Siting Analysis" (§60.1140).
- (e) You are encouraged to address eight topics at the public meeting for your draft materials separation plan:
 - (1) Expected size of the service area for your municipal waste combustion unit.
 - (2) Amount of waste you will collect in the service area.
 - (3) Types and estimated amounts of materials proposed for separation.
 - (4) Methods proposed for materials separation.
 - (5) Amount of residual waste for disposal.
 - (6) Alternate disposal methods for handling the residual waste.
 - (7) Where your responses to public comments on the draft materials separation plan will be available for inspection.
 - (8) Where your revised materials separation plan will be available for inspection.
- (f) You must prepare a transcript of the public meeting on your draft materials separation plan.

§ 60.1085 WHAT MUST I DO WITH ANY PUBLIC COMMENTS I RECEIVE DURING THE PUBLIC COMMENT PERIOD ON MY DRAFT MATERIALS SEPARATION PLAN?

You must do three steps:

- (a) Prepare written responses to any public comments you received during the public comment period. Summarize the responses to public comments in a document that is separate from your revised materials separation plan.
- (b) Make the comment response document available to the public in the service area where you will construct your municipal waste combustion unit. You must distribute the document at least to the main public libraries used to announce the public meeting.

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(c) Prepare a revised materials separation plan for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments you received during the public comment period.

§ 60.1090 WHAT MUST I DO WITH MY REVISED MATERIALS SEPARATION PLAN?

You must do two tasks:

(a) As specified under "Reporting" (§60.1375), submit five items to the Administrator by the date you submit the application for a construction permit under 40 CFR part 51, subpart I, or part 52. (If you are not required to submit an application for a construction permit under 40 CFR part 51, subpart I, or part 52, submit five items to the Administrator by the date of your notice of construction under §60.1380):

- (1) Your draft materials separation plan.
- (2) Your revised materials separation plan.
- (3) Your notice of the public meeting for your draft materials separation plan.
- (4) A transcript of the public meeting on your draft materials separation plan.
- (5) The document that summarizes your responses to the public comments you received during the public comment period on your draft materials separation plan.

(b) Make your revised materials separation plan available to the public as part of the siting analysis procedures under "Preconstruction Requirements: Siting Analysis" (§60.1130).

§ 60.1095 WHAT MUST I INCLUDE IN THE PUBLIC MEETING ON MY REVISED MATERIALS SEPARATION PLAN?

As part of the public meeting for review of the siting analysis, as specified under "Preconstruction Requirements: Siting Analysis" (§60.1140), you must discuss two areas:

- (a) Differences between your revised materials separation plan and your draft materials separation plan discussed at the first public meeting (§60.1080).
- (b) Questions about your revised materials separation plan.

§ 60.1100 WHAT MUST I DO WITH ANY PUBLIC COMMENTS I RECEIVE ON MY REVISED MATERIALS SEPARATION PLAN?

- (a) Prepare written responses to any public comments and include them in the document that summarizes your responses to public comments on the siting analysis.
- (b) Prepare a final materials separation plan that includes, as appropriate, changes made in response to any public comments you received on your revised materials separation plan.

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§ 60.1105 HOW DO I SUBMIT MY FINAL MATERIALS SEPARATION PLAN?

As specified under "Reporting" (§60.1380), submit your final materials separation plan to the Administrator as part of the notice of construction for the municipal waste combustion unit.

PRECONSTRUCTION REQUIREMENTS: SITING ANALYSIS

§ 60.1110 WHO MUST SUBMIT A SITING ANALYSIS?

- (a) You must prepare a siting analysis if you commence construction of a small municipal waste combustion unit after December 6, 2000.
- (b) If you commence construction on your municipal waste combustion unit after August 30, 1999, but before December 6, 2000, you are not required to prepare the siting analysis specified in this subpart.
- (c) You must prepare a siting analysis if you are required to submit an initial application for a construction permit, under 40 CFR part 51, subpart I, or part 52, as applicable, for the reconstruction or modification of your municipal waste combustion unit.

§ 60.1115 WHAT IS A SITING ANALYSIS?

The siting analysis addresses how your municipal waste combustion unit affects ambient air quality, visibility, soils, vegetation, and other relevant factors. The analysis can be used to determine whether the benefits of your proposed facility significantly outweigh the environmental and social costs resulting from its location and construction. The analysis must also consider other major industrial facilities near the proposed site.

§ 60.1120 WHAT STEPS MUST I COMPLETE FOR MY SITING ANALYSIS?

- (a) For your siting analysis, you must complete five steps:
- (1) Prepare an analysis.
 - (2) Make your analysis available to the public.
 - (3) Hold a public meeting on your analysis.
 - (4) Prepare responses to public comments received on your analysis.
 - (5) Submit your analysis.
- (b) You may use analyses conducted under the requirements of 40 CFR part 51, subpart I, or part 52, to comply with some of the siting analysis requirements of this subpart.

§ 60.1125 WHAT MUST I INCLUDE IN MY SITING ANALYSIS?

- (a) Include an analysis of how your municipal waste combustion unit affects four areas:
- (1) Ambient air quality.
 - (2) Visibility.

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(3) Soils.

(4) Vegetation.

(b) Include an analysis of alternatives for controlling air pollution that minimize potential risks to the public health and the environment.

§ 60.1130 HOW DO I MAKE MY SITING ANALYSIS AVAILABLE TO THE PUBLIC?

(a) Distribute your siting analysis and revised materials separation plan to the main public libraries in the area where you will construct your municipal waste combustion unit.

(b) Publish a notice of a public meeting in the main newspapers that serve two areas:

(1) The area where you will construct your municipal waste combustion unit.

(2) The areas where the waste that your municipal waste combustion unit combusts will be collected.

(c) Include six items in your notice of the public meeting:

(1) The date of the public meeting.

(2) The time of the public meeting.

(3) The location of the public meeting.

(4) The location of the public libraries where the public can find your siting analysis and revised materials separation plan. Include the normal business hours of each library.

(5) An agenda of the topics that will be discussed at the public meeting.

(6) The beginning and ending dates of the public comment period on your siting analysis and revised materials separation plan.

§ 60.1135 WHEN MUST I ACCEPT COMMENTS ON THE SITING ANALYSIS AND REVISED MATERIALS SEPARATION PLAN?

(a) You must accept verbal comments at the public meeting.

(b) You must accept written comments anytime during the period that begins on the date the document is distributed to the main public libraries and ends 30 days after the date of the public meeting.

§ 60.1140 WHERE AND WHEN MUST I HOLD A PUBLIC MEETING ON THE SITING ANALYSIS?

(a) You must hold a public meeting to discuss and accept comments on your siting analysis and your revised materials separation plan.

(b) You must hold the public meeting in the county where you will construct your municipal waste combustion unit.

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(c) You must schedule the public meeting to occur at least 30 days after you make your siting analysis and revised materials separation plan available to the public.

(d) You must prepare a transcript of the public meeting on your siting analysis.

§ 60.1145 WHAT MUST I DO WITH ANY PUBLIC COMMENTS I RECEIVE DURING THE PUBLIC COMMENT PERIOD ON MY SITING ANALYSIS?

You must do three things:

(a) Prepare written responses to any public comments on your siting analysis and the revised materials separation plan you received during the public comment period. Summarize the responses to public comments in a document that is separate from your materials separation plan and siting analysis.

(b) Make the comment response document available to the public in the service area where you will construct your municipal waste combustion unit. You must distribute the document at least to the main public libraries used to announce the public meeting for the siting analysis.

(c) Prepare a revised siting analysis for the municipal waste combustion unit that includes, as appropriate, changes made in response to any public comments you received during the public comment period.

§ 60.1150 HOW DO I SUBMIT MY SITING ANALYSIS?

As specified under "Reporting" (§60.1380), submit four items as part of the notice of construction:

(a) Your siting analysis.

(b) Your notice of the public meeting on your siting analysis.

(c) A transcript of the public meeting on your siting analysis.

(d) The document that summarizes your responses to the public comments you received during the public comment period.

GOOD COMBUSTION PRACTICES: OPERATOR TRAINING

§ 60.1155 WHAT TYPES OF TRAINING MUST I DO?

There are two types of required training:

(a) Training of operators of municipal waste combustion units using the U.S. Environmental Protection Agency (EPA) or a State-approved training course.

(b) Training of plant personnel using a plant-specific training course.

§ 60.1160 WHO MUST COMPLETE THE OPERATOR TRAINING COURSE? BY WHEN?

(a) Three types of employees must complete the EPA or State-approved operator training course:

(1) Chief facility operators.

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(2) Shift supervisors.

(3) Control room operators.

(b) Those employees must complete the operator training course by the later of three dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

§ 60.1165 WHO MUST COMPLETE THE PLANT-SPECIFIC TRAINING COURSE?

All employees with responsibilities that affect how a municipal waste combustion unit operates must complete the plant-specific training course. Include at least six types of employees:

(a) Chief facility operators.

(b) Shift supervisors.

(c) Control room operators.

(d) Ash handlers.

(e) Maintenance personnel.

(f) Crane or load handlers.

§ 60.1170 WHAT PLANT-SPECIFIC TRAINING MUST I PROVIDE?

For plant-specific training, you must do four things:

(a) For training at a particular plant, develop a specific operating manual for that plant by the later of two dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(b) Establish a program to review the plant-specific operating manual with people whose responsibilities affect the operation of your municipal waste combustion unit. Complete the initial review by the later of three dates:

(1) Six months after your municipal waste combustion unit initial startup.

(2) December 6, 2001.

(3) The date before an employee assumes responsibilities that affect operation of the municipal waste combustion unit.

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- (c) Update your manual annually.
- (d) Review your manual with staff annually.

§ 60.1175 WHAT INFORMATION MUST I INCLUDE IN THE PLANT-SPECIFIC OPERATING MANUAL?

You must include 11 items in the operating manual for your plant:

- (a) A summary of all applicable requirements in this subpart.
- (b) A description of the basic combustion principles that apply to municipal waste combustion units.
- (c) Procedures for receiving, handling, and feeding municipal solid waste.
- (d) Procedures to be followed during periods of startup, shutdown, and malfunction of the municipal waste combustion unit.
- (e) Procedures for maintaining a proper level of combustion air supply.
- (f) Procedures for operating the municipal waste combustion unit in compliance with the requirements contained in this subpart.
- (g) Procedures for responding to periodic upset or off-specification conditions.
- (h) Procedures for minimizing carryover of particulate matter.
- (i) Procedures for handling ash.
- (j) Procedures for monitoring emissions from the municipal waste combustion unit.
- (k) Procedures for recordkeeping and reporting.

§ 60.1180 WHERE MUST I KEEP THE PLANT-SPECIFIC OPERATING MANUAL?

You must keep your operating manual in an easily accessible location at your plant. It must be available for review or inspection by all employees who must review it and by the Administrator.

GOOD COMBUSTION PRACTICES: OPERATOR CERTIFICATION

§ 60.1185 WHAT TYPES OF OPERATOR CERTIFICATION MUST THE CHIEF FACILITY OPERATOR AND SHIFT SUPERVISOR OBTAIN AND BY WHEN MUST THEY OBTAIN IT?

