INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
100 N. Senate Avenue • Indianapolis, IN 46204
(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

TO: Interested Parties / Applicant

DATE: November 14, 2013

RE: Putnamville Correctional Facility / 133-33057-00005

FROM: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER.dot 6/13/13

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Minor Source Operating Permit Renewal
OFFICE OF AIR QUALITY

Putnamville Correctional Facility
1500 & 1946 W US 40
Greencastle, Indiana 46135

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

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-5.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a MSOP under 326 IAC 2-6.1.

Operation Permit No.: M133-33057-00005	
Issued by: Jenny Acker, Section Chief Permits Branch Office of Air Quality	Issuance Date: November 14, 2013 Expiration Date: November 14, 2023

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SECTION A SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary correctional facility.

Source Address:	1500 & 1946 W US 40, Greencastle, Indiana 46135
General Source Phone Number:	(765) 653-8441
SIC Code:	9223
County Location:	Putnam
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

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

(a) Two (2) natural gas-fired boilers, identified as Boiler #1 and Boiler #2, constructed in 1972, with a heat input capacity of 42.00 MMBtu per hour each, each using a natural gas-fired ignition burner with a heat input rating of 0.04474 MMBtu per hour each.

(b) One (1) wood-fired boiler system including one (1) boiler, identified as Boiler #3, permitted in 2007, with a maximum heat input capacity of 14.33 MMBtu per hour with emissions controlled by a cyclone, and exhausting to a stack.

(c) One (1) biomass (wood) handling and storage operation, consisting of the following:

(1) One (1) truck unloading operation with a maximum throughput of 9 tons of biomass (wood) per hour.

(2) One (1) biomass (wood) storage silo (volumetric capacity 10,000 cubic feet), with a maximum capacity to receive 4.13 tons per hour of biomass, with emissions controlled by a baghouse.

(3) One (1) biomass (wood) handling system with a maximum throughput of 2.81 tons per hour, with emissions controlled by a baghouse including: three (3) augers, three (3) conveyor, one (1) bucket elevator, one (1) fuel transfer system, and one (1) metering bin.

(4) One (1) biomass (wood) ash removal and handling system with a maximum throughput of 0.02 tons per hour.

(d) One (1) pallet shop operated by PEN Products with a maximum sawing throughput rate of 10,000 pounds of lumber per hour, constructed in 2008 and permitted in 2013, used for building wooden pallets, controlled by a dust collector with an estimated control efficiency of 90%.

(e) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(1) Six (6) space heaters located in laundry, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.175 million British thermal units (MMBtu) per hour, each;

(2) Ten (10) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.395 MMBtu per hour, each;

(3) Three (3) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.165 MMBtu per hour, each;

(4) One (1) rotisserie oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.40 MMBtu per hour;

(5) One (1) carousel oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.275 MMBtu per hour;

(6) Two (2) griddles located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.162 MMBtu per hour, each;

(7) One (1) tilt skillet located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.144 MMBtu per hour;

(8) One (1) range located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.110 MMBtu per hour;

(9) One (1) space heater located in the training building garage, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(10) Fifteen (15) space heaters located in the outside warehouse, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.043 MMBtu per hour, each;

(11) One (1) furnace located in the exercise room, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.175 MMBtu per hour;

(12) One (1) furnace located in the horse barn, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.080 MMBtu per hour.

(f) Liquefied petroleum (LP) gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(1) One (1) fryer located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(2) One (1) grill located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.310 MMBtu per hour;

(3) One (1) boiler located in the training building, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.5426 MMBtu per hour;

(4) One (1) space heater located in compost and recycling, constructed in 1993 and permitted in 2013, with a heat input capacity of 0.250 MMBtu per hour;

(g) One (1) diesel-fired furnace located in Labor 2, constructed 1980 and permitted in 2013, with a capacity of 1.12 gallons per hour of diesel fuel;

(h) Emergency generators, including:

(1) One (1) diesel-fired emergency