- (a) Each chief facility operator and shift supervisor must obtain and keep a current provisional operator certification from the American Society of Mechanical Engineers (QRO-1-1994) (incorporated by reference in §60.17(h)(1)) or a current provisional operator certification from your State certification program.
- (b) Each chief facility operator and shift supervisor must obtain a provisional certification by the later of three dates:

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- (1) Six months after the municipal waste combustion unit initial startup.
 - (2) December 6, 2001.
 - (3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.
- (c) Each chief facility operator and shift supervisor must take one of three actions:
- (1) Obtain a full certification from the American Society of Mechanical Engineers or a State certification program in your State.
 - (2) Schedule a full certification exam with the American Society of Mechanical Engineers (QRO-1-1994) (incorporated by reference in §60.17(h)(1)).
 - (3) Schedule a full certification exam with your State certification program.
- (d) The chief facility operator and shift supervisor must obtain the full certification or be scheduled to take the certification exam by the later of three dates:
- (1) Six months after the municipal waste combustion unit initial startup.
 - (2) December 6, 2001.
 - (3) Six months after they transfer to the municipal waste combustion unit or 6 months after they are hired to work at the municipal waste combustion unit.

§ 60.1190 AFTER THE REQUIRED DATE FOR OPERATOR CERTIFICATION, WHO MAY OPERATE THE MUNICIPAL WASTE COMBUSTION UNIT?

After the required date for full or provisional certifications, you must not operate your municipal waste combustion unit unless one of four employees is on duty:

- (a) A fully certified chief facility operator.
- (b) A provisionally certified chief facility operator who is scheduled to take the full certification exam.
- (c) A fully certified shift supervisor.
- (d) A provisionally certified shift supervisor who is scheduled to take the full certification exam.

§ 60.1195 WHAT IF ALL THE CERTIFIED OPERATORS MUST BE TEMPORARILY OFFSITE?

If the certified chief facility operator and certified shift supervisor both are unavailable, a provisionally certified control room operator at the municipal waste combustion unit may fulfill the certified operator requirement. Depending on the length of time that a certified chief facility operator and certified shift supervisor are away, you must meet one of three criteria:

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- (a) When the certified chief facility operator and certified shift supervisor are both offsite for 12 hours or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator.
- (b) When the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must record the period when the certified chief facility operator and certified shift supervisor are offsite and include that information in the annual report as specified under §60.1410(1).
- (c) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks, and no other certified operator is onsite, the provisionally certified control room operator may perform those duties without notice to, or approval by, the Administrator. However, you must take two actions:
- (1) Notify the Administrator in writing. In the notice, state what caused the absence and what you are doing to ensure that a certified chief facility operator or certified shift supervisor is onsite.
- (2) Submit a status report and corrective action summary to the Administrator every 4 weeks following the initial notification. If the Administrator notifies you that your status report or corrective action summary is disapproved, the municipal waste combustion unit may continue operation for 90 days, but then must cease operation. If corrective actions are taken in the 90-day period such that the Administrator withdraws the disapproval, municipal waste combustion unit operation may continue.

GOOD COMBUSTION PRACTICES: OPERATING REQUIREMENTS

§ 60.1200 WHAT ARE THE OPERATING PRACTICE REQUIREMENTS FOR MY MUNICIPAL WASTE COMBUSTION UNIT?

- (a) You must not operate your municipal waste combustion unit at loads greater than 110 percent of the maximum demonstrated load of the municipal waste combustion unit (4-hour block average), as specified under "Definitions" (§60.1465).
- (b) You must not operate your municipal waste combustion unit so that the temperature at the inlet of the particulate matter control device exceeds 17°C above the maximum demonstrated temperature of the particulate matter control device (4-hour block average), as specified under "Definitions" (§60.1465).
- (c) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must maintain an 8-hour block average carbon feed rate at or above the highest average level established during the most recent dioxins/furans or mercury test.
- (d) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must evaluate total carbon usage for each calendar quarter. The total amount of carbon purchased and delivered to your municipal waste combustion plant must be at or above the required quarterly usage of carbon. At your option, you may choose to evaluate required quarterly carbon usage on a municipal waste combustion unit basis for each individual municipal waste combustion unit at your plant. Calculate the required quarterly usage of carbon using equation 4 or 5 in §60.1460(f).
- (e) Your municipal waste combustion unit is exempt from limits on load level, temperature at the inlet of the particulate matter control device, and carbon feed rate during any of five situations:

- (1) During your annual tests for dioxins/furans.

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- (2) During your annual mercury tests (for carbon feed rate requirements only).
- (3) During the 2 weeks preceding your annual tests for dioxins/furans.
- (4) During the 2 weeks preceding your annual mercury tests (for carbon feed rate requirements only).
- (5) Whenever the Administrator or delegated State authority permits you to do any of five activities:
 - (i) Evaluate system performance.
 - (ii) Test new technology or control technologies.
 - (iii) Perform diagnostic testing.
 - (iv) Perform other activities to improve the performance of your municipal waste combustion unit.
 - (v) Perform other activities to advance the state of the art for emission controls for your municipal waste combustion unit.

§ 60.1205 WHAT HAPPENS TO THE OPERATING REQUIREMENTS DURING PERIODS OF STARTUP, SHUTDOWN, AND MALFUNCTION?

- (a) The operating requirements of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.
- (b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

EMISSION LIMITS

§ 60.1210 WHAT POLLUTANTS ARE REGULATED BY THIS SUBPART?

Eleven pollutants, in four groupings, are regulated:

- (a) *Organics*. Dioxins/furans.
- (b) *Metals*. (1) Cadmium.
 - (2) Lead.
 - (3) Mercury.
 - (4) Opacity.
 - (5) Particulate matter.
- (c) *Acid gases*. (1) Hydrogen chloride.
 - (2) Nitrogen oxides.

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(3) Sulfur dioxide.

(d) *Other.* (1) Carbon monoxide.

(2) Fugitive ash.

§ 60.1215 WHAT EMISSION LIMITS MUST I MEET? BY WHEN?

You must meet the emission limits specified in tables 1 and 2 of this subpart. You must meet the limits 60 days after your municipal waste combustion unit reaches the maximum load level but no later than 180 days after its initial startup.

§ 60.1220 WHAT HAPPENS TO THE EMISSION LIMITS DURING PERIODS OF STARTUP, SHUTDOWN, AND MALFUNCTION?

(a) The emission limits of this subpart apply at all times except during periods of municipal waste combustion unit startup, shutdown, or malfunction.

(b) Each startup, shutdown, or malfunction must not last for longer than 3 hours.

(c) A maximum of 3 hours of test data can be dismissed from compliance calculations during periods of startup, shutdown, or malfunction.

(d) During startup, shutdown, or malfunction periods longer than 3 hours, emissions data cannot be discarded from compliance calculations and all provisions under §60.11(d) apply.

CONTINUOUS EMISSION MONITORING

§ 60.1225 WHAT TYPES OF CONTINUOUS EMISSION MONITORING MUST I PERFORM?

To continuously monitor emissions, you must perform four tasks:

(a) Install continuous emission monitoring systems for certain gaseous pollutants.

(b) Make sure your continuous emission monitoring systems are operating correctly.

(c) Make sure you obtain the minimum amount of monitoring data.

(d) Install a continuous opacity monitoring system.

§ 60.1230 WHAT CONTINUOUS EMISSION MONITORING SYSTEMS MUST I INSTALL FOR GASEOUS POLLUTANTS?

(a) You must install, calibrate, maintain, and operate continuous emission monitoring systems for oxygen (or carbon dioxide), sulfur dioxide, and carbon monoxide. If you operate a Class I municipal waste combustion unit, you must also install, calibrate, maintain, and operate a continuous emission monitoring system for nitrogen oxides. Install the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and oxygen (or carbon dioxide) at the outlet of the air pollution control device.

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- (b) You must install, evaluate, and operate each continuous emission monitoring system according to the "Monitoring Requirements" in §60.13.
- (c) You must monitor the oxygen (or carbon dioxide) concentration at each location where you monitor sulfur dioxide and carbon monoxide. Additionally, if you operate a Class I municipal waste combustion unit, you must also monitor the oxygen (or carbon dioxide) concentration at the location where you monitor nitrogen oxides.
- (d) You may choose to monitor carbon dioxide instead of oxygen as a diluent gas. If you choose to monitor carbon dioxide, then an oxygen monitor is not required, and you must follow the requirements in §60.1255.
- (e) If you choose to demonstrate compliance by monitoring the percent reduction of sulfur dioxide, you must also install continuous emission monitoring systems for sulfur dioxide and oxygen (or carbon dioxide) at the inlet of the air pollution control device.
- (f) If you prefer to use an alternative sulfur dioxide monitoring method, such as parametric monitoring, or cannot monitor emissions at the inlet of the air pollution control device to determine percent reduction, you can apply to the Administrator for approval to use an alternative monitoring method under §60.13(i).

§ 60.1235 HOW ARE THE DATA FROM THE CONTINUOUS EMISSION MONITORING SYSTEMS USED?

You must use data from the continuous emission monitoring systems for sulfur dioxide, nitrogen oxides, and carbon monoxide to demonstrate continuous compliance with the emission limits specified in tables 1 and 2 of this subpart. To demonstrate compliance for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, see §60.1290.

§ 60.1240 HOW DO I MAKE SURE MY CONTINUOUS EMISSION MONITORING SYSTEMS ARE OPERATING CORRECTLY?

- (a) Conduct initial, daily, quarterly, and annual evaluations of your continuous emission monitoring systems that measure oxygen (or carbon dioxide), sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide.
- (b) Complete your initial evaluation of the continuous emission monitoring systems within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.
- (c) For initial and annual evaluations, collect data concurrently (or within 30 to 60 minutes) using your oxygen (or carbon dioxide) continuous emission monitoring system, your sulfur dioxide, nitrogen oxides, or carbon monoxide continuous emission monitoring systems, as appropriate, and the appropriate test methods specified in table 3 of this subpart. Collect the data during each initial and annual evaluation of your continuous emission monitoring systems following the applicable performance specifications in appendix B of this part. table 4 of this subpart shows the performance specifications that apply to each continuous emission monitoring system.
- (d) Follow the quality assurance procedures in Procedure 1 of appendix F of this part for each continuous emission monitoring system. The procedures include daily calibration drift and quarterly accuracy determinations.

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§ 60.1245 AM I EXEMPT FROM ANY APPENDIX B OR APPENDIX F REQUIREMENTS TO EVALUATE CONTINUOUS EMISSION MONITORING SYSTEMS?

Yes, the accuracy tests for your sulfur dioxide continuous emission monitoring system require you to also evaluate your oxygen (or carbon dioxide) continuous emission monitoring system. Therefore, your oxygen (or carbon dioxide) continuous emission monitoring system is exempt from two requirements:

- (a) Section 2.3 of Performance Specification 3 in appendix B of this part (relative accuracy requirement).
- (b) Section 5.1.1 of appendix F of this part (relative accuracy test audit).

§ 60.1250 WHAT IS MY SCHEDULE FOR EVALUATING CONTINUOUS EMISSION MONITORING SYSTEMS?

- (a) Conduct annual evaluations of your continuous emission monitoring systems no more than 13 months after the previous evaluation was conducted.
- (b) Evaluate your continuous emission monitoring systems daily and quarterly as specified in appendix F of this part.

§ 60.1255 WHAT MUST I DO IF I CHOOSE TO MONITOR CARBON DIOXIDE INSTEAD OF OXYGEN AS A DILUENT GAS?

You must establish the relationship between oxygen and carbon dioxide during the initial evaluation of your continuous emission monitoring systems. You may reestablish the relationship during annual evaluations. To establish the relationship use three procedures:

- (a) Use EPA Reference Method 3A or 3B in appendix A of this part to determine oxygen concentration at the location of your carbon dioxide monitor.
- (b) Conduct at least three test runs for oxygen. Make sure each test run represents a 1-hour average and that sampling continues for at least 30 minutes in each hour.
- (c) Use the fuel-factor equation in EPA Reference Method 3B in appendix A of this part to determine the relationship between oxygen and carbon dioxide.

§ 60.1260 WHAT IS THE MINIMUM AMOUNT OF MONITORING DATA I MUST COLLECT WITH MY CONTINUOUS EMISSION MONITORING SYSTEMS AND IS THE DATA COLLECTION REQUIREMENT ENFORCEABLE?

- (a) Where continuous emission monitoring systems are required, obtain 1-hour arithmetic averages. Make sure the averages for sulfur dioxide, nitrogen oxides, and carbon monoxide are in parts per million by dry volume at 7 percent oxygen (or the equivalent carbon dioxide level). Use the 1-hour averages of oxygen (or carbon dioxide) data from your continuous emission monitoring system to determine the actual oxygen (or carbon dioxide) level and to calculate emissions at 7 percent oxygen (or the equivalent carbon dioxide level).
- (b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average. Section 60.13(e)(2) requires your continuous emission monitoring systems to complete at least one cycle of operation (sampling, analyzing, and data recording) for each 15-minute period.

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- (c) Obtain valid 1-hour averages for 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.
- (d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement regardless of the emission level monitored, and you must notify the Administrator according to §60.1410(e).
- (e) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you must still use all valid data from the continuous emission monitoring systems in calculating emission concentrations and percent reductions in accordance with §60.1265.

§ 60.1265 HOW DO I CONVERT MY 1-HOUR ARITHMETIC AVERAGES INTO THE APPROPRIATE AVERAGING TIMES AND UNITS?

- (a) Use the equation in §60.1460(a) to calculate emissions at 7 percent oxygen.
- (b) Use EPA Reference Method 19 in appendix A of this part, section 4.3, to calculate the daily geometric average concentrations of sulfur dioxide emissions. If you are monitoring the percent reduction of sulfur dioxide, use EPA Reference Method 19 in appendix A of this part, section 5.4, to determine the daily geometric average percent reduction of potential sulfur dioxide emissions.
- (c) If you operate a Class I municipal waste combustion unit, use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the daily arithmetic average for concentrations of nitrogen oxides.
- (d) Use EPA Reference Method 19 in appendix A of this part, section 4.1, to calculate the 4-hour or 24-hour daily block averages (as applicable) for concentrations of carbon monoxide.

§ 60.1270 WHAT IS REQUIRED FOR MY CONTINUOUS OPACITY MONITORING SYSTEM AND HOW ARE THE DATA USED?

- (a) Install, calibrate, maintain, and operate a continuous opacity monitoring system.
- (b) Install, evaluate, and operate each continuous opacity monitoring system according to §60.13.
- (c) Complete an initial evaluation of your continuous opacity monitoring system according to Performance Specification I in appendix B of this part. Complete the evaluation within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no more than 180 days after its initial startup.
- (d) Complete each annual evaluation of your continuous opacity monitoring system no more than 13 months after the previous evaluation.
- (e) Use tests conducted according to EPA Reference Method 9 in appendix A of this part, as specified in §60.1300, to determine compliance with the opacity limit in table 1 of this subpart. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the opacity limit.

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§ 60.1275 WHAT ADDITIONAL REQUIREMENTS MUST I MEET FOR THE OPERATION OF MY CONTINUOUS EMISSION MONITORING SYSTEMS AND CONTINUOUS OPACITY MONITORING SYSTEM?

Use the required span values and applicable performance specifications in table 4 of this subpart.

§ 60.1280 WHAT MUST I DO IF ANY OF MY CONTINUOUS EMISSION MONITORING SYSTEMS ARE TEMPORARILY UNAVAILABLE TO MEET THE DATA COLLECTION REQUIREMENTS?

Refer to table 4 of this subpart. It shows alternate methods for collecting data when systems malfunction or when repairs, calibration checks, or zero and span checks keep you from collecting the minimum amount of data.

STACK TESTING

§ 60.1285 WHAT TYPES OF STACK TESTS MUST I CONDUCT?

Conduct initial and annual stack tests to measure the emission levels of dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

§ 60.1290 HOW ARE THE STACK TEST DATA USED?

You must use results of stack tests for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash to demonstrate compliance with the emission limits in table 1 of this subpart. To demonstrate compliance for carbon monoxide, nitrogen oxides, and sulfur dioxide, see §60.1235.

§ 60.1295 WHAT SCHEDULE MUST I FOLLOW FOR THE STACK TESTING?

- (a) Conduct initial stack tests for the pollutants listed in §60.1285 within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.
- (b) Conduct annual stack tests for the same pollutants after the initial stack test. Conduct each annual stack test no later than 13 months after the previous stack test.

§ 60.1300 WHAT TEST METHODS MUST I USE TO STACK TEST?

- (a) Follow table 5 of this subpart to establish the sampling location and to determine pollutant concentrations, number of traverse points, individual test methods, and other specific testing requirements for the different pollutants.
- (b) Make sure that stack tests for all the pollutants consist of at least three test runs, as specified in §60.8. Use the average of the pollutant emission concentrations from the three test runs to determine compliance with the emission limits in table 1 of this subpart.
- (c) Obtain an oxygen (or carbon dioxide) measurement at the same time as your pollutant measurements to determine diluent gas levels, as specified in §60.1230.

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(d) Use the equations in §60.1460(a) to calculate emission levels at 7 percent oxygen (or an equivalent carbon dioxide basis), the percent reduction in potential hydrogen chloride emissions, and the reduction efficiency for mercury emissions. See the individual test methods in table 5 of this subpart for other required equations.

(e) You can apply to the Administrator for approval under §60.8(b) to use a reference method with minor changes in methodology, use an equivalent method, use an alternative method the results of which the Administrator has determined are adequate for demonstrating compliance, waive the requirement for a performance test because you have demonstrated by other means that you are in compliance, or use a shorter sampling time or smaller sampling volume.

§ 60.1305 MAY I CONDUCT STACK TESTING LESS OFTEN?

(a) You may test less often if you own or operate a Class II municipal waste combustion unit and if all stack tests for a given pollutant over 3 consecutive years show you comply with the emission limit. In that case, you are not required to conduct a stack test for that pollutant for the next 2 years. However, you must conduct another stack test within 36 months of the anniversary date of the third consecutive stack test that shows you comply with the emission limit. Thereafter, you must perform stack tests every 3rd year but no later than 36 months following the previous stack tests. If a stack test shows noncompliance with an emission limit, you must conduct annual stack tests for that pollutant until all stack tests over 3 consecutive years show compliance with the emission limit for that pollutant. The provision applies to all pollutants subject to stack testing requirements: dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash.

(b) You can test less often for dioxins/furans emissions if you own or operate a municipal waste combustion plant that meets two conditions. First, you have multiple municipal waste combustion units onsite that are subject to this subpart. Second, all those municipal waste combustion units have demonstrated levels of dioxins/furans emissions less than or equal to 7 nanograms per dry standard cubic meter (total mass) for 2 consecutive years. In that case, you may choose to conduct annual stack tests on only one municipal waste combustion unit per year at your plant. The provision only applies to stack testing for dioxins/furans emissions.

(1) Conduct the stack test no more than 13 months following a stack test on any municipal waste combustion unit subject to this subpart at your plant. Each year, test a different municipal waste combustion unit subject to this subpart and test all municipal waste combustion units subject to this subpart in a sequence that you determine. Once you determine a testing sequence, it must not be changed without approval by the Administrator.

(2) If each annual stack test shows levels of dioxins/furans emissions less than or equal to 7 nanograms per dry standard cubic meter (total mass), you may continue stack tests on only one municipal waste combustion unit subject to this subpart per year.

(3) If any annual stack test indicates levels of dioxins/furans emissions greater than 7 nanograms per dry standard cubic meter (total mass), conduct subsequent annual stack tests on all municipal waste combustion units subject to this subpart at your plant. You may return to testing one municipal waste combustion unit subject to this subpart per year if you can demonstrate dioxins/furans emission levels less than or equal to 7 nanograms per dry standard cubic meter (total mass) for all municipal waste combustion units at your plant subject to this subpart for 2 consecutive years.

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§ 60.1310 MAY I DEVIATE FROM THE 13-MONTH TESTING SCHEDULE IF UNFORESEEN CIRCUMSTANCES ARISE?

You may not deviate from the 13-month testing schedules specified in §§60.1295(b) and 60.1305(b)(1) unless you apply to the Administrator for an alternative schedule, and the Administrator approves your request for alternate scheduling prior to the date on which you would otherwise have been required to conduct the next stack test.

OTHER MONITORING REQUIREMENTS

§ 60.1315 MUST I MEET OTHER REQUIREMENTS FOR CONTINUOUS MONITORING?

You must also monitor three operating parameters:

- (a) Load level of each municipal waste combustion unit.
- (b) Temperature of flue gases at the inlet of your particulate matter air pollution control device.
- (c) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.

§ 60.1320 HOW DO I MONITOR THE LOAD OF MY MUNICIPAL WASTE COMBUSTION UNIT?

(a) If your municipal waste combustion unit generates steam, you must install, calibrate, maintain, and operate a steam flowmeter or a feed water flowmeter and meet five requirements:

- (1) Continuously measure and record the measurements of steam (or feed water) in kilograms (or pounds) per hour.
- (2) Calculate your steam (or feed water) flow in 4-hour block averages.
- (3) Calculate the steam (or feed water) flow rate using the method in "American Society of Mechanical Engineers Power Test Codes: Test Code for Steam Generating Units, Power Test Code 4.1—1964 (R1991)," section 4 (incorporated by reference in §60.17(h)(2)).
- (4) Design, construct, install, calibrate, and use nozzles or orifices for flow rate measurements, using the recommendations in "American Society of Mechanical Engineers Interim Supplement 19.5 on Instruments and Apparatus: Application, part II of Fluid Meters," 6th Edition (1971), chapter 4 (incorporated by reference in §60.17(h)(3)).
- (5) Before each dioxins/furans stack test, or at least once a year, calibrate all signal conversion elements associated with steam (or feed water) flow measurements according to the manufacturer instructions.

(b) If your municipal waste combustion unit does not generate steam, or, if your municipal waste combustion units have shared steam systems and steam load cannot be estimated per unit, you must determine, to the satisfaction of the Administrator, one or more operating parameters that can be used to continuously estimate load level (for example, the feed rate of municipal solid waste or refuse-derived fuel). You must continuously monitor the selected parameters.

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§ 60.1325 HOW DO I MONITOR THE TEMPERATURE OF FLUE GASES AT THE INLET OF MY PARTICULATE MATTER CONTROL DEVICE?

You must install, calibrate, maintain, and operate a device to continuously measure the temperature of the flue gas stream at the inlet of each particulate matter control device.

§ 60.1330 HOW DO I MONITOR THE INJECTION RATE OF ACTIVATED CARBON?

If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, you must meet three requirements:

- (a) Select a carbon injection system operating parameter that can be used to calculate carbon feed rate (for example, screw feeder speed).
- (b) During each dioxins/furans and mercury stack test, determine the average carbon feed rate in kilograms (or pounds) per hour. Also, determine the average operating parameter level that correlates to the carbon feed rate. Establish a relationship between the operating parameter and the carbon feed rate in order to calculate the carbon feed rate based on the operating parameter level.
- (c) Continuously monitor the selected operating parameter during all periods when the municipal waste combustion unit is operating and combusting waste, and calculate the 8-hour block average carbon feed rate in kilograms (or pounds) per hour, based on the selected operating parameter. When calculating the 8-hour block average, do two things:
 - (1) Exclude hours when the municipal waste combustion unit is not operating.
 - (2) Include hours when the municipal waste combustion unit is operating but the carbon feed system is not working correctly.

§ 60.1335 WHAT IS THE MINIMUM AMOUNT OF MONITORING DATA I MUST COLLECT WITH MY CONTINUOUS PARAMETER MONITORING SYSTEMS AND IS THE DATA COLLECTION REQUIREMENT ENFORCEABLE?

- (a) Where continuous parameter monitoring systems are used, obtain 1-hour arithmetic averages for three parameters:
 - (1) Load level of the municipal waste combustion unit.
 - (2) Temperature of the flue gases at the inlet of your particulate matter control device.
 - (3) Carbon feed rate if activated carbon is used to control dioxins/furans or mercury emissions.
- (b) Obtain at least two data points per hour in order to calculate a valid 1-hour arithmetic average.
- (c) Obtain valid 1-hour averages for at least 75 percent of the operating hours per day for 90 percent of the operating days per calendar quarter. An operating day is any day the unit combusts any municipal solid waste or refuse-derived fuel.
- (d) If you do not obtain the minimum data required in paragraphs (a) through (c) of this section, you are in violation of the data collection requirement and you must notify the Administrator according to §60.1410(e).

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RECORDKEEPING

§ 60.1340 WHAT RECORDS MUST I KEEP?

You must keep five types of records:

- (a) Materials separation plan and siting analysis.
- (b) Operator training and certification.
- (c) Stack tests.
- (d) Continuously monitored pollutants and parameters.
- (e) Carbon feed rate.

§ 60.1345 WHERE MUST I KEEP MY RECORDS AND FOR HOW LONG?

- (a) Keep all records onsite in paper copy or electronic format unless the Administrator approves another format.
- (b) Keep all records on each municipal waste combustion unit for at least 5 years.
- (c) Make all records available for submittal to the Administrator, or for onsite review by an inspector.

§ 60.1350 WHAT RECORDS MUST I KEEP FOR THE MATERIALS SEPARATION PLAN AND SITING ANALYSIS?

You must keep records of five items:

- (a) The date of each record.
- (b) The final materials separation plan.
- (c) The siting analysis.
- (d) A record of the location and date of the public meetings.
- (e) Your responses to the public comments received during the public comment periods.

§ 60.1355 WHAT RECORDS MUST I KEEP FOR OPERATOR TRAINING AND CERTIFICATION?

You must keep records of six items:

- (a) *Records of provisional certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are provisionally certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

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(2) Dates of the initial provisional certifications.

(3) Documentation showing current provisional certifications.

(b) *Records of full certifications.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who are fully certified by the American Society of Mechanical Engineers or an equivalent State-approved certification program.

(2) Dates of initial and renewal full certifications.

(3) Documentation showing current full certifications.

(c) *Records showing completion of the operator training course.* Include three items:

(1) For your municipal waste combustion plant, names of the chief facility operator, shift supervisors, and control room operators who have completed the EPA or State municipal waste combustion operator training course.

(2) Dates of completion of the operator training course.

(3) Documentation showing completion of the operator training course.

(d) *Records of reviews for plant-specific operating manuals.* Include three items:

(1) Names of persons who have reviewed the operating manual.

(2) Date of the initial review.

(3) Dates of subsequent annual reviews.

(e) *Records of when a certified operator is temporarily offsite.* Include two main items:

(1) If the certified chief facility operator and certified shift supervisor are offsite for more than 12 hours, but for 2 weeks or less, and no other certified operator is onsite, record the dates that the certified chief facility operator and certified shift supervisor were offsite.

(2) When the certified chief facility operator and certified shift supervisor are offsite for more than 2 weeks and no other certified operator is onsite, keep records of four items:

(i) Your notice that all certified persons are offsite.

(ii) The conditions that cause those people to be offsite.

(iii) The corrective actions you are taking to ensure a certified chief facility operator or certified shift supervisor is onsite.

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(iv) Copies of the written reports submitted every 4 weeks that summarize the actions taken to ensure that a certified chief facility operator or certified shift supervisor will be onsite.

(f) *Records of calendar dates.* Include the calendar date on each record.

§ 60.1360 WHAT RECORDS MUST I KEEP FOR STACK TESTS?

For stack tests required under §60.1285, you must keep records of four items:

(a) The results of the stack tests for eight pollutants or parameters recorded in the appropriate units of measure specified in table 1 of this subpart:

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(b) Test reports including supporting calculations that document the results of all stack tests.

(c) The maximum demonstrated load of your municipal waste combustion units and maximum temperature at the inlet of your particulate matter control device during all stack tests for dioxins/furans emissions.

(d) The calendar date of each record.

§ 60.1365 WHAT RECORDS MUST I KEEP FOR CONTINUOUSLY MONITORED POLLUTANTS OR PARAMETERS?

You must keep records of eight items:

(a) *Records of monitoring data.* Document six parameters measured using continuous monitoring systems:

(1) All 6-minute average levels of opacity.

(2) All 1-hour average concentrations of sulfur dioxide emissions.

(3) For Class I municipal waste combustion units only, all 1-hour average concentrations of nitrogen oxides emissions.

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- (4) All 1-hour average concentrations of carbon monoxide emissions.
- (5) All 1-hour average load levels of your municipal waste combustion unit.
- (6) All 1-hour average flue gas temperatures at the inlet of the particulate matter control device.
- (b) *Records of average concentrations and percent reductions.* Document five parameters:
 - (1) All 24-hour daily block geometric average concentrations of sulfur dioxide emissions or average percent reductions of sulfur dioxide emissions.
 - (2) For Class I municipal waste combustion units only, all 24-hour daily arithmetic average concentrations of nitrogen oxides emissions.
 - (3) All 4-hour block or 24-hour daily block arithmetic average concentrations of carbon monoxide emissions.
 - (4) All 4-hour block arithmetic average load levels of your municipal waste combustion unit.
 - (5) All 4-hour block arithmetic average flue gas temperatures at the inlet of the particulate matter control device.
- (c) *Records of exceedances.* Document three items:
 - (1) Calendar dates whenever any of the five pollutant or parameter levels recorded in paragraph (b) of this section or the opacity level recorded in paragraph (a)(1) of this section did not meet the emission limits or operating levels specified in this subpart.
 - (2) Reasons you exceeded the applicable emission limits or operating levels.
 - (3) Corrective actions you took, or are taking, to meet the emission limits or operating levels.
- (d) *Records of minimum data.* Document three items:
 - (1) Calendar dates for which you did not collect the minimum amount of data required under §§60.1260 and 60.1335. Record the dates for five types of pollutants and parameters:
 - (i) Sulfur dioxide emissions.
 - (ii) For Class I municipal waste combustion units only, nitrogen oxides emissions.
 - (iii) Carbon monoxide emissions.
 - (iv) Load levels of your municipal waste combustion unit.
 - (v) Temperatures of the flue gases at the inlet of the particulate matter control device.
 - (2) Reasons you did not collect the minimum data.
 - (3) Corrective actions you took, or are taking, to obtain the required amount of data.

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(e) *Records of exclusions.* Document each time you have excluded data from your calculation of averages for any of the following five pollutants or parameters and the reasons the data were excluded:

- (1) Sulfur dioxide emissions.
- (2) For Class I municipal waste combustion units only, nitrogen oxides emissions.
- (3) Carbon monoxide emissions.
- (4) Load levels of your municipal waste combustion unit.
- (5) Temperatures of the flue gases at the inlet of the particulate matter control device.

(f) *Records of drift and accuracy.* Document the results of your daily drift tests and quarterly accuracy determinations according to Procedure 1 of appendix F of this part. Keep the records for the sulfur dioxide, nitrogen oxides (Class I municipal waste combustion units only), and carbon monoxide continuous emissions monitoring systems.

(g) *Records of the relationship between oxygen and carbon dioxide.* If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, document the relationship between oxygen and carbon dioxide, as specified in §60.1255.

(h) *Records of calendar dates.* Include the calendar date on each record.

§ 60.1370 WHAT RECORDS MUST I KEEP FOR MUNICIPAL WASTE COMBUSTION UNITS THAT USE ACTIVATED CARBON?

For municipal waste combustion units that use activated carbon to control dioxins/furans or mercury emissions, you must keep records of five items:

(a) *Records of average carbon feed rate.* Document five items:

- (1) Average carbon feed rate in kilograms (or pounds) per hour during all stack tests for dioxins/furans and mercury emissions. Include supporting calculations in the records.
- (2) For the operating parameter chosen to monitor carbon feed rate, average operating level during all stack tests for dioxins/furans and mercury emissions. Include supporting data that document the relationship between the operating parameter and the carbon feed rate.
- (3) All 8-hour block average carbon feed rates in kilograms (or pounds) per hour calculated from the monitored operating parameter.
- (4) Total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include supporting documentation.
- (5) Required quarterly usage of carbon for the municipal waste combustion plant, calculated using equation 4 or 5 in §60.1460(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion

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unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant. Include supporting calculations.

(b) *Records of low carbon feed rates.* Document three items:

(1) The calendar dates when the average carbon feed rate over an 8-hour block was less than the average carbon feed rates determined during the most recent stack test for dioxins/furans or mercury emissions (whichever has a higher feed rate).

(2) Reasons for the low carbon feed rates.

(3) Corrective actions you took or are taking to meet the 8-hour average carbon feed rate requirement.

(c) *Records of minimum carbon feed rate data.* Document three items:

(1) Calendar dates for which you did not collect the minimum amount of carbon feed rate data required under §60.1335.

(2) Reasons you did not collect the minimum data.

(3) Corrective actions you took or are taking to get the required amount of data.

(d) *Records of exclusions.* Document each time you have excluded data from your calculation of average carbon feed rates and the reasons the data were excluded.

(e) *Records of calendar dates.* Include the calendar date on each record.

REPORTING

§ 60.1375 WHAT REPORTS MUST I SUBMIT BEFORE I SUBMIT MY NOTICE OF CONSTRUCTION?

(a) If you are required to submit an application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, you must submit five items by the date you submit your application.

(1) Your draft materials separation plan, as specified in §60.1065.

(2) Your revised materials separation plan, as specified in §60.1085(c).

(3) Your notice of the initial public meeting for your draft materials separation plan, as specified in §60.1070(b).

(4) A transcript of the initial public meeting, as specified in §60.1080(f).

(5) The document that summarizes your responses to the public comments you received during the initial public comment period, as specified in §60.1085(a).

(b) If you are not required to submit an application for a construction permit under 40 CFR part 51, subpart I, or 40 CFR part 52, you must submit the items in paragraph (a) of this section with your notice of construction.

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§ 60.1380 WHAT MUST I INCLUDE IN MY NOTICE OF CONSTRUCTION?

(a) Include ten items:

- (1) A statement of your intent to construct the municipal waste combustion unit.
 - (2) The planned initial startup date of your municipal waste combustion unit.
 - (3) The types of fuels you plan to combust in your municipal waste combustion unit.
 - (4) The capacity of your municipal waste combustion unit including supporting capacity calculations, as specified in §60.1460(d) and (e).
 - (5) Your siting analysis, as specified in §60.1125.
 - (6) Your final materials separation plan, as specified in §60.1100(b).
 - (7) Your notice of the second public meeting (siting analysis meeting), as specified in §60.1130(b).
 - (8) A transcript of the second public meeting, as specified in §60.1140(d).
 - (9) A copy of the document that summarizes your responses to the public comments you received during the second public comment period, as specified in §60.1145(a).
 - (10) Your final siting analysis, as specified in §60.1145(c).
- (b) Submit your notice of construction no later than 30 days after you commence construction, reconstruction, or modification of your municipal waste combustion unit.

§ 60.1385 WHAT REPORTS MUST I SUBMIT AFTER I SUBMIT MY NOTICE OF CONSTRUCTION AND IN WHAT FORM?

- (a) Submit an initial report and annual reports, plus semiannual reports for any emission or parameter level that does not meet the limits specified in this subpart.
- (b) Submit all reports on paper, postmarked on or before the submittal dates in §§60.1395, 60.1405, and 60.1420. If the Administrator agrees, you may submit electronic reports.
- (c) Keep a copy of all reports required by §§60.1400, 60.1410, and 60.1425 onsite for 5 years.

§ 60.1390 WHAT ARE THE APPROPRIATE UNITS OF MEASUREMENT FOR REPORTING MY DATA?

See tables 1 and 2 of this subpart for appropriate units of measurement.

§ 60.1395 WHEN MUST I SUBMIT THE INITIAL REPORT?

As specified in §60.7(c), submit your initial report within 60 days after your municipal waste combustion unit reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup.

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§ 60.1400 WHAT MUST I INCLUDE IN MY INITIAL REPORT?

You must include seven items:

(a) The emission levels measured on the date of the initial evaluation of your continuous emission monitoring systems for all of the following five pollutants or parameters as recorded in accordance with §60.1365(b).

(1) The 24-hour daily geometric average concentration of sulfur dioxide emissions or the 24-hour daily geometric percent reduction of sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, the 24-hour daily arithmetic average concentration of nitrogen oxides emissions.

(3) The 4-hour block or 24-hour daily arithmetic average concentration of carbon monoxide emissions.

(4) The 4-hour block arithmetic average load level of your municipal waste combustion unit.

(5) The 4-hour block arithmetic average flue gas temperature at the inlet of the particulate matter control device.

(b) The results of the initial stack tests for eight pollutants or parameters (use appropriate units as specified in table 2 of this subpart):

(1) Dioxins/furans.

(2) Cadmium.

(3) Lead.

(4) Mercury.

(5) Opacity.

(6) Particulate matter.

(7) Hydrogen chloride.

(8) Fugitive ash.

(c) The test report that documents the initial stack tests including supporting calculations.

(d) The initial performance evaluation of your continuous emissions monitoring systems. Use the applicable performance specifications in appendix B of this part in conducting the evaluation.

(e) The maximum demonstrated load of your municipal waste combustion unit and the maximum demonstrated temperature of the flue gases at the inlet of the particulate matter control device. Use values established during your initial stack test for dioxins/furans emissions and include supporting calculations.

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(f) If your municipal waste combustion unit uses activated carbon to control dioxins/furans or mercury emissions, the average carbon feed rates that you recorded during the initial stack tests for dioxins/furans and mercury emissions. Include supporting calculations as specified in §60.1370(a)(1) and (2).

(g) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in §60.1255.

§ 60.1405 WHEN MUST I SUBMIT THE ANNUAL REPORT?

Submit the annual report no later than February 1 of each year that follows the calendar year in which you collected the data. If you have an operating permit for any unit under title V of the Clean Air Act (CAA), the permit may require you to submit semiannual reports. Parts 70 and 71 of this chapter contain program requirements for permits.

§ 60.1410 WHAT MUST I INCLUDE IN MY ANNUAL REPORT?

Summarize data collected for all pollutants and parameters regulated under this subpart. Your summary must include twelve items:

(a) The results of the annual stack test, using appropriate units, for eight pollutants, as recorded under §60.1360(a):

- (1) Dioxins/furans.
- (2) Cadmium.
- (3) Lead.
- (4) Mercury.
- (5) Particulate matter.
- (6) Opacity.
- (7) Hydrogen chloride.
- (8) Fugitive ash.

(b) A list of the highest average levels recorded, in the appropriate units. List the values for five pollutants or parameters:

- (1) Sulfur dioxide emissions.
- (2) For Class I municipal waste combustion units only, nitrogen oxides emissions.
- (3) Carbon monoxide emissions.
- (4) Load level of the municipal waste combustion unit.

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(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device (4-hour block average).

(c) The highest 6-minute opacity level measured. Base the value on all 6-minute average opacity levels recorded by your continuous opacity monitoring system (§60.1365(a)(1)).

(d) For municipal waste combustion units that use activated carbon for controlling dioxins/furans or mercury emissions, include four records:

(1) The average carbon feed rates recorded during the most recent dioxins/furans and mercury stack tests.

(2) The lowest 8-hour block average carbon feed rate recorded during the year.

(3) The total carbon purchased and delivered to the municipal waste combustion plant for each calendar quarter. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant.

(4) The required quarterly carbon usage of your municipal waste combustion plant calculated using equation 4 or 5 in §60.1460(f). If you choose to evaluate required quarterly usage for carbon on a municipal waste combustion unit basis, record the required quarterly usage for each municipal waste combustion unit at your plant.

(e) The total number of days that you did not obtain the minimum number of hours of data for six pollutants or parameters. Include the reasons you did not obtain the data and corrective actions that you have taken to obtain the data in the future. Include data on:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

(5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.

(6) Carbon feed rate.

(f) The number of hours you have excluded data from the calculation of average levels (include the reasons for excluding it). Include data for six pollutants or parameters:

(1) Sulfur dioxide emissions.

(2) For Class I municipal waste combustion units only, nitrogen oxides emissions.

(3) Carbon monoxide emissions.

(4) Load level of the municipal waste combustion unit.

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- (5) Temperature of the flue gases at the inlet of the particulate matter air pollution control device.
- (6) Carbon feed rate.
- (g) A notice of your intent to begin a reduced stack testing schedule for dioxins/furans emissions during the following calendar year, if you are eligible for alternative scheduling (§60.1305(a) or (b)).
- (h) A notice of your intent to begin a reduced stack testing schedule for other pollutants during the following calendar year if you are eligible for alternative scheduling (§60.1305(a)).
- (i) A summary of any emission or parameter level that did not meet the limits specified in this subpart.
- (j) A summary of the data in paragraphs (a) through (d) of this section from the year preceding the reporting year which gives the Administrator a summary of the performance of the municipal waste combustion unit over a 2-year period.
- (k) If you choose to monitor carbon dioxide instead of oxygen as a diluent gas, documentation of the relationship between oxygen and carbon dioxide, as specified in §60.1255.
- (l) Documentation of periods when all certified chief facility operators and certified shift supervisors are offsite for more than 12 hours.

§ 60.1415 WHAT MUST I DO IF I AM OUT OF COMPLIANCE WITH THE REQUIREMENTS OF THIS SUBPART?

You must submit a semiannual report on any recorded emission or parameter level that does not meet the requirements specified in this subpart.

§ 60.1420 IF A SEMIANNUAL REPORT IS REQUIRED, WHEN MUST I SUBMIT IT?

- (a) For data collected during the first half of a calendar year, submit your semiannual report by August 1 of that year.
- (b) For data you collected during the second half of the calendar year, submit your semiannual report by February 1 of the following year.

§ 60.1425 WHAT MUST I INCLUDE IN THE SEMIANNUAL OUT-OF-COMPLIANCE REPORTS?

You must include three items in the semiannual report:

- (a) For any of the following six pollutants or parameters that exceeded the limits specified in this subpart, include the calendar date they exceeded the limits, the averaged and recorded data for that date, the reasons for exceeding the limits, and your corrective actions:
 - (1) Concentration or percent reduction of sulfur dioxide emissions.
 - (2) For Class I municipal waste combustion units only, concentration of nitrogen oxides emissions.
 - (3) Concentration of carbon monoxide emissions.

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- (4) Load level of your municipal waste combustion unit.
- (5) Temperature of the flue gases at the inlet of your particulate matter air pollution control device.
- (6) Average 6-minute opacity level. The data obtained from your continuous opacity monitoring system are not used to determine compliance with the limit on opacity emissions.
 - (b) If the results of your annual stack tests (as recorded in §60.1360(a)) show emissions above the limits specified in table 1 of this subpart for dioxins/furans, cadmium, lead, mercury, particulate matter, opacity, hydrogen chloride, and fugitive ash, include a copy of the test report that documents the emission levels and your corrective actions.
 - (c) For municipal waste combustion units that apply activated carbon to control dioxins/furans or mercury emissions, include two items:
 - (1) Documentation of all dates when the 8-hour block average carbon feed rate (calculated from the carbon injection system operating parameter) is less than the highest carbon feed rate established during the most recent mercury and dioxins/furans stack test (as specified in §60.1370(a)(1)). Include four items:
 - (i) Eight-hour average carbon feed rate.
 - (ii) Reasons for occurrences of low carbon feed rates.
 - (iii) The corrective actions you have taken to meet the carbon feed rate requirement.
 - (iv) The calendar date.
 - (2) Documentation of each quarter when total carbon purchased and delivered to the municipal waste combustion plant is less than the total required quarterly usage of carbon. If you choose to evaluate total carbon purchased and delivered on a municipal waste combustion unit basis, record the total carbon purchased and delivered for each individual municipal waste combustion unit at your plant. Include five items:
 - (i) Amount of carbon purchased and delivered to the plant.
 - (ii) Required quarterly usage of carbon.
 - (iii) Reasons for not meeting the required quarterly usage of carbon.
 - (iv) The corrective actions you have taken to meet the required quarterly usage of carbon.
 - (v) The calendar date.

§ 60.1430 CAN REPORTING DATES BE CHANGED?

- (a) If the Administrator agrees, you may change the semiannual or annual reporting dates.
- (b) See §60.19(c) for procedures to seek approval to change your reporting date.

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AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE

§ 60.1435 WHAT IS AN AIR CURTAIN INCINERATOR?

An air curtain incinerator operates by forcefully projecting a curtain of air across an open chamber or open pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

§ 60.1440 WHAT IS YARD WASTE?

Yard waste is grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

- (a) Construction, renovation, and demolition wastes that are exempt from the definition of "municipal solid waste" in §60.1465.
- (b) Clean wood that is exempt from the definition of "municipal solid waste" in §60.1465.

§ 60.1445 WHAT ARE THE EMISSION LIMITS FOR AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE?

If your air curtain incinerator combusts 100 percent yard waste, you must meet only the emission limits in this section.

- (a) Within 60 days after your air curtain incinerator reaches the maximum load level at which it will operate, but no later than 180 days after its initial startup, you must meet two limits:
 - (1) The opacity limit is 10 percent (6-minute average) for air curtain incinerators that can combust at least 35 tons per day of municipal solid waste and no more than 250 tons per day of municipal solid waste.
 - (2) The opacity limit is 35 percent (6-minute average) during the startup period that is within the first 30 minutes of operation.
- (b) Except during malfunctions, the requirements of this subpart apply at all times. Each malfunction must not exceed 3 hours.

§ 60.1450 HOW MUST I MONITOR OPACITY FOR AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE?

- (a) Use EPA Reference Method 9 in appendix A of this part to determine compliance with the opacity limit.
- (b) Conduct an initial test for opacity as specified in §60.8.
- (c) After the initial test for opacity, conduct annual tests no more than 13 calendar months following the date of your previous test.

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§ 60.1455 WHAT ARE THE RECORDKEEPING AND REPORTING REQUIREMENTS FOR AIR CURTAIN INCINERATORS THAT BURN 100 PERCENT YARD WASTE?

- (a) Provide a notice of construction that includes four items:
 - (1) Your intent to construct the air curtain incinerator.
 - (2) Your planned initial startup date.
 - (3) Types of fuels you plan to combust in your air curtain incinerator.
 - (4) The capacity of your incinerator, including supporting capacity calculations, as specified in §60.1460(d) and (e).
- (b) Keep records of results of all opacity tests onsite in either paper copy or electronic format unless the Administrator approves another format.
- (c) Keep all records for each incinerator for at least 5 years.
- (d) Make all records available for submittal to the Administrator or for onsite review by an inspector.
- (e) Submit the results (each 6-minute average) of the opacity tests by February 1 of the year following the year of the opacity emission test.
- (f) Submit reports as a paper copy on or before the applicable submittal date. If the Administrator agrees, you may submit reports on electronic media.
- (g) If the Administrator agrees, you may change the annual reporting dates (see §60.19(c)).
- (h) Keep a copy of all reports onsite for a period of 5 years.

EQUATIONS

§ 60.1460 WHAT EQUATIONS MUST I USE?

- (a) *Concentration correction to 7 percent oxygen.* Correct any pollutant concentration to 7 percent oxygen using equation 1 of this section:

$$C_{7\%} = C_{unc} * (13.9) * (1/(20.9 - CO_2)) \text{ (Eq. 1)}$$

Where:

$C_{7\%}$ = concentration corrected to 7 percent oxygen.

C_{unc} = uncorrected pollutant concentration.

CO_2 = concentration of oxygen (percent).

- (b) *Percent reduction in potential mercury emissions.* Calculate the percent reduction in potential mercury emissions (% P_{Hg}) using equation 2 of this section:

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$$\%P_{Hg} = (E_i - E_o) * (100/E_i) \text{ (Eq. 2)}$$

Where:

$\%P_{Hg}$ = percent reduction of potential mercury emissions

E_i = mercury emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = mercury emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(c) *Percent reduction in potential hydrogen chloride emissions.* Calculate the percent reduction in potential hydrogen chloride emissions ($\%P_{HCl}$) using equation 3 of this section:

$$\%P_{HCl} = (E_i - E_o) * (100/E_i) \text{ (Eq. 3)}$$

Where:

$\%P_{HCl}$ = percent reduction of the potential hydrogen chloride emissions

E_i = hydrogen chloride emission concentration as measured at the air pollution control device inlet, corrected to 7 percent oxygen, dry basis

E_o = hydrogen chloride emission concentration as measured at the air pollution control device outlet, corrected to 7 percent oxygen, dry basis

(d) *Capacity of a municipal waste combustion unit.* For a municipal waste combustion unit that can operate continuously for 24-hour periods, calculate the municipal waste combustion unit capacity based on 24 hours of operation at the maximum charge rate. To determine the maximum charge rate, use one of two methods:

(1) For municipal waste combustion units with a design based on heat input capacity, calculate the maximum charging rate based on the maximum heat input capacity and one of two heating values:

(i) If your municipal waste combustion unit combusts refuse-derived fuel, use a heating value of 12,800 kilojoules per kilogram (5,500 British thermal units per pound).

(ii) If your municipal waste combustion unit combusts municipal solid waste, use a heating value of 10,500 kilojoules per kilogram (4,500 British thermal units per pound).

(2) For municipal waste combustion units with a design not based on heat input capacity, use the maximum designed charging rate.

(e) *Capacity of a batch municipal waste combustion unit.* Calculate the capacity of a batch municipal waste combustion unit as the maximum design amount of municipal solid waste they can charge per batch multiplied by the maximum number of batches they can process in 24 hours. Calculate the maximum number of batches by dividing 24 by the number of hours needed to process one batch. Retain fractional batches in the calculation. For example, if one batch requires 16 hours, the municipal waste combustion unit can combust 24/16, or 1.5 batches, in 24 hours.

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(f) *Quarterly carbon usage.* If you use activated carbon to comply with the dioxins/furans or mercury limits, calculate the required quarterly usage of carbon using equation 4 of this section for plant basis or equation 5 of this section for unit basis:

(1) Plant basis.

$$C = \sum_{i=1}^n f_i * h_i \quad (\text{Eq. 4})$$

Where:

C = required quarterly carbon usage for the plant in kilograms (or pounds).

f_i = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h_i = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

n = number of municipal waste combustion units, i, located at your plant.

(2) Unit basis.

$$C = f * h \quad (\text{Eq. 5})$$

Where:

C = required quarterly carbon usage for the unit in kilograms (or pounds).

f = required carbon feed rate for the municipal waste combustion unit in kilograms (or pounds) per hour. That is the average carbon feed rate during the most recent mercury or dioxins/furans stack tests (whichever has a higher feed rate).

h = number of hours the municipal waste combustion unit was in operation during the calendar quarter (hours).

DEFINITIONS

§ 60.1465 WHAT DEFINITIONS MUST I KNOW?

Terms used but not defined in this section are defined in the CAA and in subparts A and B of this part.

Administrator means the Administrator of the U.S. Environmental Protection Agency or his/her authorized representative or the Administrator of a State Air Pollution Control Agency.

Air curtain incinerator means an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of that type can be constructed above or below ground and with or without refractory walls and floor.

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Batch municipal waste combustion unit means a municipal waste combustion unit designed so it cannot combust municipal solid waste continuously 24 hours per day because the design does not allow waste to be fed to the unit or ash to be removed during combustion.

Calendar quarter means three consecutive months (nonoverlapping) beginning on: January 1, April 1, July 1, or October 1.

Calendar year means 365 (or 366 consecutive days for leap years) consecutive days starting on January 1 and ending on December 31.

Chief facility operator means the person in direct charge and control of the operation of a municipal waste combustion unit. That person is responsible for daily onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit.

Class I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity greater than 250 tons per day of municipal solid waste. See the definition in this section of "municipal waste combustion plant capacity" for specification of which units at a plant site are included in the aggregate capacity calculation.

Class II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity less than or equal to 250 tons per day of municipal solid waste. See the definition in this section of "municipal waste combustion plant capacity" for specification of which units at a plant site are included in the aggregate capacity calculation.

Clean wood means untreated wood or untreated wood products including clean untreated lumber, tree stumps (whole or chipped), and tree limbs (whole or chipped). Clean wood does not include two items:

- (1) "Yard waste," which is defined elsewhere in this section.
- (2) Construction, renovation, or demolition wastes (for example, railroad ties and telephone poles) that are exempt from the definition of "municipal solid waste" in this section.

Co-fired combustion unit means a unit that combusts municipal solid waste with nonmunicipal solid waste fuel (for example, coal, industrial process waste). To be considered a co-fired combustion unit, the unit must be subject to a federally enforceable permit that limits it to combusting a fuel feed stream which is 30 percent or less (by weight) municipal solid waste as measured each calendar quarter.

Continuous burning means the continuous, semicontinuous, or batch feeding of municipal solid waste to dispose of the waste, produce energy, or provide heat to the combustion system in preparation for waste disposal or energy production. Continuous burning does not mean the use of municipal solid waste solely to thermally protect the grate or hearth during the startup period when municipal solid waste is not fed to the grate or hearth.

Continuous emission monitoring system means a monitoring system that continuously measures the emissions of a pollutant from a municipal waste combustion unit.

Dioxins/furans mean tetra- through octachlorinated dibenzo-p-dioxins and dibenzofurans.

Eight-hour block average means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of three 8-hour periods of time:

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(1) 12:00 midnight to 8:00 a.m.

(2) 8:00 a.m. to 4:00 p.m.

(3) 4:00 p.m. to 12:00 midnight.

Federally enforceable means all limits and conditions the Administrator can enforce (including the requirements of 40 CFR parts 60, 61, and 63), requirements in a State's implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

First calendar half means the period that starts on January 1 and ends on June 30 in any year.

Fluidized bed combustion unit means a unit where municipal waste is combusted in a fluidized bed of material. The fluidized bed material may remain in the primary combustion zone or may be carried out of the primary combustion zone and returned through a recirculation loop.

Four-hour block average or *4-hour block average* means the average of all hourly emission concentrations or parameter levels when the municipal waste combustion unit operates and combusts municipal solid waste measured over any of six 4-hour periods:

(1) 12:00 midnight to 4:00 a.m.

(2) 4:00 a.m. to 8:00 a.m.

(3) 8:00 a.m. to 12:00 noon.

(4) 12:00 noon to 4:00 p.m.

(5) 4:00 p.m. to 8:00 p.m.

(6) 8:00 p.m. to 12:00 midnight.

Mass burn refractory municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a refractory wall furnace. Unless otherwise specified, that includes municipal waste combustion units with a cylindrical rotary refractory wall furnace.

Mass burn rotary waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a cylindrical rotary waterwall furnace.

Mass burn waterwall municipal waste combustion unit means a field-erected municipal waste combustion unit that combusts municipal solid waste in a waterwall furnace.

Materials separation plan means a plan that identifies a goal and an approach for separating certain components of municipal solid waste for a given service area in order to make the separated materials available for recycling. A materials separation plan may include three items:

(1) Elements such as drop-off facilities, buy-back or deposit-return incentives, curbside pickup programs, or centralized mechanical separation systems.

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(2) Different goals or approaches for different subareas in the service area.

(3) No materials separation activities for certain subareas or, if warranted, the entire service area.

Maximum demonstrated load of a municipal waste combustion unit means the highest 4-hour block arithmetic average municipal waste combustion unit load achieved during 4 consecutive hours in the course of the most recent dioxins/furans stack test that demonstrates compliance with the applicable emission limit for dioxins/furans specified in this subpart.

Maximum demonstrated temperature of the particulate matter control device means the highest 4-hour block arithmetic average flue gas temperature measured at the inlet of the particulate matter control device during 4 consecutive hours in the course of the most recent stack test for dioxins/furans emissions that demonstrates compliance with the limits specified in this subpart.

Medical/infectious waste means any waste meeting the definition of "medical/infectious waste" in §60.51c of subpart E, of this part.

Mixed fuel-fired (pulverized coal/refuse-derived fuel) combustion unit means a combustion unit that combusts coal and refuse-derived fuel simultaneously, in which pulverized coal is introduced into an air stream that carries the coal to the combustion chamber of the unit where it is combusted in suspension. That includes both conventional pulverized coal and micropulverized coal.

Modification or modified municipal waste combustion unit means a municipal waste combustion unit you have changed after June 6, 2001 and that meets one of two criteria:

(1) The cumulative cost of the changes over the life of the unit exceeds 50 percent of the original cost of building and installing the unit (not including the cost of land) updated to current costs.

(2) Any physical change in the municipal waste combustion unit or change in the method of operating it that increases the emission level of any air pollutant for which new source performance standards have been established under section 129 or section 111 of the CAA. Increases in the emission level of any air pollutant are determined when the municipal waste combustion unit operates at 100 percent of its physical load capability and are measured downstream of all air pollution control devices. Load restrictions based on permits or other nonphysical operational restrictions cannot be considered in the determination.

Modular excess-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers, all of which are designed to operate at conditions with combustion air amounts in excess of theoretical air requirements.

Modular starved-air municipal waste combustion unit means a municipal waste combustion unit that combusts municipal solid waste, is not field-erected, and has multiple combustion chambers in which the primary combustion chamber is designed to operate at substoichiometric conditions.

Municipal solid waste or municipal-type solid waste means household, commercial/retail, or institutional waste. Household waste includes material discarded by residential dwellings, hotels, motels, and other similar permanent or temporary housing. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, nonmanufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes materials discarded by schools, by hospitals (nonmedical), by nonmanufacturing activities at prisons and government facilities, and other similar establishments or facilities. Household, commercial/retail, and institutional waste does include yard waste and refuse-derived fuel.

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Household, commercial/retail, and institutional waste does not include used oil; sewage sludge; wood pallets; construction, renovation, and demolition wastes (which include railroad ties and telephone poles); clean wood; industrial process or manufacturing wastes; medical waste; or motor vehicles (including motor vehicle parts or vehicle fluff).

Municipal waste combustion plant means one or more municipal waste combustion units at the same location as specified under Applicability (§60.1015(a) and (b)).

Municipal waste combustion plant capacity means the aggregate municipal waste combustion capacity of all municipal waste combustion units at the plant that are subject to subparts Ea or Eb of this part, or this subpart.

Municipal waste combustion unit means any setting or equipment that combusts solid, liquid, or gasified municipal solid waste including, but not limited to, field-erected combustion units (with or without heat recovery), modular combustion units (starved-air or excess-air), boilers (for example, steam generating units), furnaces (whether suspension-fired, grate-fired, mass-fired, air curtain incinerators, or fluidized bed-fired), and pyrolysis/combustion units. Two criteria further define municipal waste combustion units:

(1) Municipal waste combustion units do not include pyrolysis or combustion units located at a plastics or rubber recycling unit as specified under Applicability (§60.1020(h) and (i)). Municipal waste combustion units also do not include cement kilns that combust municipal solid waste as specified under Applicability (§60.1020(j)). Municipal waste combustion units also do not include internal combustion engines, gas turbines, or other combustion devices that combust landfill gases collected by landfill gas collection systems.

(2) The boundaries of a municipal waste combustion unit are defined as follows. The municipal waste combustion unit includes, but is not limited to, the municipal solid waste fuel feed system, grate system, flue gas system, bottom ash system, and the combustion unit water system. The municipal waste combustion unit does not include air pollution control equipment, the stack, water treatment equipment, or the turbine-generator set. The municipal waste combustion unit boundary starts at the municipal solid waste pit or hopper and extends through three areas:

(i) The combustion unit flue gas system, which ends immediately after the heat recovery equipment or, if there is no heat recovery equipment, immediately after the combustion chamber.

(ii) The combustion unit bottom ash system, which ends at the truck loading station or similar equipment that transfers the ash to final disposal. It includes all ash handling systems connected to the bottom ash handling system.

(iii) The combustion unit water system, which starts at the feed water pump and ends at the piping that exits the steam drum or superheater.

Particulate matter means total particulate matter emitted from municipal waste combustion units as measured using EPA Reference Method 5 in appendix A of this part and the procedures specified in §60.1300.

Plastics or rubber recycling unit means an integrated processing unit for which plastics, rubber, or rubber tires are the only feed materials (incidental contaminants may be in the feed materials). The feed materials are processed and marketed to become input feed stock for chemical plants or petroleum refineries. The following three criteria further define a plastics or rubber recycling unit:

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(1) Each calendar quarter, the combined weight of the feed stock that a plastics or rubber recycling unit produces must be more than 70 percent of the combined weight of the plastics, rubber, and rubber tires that recycling unit processes.

(2) The plastics, rubber, or rubber tires fed to the recycling unit may originate from separating or diverting plastics, rubber, or rubber tires from municipal or industrial solid waste. The feed materials may include manufacturing scraps, trimmings, and off-specification plastics, rubber, and rubber tire discards.

(3) The plastics, rubber, and rubber tires fed to the recycling unit may contain incidental contaminants (for example, paper labels on plastic bottles or metal rings on plastic bottle caps).

Potential hydrogen chloride emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Potential mercury emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without controls for mercury emissions.

Potential sulfur dioxide emissions means the level of emissions from a municipal waste combustion unit that would occur from combusting municipal solid waste without emission controls for acid gases.

Pyrolysis/combustion unit means a unit that produces gases, liquids, or solids by heating municipal solid waste. The gases, liquids, or solids produced are combusted and the emissions vented to the atmosphere.

Reconstruction means rebuilding a municipal waste combustion unit and meeting two criteria:

(1) The reconstruction begins after June 6, 2001.

(2) The cumulative cost of the construction over the life of the unit exceeds 50 percent of the original cost of building and installing the municipal waste combustion unit (not including land) updated to current costs (current dollars). To determine what systems are within the boundary of the municipal waste combustion unit used to calculate those costs, see the definition in this section of "municipal waste combustion unit."

Refractory unit or *refractory wall furnace* means a municipal waste combustion unit that has no energy recovery (such as through a waterwall) in the furnace of the municipal waste combustion unit.

Refuse-derived fuel means a type of municipal solid waste produced by processing municipal solid waste through shredding and size classification. That includes all classes of refuse-derived fuel including two fuels:

(1) Low-density fluff refuse-derived fuel through densified refuse-derived fuel.

(2) Pelletized refuse-derived fuel.

Same location means the same or contiguous properties under common ownership or control, including those separated only by a street, road, highway, or other public right-of-way. Common ownership or control includes properties that are owned, leased, or operated by the same entity, parent entity, subsidiary, subdivision, or any combination thereof. Entities may include a municipality, other governmental unit, or any quasi-governmental authority (for example, a public utility district or regional authority for waste disposal).

Second calendar half means the period that starts on July 1 and ends on December 31 in any year.

SECTION 4. APPENDIX AAAA

NSPS SUBPART AAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

Shift supervisor means the person who is in direct charge and control of operating a municipal waste combustion unit and who is responsible for onsite supervision, technical direction, management, and overall performance of the municipal waste combustion unit during an assigned shift.

Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel) combustion unit means a municipal waste combustion unit that combusts coal and refuse-derived fuel simultaneously, in which coal 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.

Standard conditions when referring to units of measure mean a temperature of 20 °C and a pressure of 101.3 kilopascals.

Startup period means the period when a municipal waste combustion unit begins the continuous combustion of municipal solid waste. It does not include any warm-up period during which the municipal waste combustion unit combusts fossil fuel or other solid waste fuel but receives no municipal solid waste.

Stoker (refuse-derived fuel) combustion unit means a steam generating unit that combusts refuse-derived fuel in a semisuspension combusting mode, using air-fed distributors.

Total mass dioxins/furans or total mass means the total mass of tetra-through octachlorinated dibenzo-p-dioxins and dibenzofurans as determined using EPA Reference Method 23 in appendix A of this part and the procedures specified in §60.1300.

Twenty-four hour daily average or 24-hour daily average means either the arithmetic mean or geometric mean (as specified) of all hourly emission concentrations when the municipal waste combustion unit operates and combusts municipal solid waste measured during the 24 hours between 12:00 midnight and the following midnight.

Untreated lumber means wood or wood products that have been cut or shaped and include wet, air-dried, and kiln-dried wood products. Untreated lumber does not include wood products that have been painted, pigment-stained, or pressure-treated by compounds such as chromate copper arsenate, pentachlorophenol, and creosote.

Waterwall furnace means a municipal waste combustion unit that has energy (heat) recovery in the furnace (for example, radiant heat transfer section) of the combustion unit.

Yard waste means grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs. They come from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands. Yard waste does not include two items:

(1) Construction, renovation, and demolition wastes that are exempt from the definition of "municipal solid waste" in this section.

(2) Clean wood that is exempt from the definition of "municipal solid waste" in this section.

SECTION 4. APPENDIX AAAA

NSPS SUBPART AAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

TABLE 1 TO SUBPART AAAA OF PART 60—EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS

For the following pollutants	You must meet the following emission limits^a	Using the following averaging times	And determine compliance by the following methods
1. Organics			
Dioxins/Furans (total mass basis)	13 nanograms per dry standard cubic meter	3-run average (minimum run duration is 4 hours)	Stack test.
2. Metals:			
Cadmium	0.020 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test.
Lead	0.20 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test.
Mercury	0.080 milligrams per dry standard cubic meter or 85 percent reduction of potential mercury emissions	3-run average (run duration specified in test method)	Stack test.
Opacity	10 percent	Thirty 6-minute averages	Stack test.
Particulate Matter	24 milligrams per dry standard cubic meter	3-run average (run duration specified in test method)	Stack test.
3. Acid Gases:			
Hydrogen Chloride	25 parts per million by dry volume or 95 percent reduction of potential hydrogen chloride emissions	3-run average (minimum run duration is 1 hour)	Stack test
Nitrogen Oxides (Class I units) ^b	150 (180 for 1st year of operation) parts per million by dry volume	24-hour daily block arithmetic average concentration	Continuous emission monitoring system.
Nitrogen Oxides (Class II units) ^c	500 parts per million by dry volume	See footnote ^d	See footnote ^d
Sulfur Dioxide	30 parts per million by dry volume or 80 percent reduction of potential sulfur dioxide emissions	24-hour daily block geometric average concentration or percent reduction	Continuous monitoring emission system.
4. Other:			
Fugitive Ash	Visible emissions for no more than 5 percent of hourly observation period	Three 1-hour observation periods	Visible emission test.

^aAll emission limits (except for opacity) are measured at 7 percent oxygen.

^bClass I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See §60.1465 for definitions.

^cClass II units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity no more than 250 tons per day of municipal solid waste. See §60.1465 for definitions.

^dNo monitoring, testing, recordkeeping, or reporting is required to demonstrate compliance with the nitrogen oxides limit for Class II units.

SECTION 4. APPENDIX AAAA

NSPS SUBPART AAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

TABLE 2 TO SUBPART AAAA OF PART 60—CARBON MONOXIDE EMISSION LIMITS FOR NEW SMALL MUNICIPAL WASTE COMBUSTION UNITS

For the following municipal waste combustion units	You must meet the following carbon monoxide limits^a	Using the following averaging times^b
1. Fluidized-bed	100 parts per million by dry volume	4-hour.
2. Fluidized bed, mixed fuel, (wood/refuse-derived fuel)	200 parts per million by dry volume	24-hour. ^c
3. Mass burn rotary refractory	100 parts per million by dry volume	4-hour.
4. Mass burn rotary waterwall	100 parts per million by dry volume	24-hour.
5. Mass burn waterwall and refractory	100 parts per million by dry volume	4-hour.
6. Mixed fuel-fired (pulverized coal/refuse-derived fuel)	150 parts per million by dry volume	4-hour.
7. Modular starved-air and excess air	50 parts per million by dry volume	4-hour.
8. Spreader stoker, mixed fuel-fired (coal/refuse-derived fuel)	150 parts per million by dry volume	24-hour daily.
9. Stoker, refuse-derived fuel	150 parts per million by dry volume	24-hour daily.

^aAll limits (except for opacity) are measured at 7 percent oxygen. Compliance is determined by continuous emission monitoring systems.

^bBlock averages, arithmetic mean. See §60.1465 for definitions.

^c24-hour block average, geometric mean. See §60.1465 for definitions.

TABLE 3 OF SUBPART AAAA TO PART 60—REQUIREMENTS FOR VALIDATING CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following continuous emission monitoring systems	Use the following methods in appendix A of this part to validate pollutant concentration levels	Use the following methods in appendix A of this part to measure oxygen (or carbon dioxide)
1. Nitrogen Oxides (Class I units only) ^a	Method 7, 7A, 7B, 7C, 7D, or 7E	Method 3 or 3A.
2. Sulfur Dioxide	Method 6 or 6C	Method 3 or 3A.
3. Carbon Monoxide	Method 10, 10A, or 10B	Method 3 or 3A.

^aClass I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See §60.1465 for definitions.

SECTION 4. APPENDIX AAAA

NSPS SUBPART AAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

TABLE 4 OF SUBPART AAAA TO PART 60—REQUIREMENTS FOR CONTINUOUS EMISSION MONITORING SYSTEMS (CEMS)

For the following pollutants	Use the following span values for your CEMS	Use the following performance specifications in appendix B of this part for your CEMS	If needed to meet minimum data requirements, use the following alternate methods in appendix A of this part to collect data
1. Opacity	100 percent opacity	P.S. 1	Method 9.
2. Nitrogen Oxides (Class I units only) ^a	Control device outlet: 125 percent of the maximum expected hourly potential nitrogen oxides emissions of the municipal waste combustion unit	P.S. 2	Method 7E.
3. Sulfur Dioxide	Inlet to control device: 125 percent of the maximum expected sulfur dioxide emissions of the municipal waste combustion unit. Control device outlet: 50 percent of the maximum expected hourly potential sulfur dioxide emissions of the municipal waste combustion unit	P.S. 2	Method 6C.
4. Carbon Monoxide	125 percent of the maximum expected hourly potential carbon with monoxide emissions of the municipal waste combustion unit	P.S. 4A	Method 10 alternative interference trap.
5. Oxygen or Carbon Dioxide	25 percent oxygen or 25 percent carbon dioxide	P.S. 3	Method 3A or 3B.

^aClass I units mean small municipal waste combustion units subject to this subpart that are located at municipal waste combustion plants with an aggregate plant combustion capacity more than 250 tons per day of municipal solid waste. See §60.1465 for definitions.

SECTION 4. APPENDIX AAAA

NSPS SUBPART AAAA – STANDARDS OF PERFORMANCE FOR SMALL MUNICIPAL WASTE COMBUSTORS

TABLE 5 OF SUBPART AAAA TO PART 60—REQUIREMENTS FOR STACK TESTS

To measure the following pollutants	Use the following methods in appendix A of this part to determine the sampling location	Use the methods in appendix A of this part to measure pollutant concentration	Also note the following additional information
1. Organics:			
Dioxins/Furans	Method 1	Method 23 ^a	The minimum sampling time must be 4 hours per test run while the municipal waste combustion unit is operating at full load.
2. Metals:			
Cadmium	Method 1	Method 29 ^a	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Lead	Method 1	Method 29 ^a	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Mercury	Method 1	Method 29 ^a	Compliance testing must be performed while the municipal waste combustion unit is operating at full load.
Opacity	Method 9	Method 9	Use Method 9 to determine compliance with opacity limit. 3-hour observation period (thirty 6-minute averages).
Particulate Matter	Method 1	Method 5 ^a	The minimum sample Matter volume must be 1.0 cubic meters. The probe and filter holder heating systems in the sample train must be set to provide a gas temperature no greater than 160 ±14°C. The minimum sampling time is 1 hour.
3. Acid Gases: ^b			
Hydrogen Chloride	Method 1	Method 26 or 26A ^a	Test runs must be at least 1 hour long while the municipal waste combustion unit is operating at full load.
4. Other: ^b			
Fugitive Ash	Not applicable	Method 22 (visible emissions)	The three 1-hour observation period must include periods when the facility transfers fugitive ash from the municipal waste combustion unit to the area where the fugitive ash is stored or loaded into containers or trucks.

^aMust simultaneously measure oxygen (or carbon dioxide) using Method 3A or 3B in appendix A of this part.

^bUse CEMS to test sulfur dioxide, nitrogen oxide, and carbon monoxide. Stack tests are not required except for quality assurance requirements in appendix F of this part.

SECTION 4. APPENDIX III

NSPS, SUBPART IIII - STATIONARY COMPRESSION IGNITION INTERNAL COMBUSTION ENGINES

The feedstock grinder/shredder will be powered by a new Caterpillar C18 ACERT industrial diesel engine rated for 765 brake horsepower at 2100 revolutions per minute, or an equivalent engine from another manufacturer. This engine is subject to the applicable requirements of 40 C.F.R. part 60, subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines. The provisions of this subpart may be provided in full upon request and are also available at the following link:

[Link to Subpart IIII](#)

SECTION 4. APPENDIX ZZZZ

NESHAP, SUBPART ZZZZ – STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES

The feedstock grinder/shredder will be powered by a new Caterpillar C18 ACERT industrial diesel engine rated for 765 brake horsepower at 2100 revolutions per minute, or an equivalent engine from another manufacturer. The emergency generator for the facility is an existing (1989 model year) Caterpillar 3412 diesel-powered unit, rated for approximately 500 kilowatts at about 750 horsepower. These engines are subject to the applicable requirements of 40 C.F.R. part 63, subpart ZZZZ—National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The complete provisions of subpart ZZZZ may be provided in full upon request and are also available at the following link:

[Link to Subpart ZZZZ](#)

Livingston, Sylvia

From: Livingston, Sylvia
Sent: Monday, August 02, 2010 5:16 PM
To: 'david.king@ineos.com'
Cc: 'dan.cummings@ineos.com'; 'mark.niederschulte@ineos.com'; 'currojp@cdm.com'; 'hibbardcs@cdm.com'; 'janssenge@cdm.com'; 'caroline.shine@dep.state.fl.us'; 'victoria.gibson@dep.state.fl.us'; 'hopeforcleanwater@yahoo.com'; Miesel, Tiffany; DeAngelo, Gregory; 'elizabeth.walker@dep.state.fl.us'
Subject: INEOS NEW PLANET BIOENERGY - INPB IRC FACILITY; 0610096-001-AC
Attachments: 0610096-001-AC_Signatures.pdf

Dear Sir/ Madam:

Attached is the official **Notice of Intent to Issue** for the project referenced below. Click on the link displayed below to access the permit project documents and send a "reply" message verifying receipt of the document(s) provided in the link; this may be done by selecting "Reply" on the menu bar of your e-mail software, noting that you can view the documents, and then selecting "Send".

Note: We must receive verification that you are able to access the documents. Your immediate reply will preclude subsequent e-mail transmissions to verify accessibility of the document(s).

Click on the following link to access the permit project documents:

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Owner/Company Name: INEOS NEW PLANET BIOENERGY
Facility Name: INPB IRC FACILITY
Project Number: 0610096-001-AC
Permit Status: DRAFT
Permit Activity: CONSTRUCTION
Facility County: INDIAN RIVER
Processor: Greg DeAngelo

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Permit project documents addressed in this email may require immediate action within a specified time frame. Please open and review the document(s) as soon as possible, and verify that they are accessible. Please advise this office of any changes to your e-mail address or that of the Engineer-of-Record. If you have any problems opening the documents or would like further information, please contact the Florida Department of Environmental Protection, Bureau of Air Regulation

Sylvia Livingston
Division of Air Resource Management (DARM)
850/921-9506
sylvia.livingston@dep.state.fl.us

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site: <http://www.adobe.com/products/acrobat/readstep.html> .

Livingston, Sylvia

From: david.king@ineos.com
Sent: Monday, August 02, 2010 9:02 PM
To: Livingston, Sylvia
Cc: Shine, Caroline; currojp@cdm.com; dan.cummings@ineos.com; Walker, Elizabeth (AIR); DeAngelo, Gregory; hibbardcs@cdm.com; hopeforcleanwater@yahoo.com; janssenge@cdm.com; mark.niederschulte@ineos.com; Miesel, Tiffany; Gibson, Victoria
Subject: Re: INEOS NEW PLANET BIOENERGY - INPB IRC FACILITY; 0610096-001-AC

To whom it may concern,
I am confirming receipt of the email and the ability to access the documents via the link provided.

Best regards,

David King
President - INEOS New Planet BioEnergy

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From: "Livingston, Sylvia" <Sylvia.Livingston@dep.state.fl.us>
To: David King/US/OP-US/INEOS@INEOS
Cc: Dan Cummings/US/BIO/INEOS@INEOS, Mark Niederschulte/US/BIO/INEOS@INEOS, "currojp@cdm.com" <currojp@cdm.com>, "hibbardcs@cdm.com" <hibbardcs@cdm.com>, "janssenge@cdm.com" <janssenge@cdm.com>, "Shine, Caroline" <Caroline.Shine@dep.state.fl.us>, "Gibson, Victoria" <Victoria.Gibson@dep.state.fl.us>, "hopeforcleanwater@yahoo.com" <hopeforcleanwater@yahoo.com>, "Miesel, Tiffany" <Tiffany.Miesel@dep.state.fl.us>, "DeAngelo, Gregory" <Gregory.DeAngelo@dep.state.fl.us>, "Walker, Elizabeth (AIR)" <Elizabeth.Walker@dep.state.fl.us>
Date: 08/02/2010 04:15 PM
Subject: INEOS NEW PLANET BIOENERGY - INPB IRC FACILITY; 0610096-001-AC

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Owner/Company Name: INEOS NEW PLANET BIOENERGY
Facility Name: INPB IRC FACILITY

Project Number: 0610096-001-AC

Permit Status: DRAFT

Permit Activity: CONSTRUCTION

Facility County: INDIAN RIVER

Processor: Greg DeAngelo

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<http://www.dep.state.fl.us/air/emission/apds/default.asp>.

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Sylvia Livingston

Division of Air Resource Management (DARM)

850/921-9506

sylvia.livingston@dep.state.fl.us

Note: The attached document is in Adobe Portable Document Format (pdf). Adobe Acrobat Reader can be downloaded for free at the following internet site:
<<http://www.adobe.com/products/acrobat/readstep.html>> .


The Department of Environmental Protection values your feedback as a customer. DEP Secretary Michael W. Sole is committed to continuously assessing and improving the level and quality of services provided to you. Please take a few minutes to comment on the quality of service you received. Simply click on [this link to the DEP Customer Survey](#). Thank you in advance for completing the survey.[attachment "0610096-001-AC_Signatures.pdf" deleted by David King/US/OP-US/INEOS]

Livingston, Sylvia

From: Janssen, Gretchen E. [janssenge@cdm.com]
Sent: Monday, August 02, 2010 5:24 PM
To: Livingston, Sylvia
Subject: RE: INEOS NEW PLANET BIOENERGY - INPB IRC FACILITY; 0610096-001-AC

Received and documents can be viewed

Thanks,
Gretchen E. Janssen

CDM | 1701 State Road A-1-A, Suite 301 | Vero Beach, FL 32963 | Office: (772)231-4301 | Direct: (772)360-3232 | Cell: (772)643-1337 | www.cdm.com |  Please consider the environment before printing this email

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Monday, August 02, 2010 5:16 PM
To: david.king@ineos.com
Cc: dan.cummings@ineos.com; mark.niederschulte@ineos.com; Curro, Joseph; Hibbard, Cynthia; Janssen, Gretchen E.; Shine, Caroline; Gibson, Victoria; hopeforcleanwater@yahoo.com; Miesel, Tiffany; DeAngelo, Gregory; Walker, Elizabeth (AIR)
Subject: INEOS NEW PLANET BIOENERGY - INPB IRC FACILITY; 0610096-001-AC

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Livingston, Sylvia

From: Curro, Joseph [CurroJP@cdm.com]
Sent: Monday, August 02, 2010 6:53 PM
To: Livingston, Sylvia
Subject: RE: INEOS NEW PLANET BIOENERGY - INPB IRC FACILITY; 0610096-001-AC

I have received and reviewed the documents.

From: Livingston, Sylvia [mailto:Sylvia.Livingston@dep.state.fl.us]
Sent: Monday, August 02, 2010 5:16 PM
To: david.king@ineos.com
Cc: dan.cummings@ineos.com; mark.niederschulte@ineos.com; Curro, Joseph; Hibbard, Cynthia; Janssen, Gretchen E.; Shine, Caroline; Gibson, Victoria; hopeforcleanwater@yahoo.com; Miesel, Tiffany; DeAngelo, Gregory; Walker, Elizabeth (AIR)
Subject: INEOS NEW PLANET BIOENERGY - INPB IRC FACILITY; 0610096-001-AC

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Sylvia Livingston
Division of Air Resource Management (DARM)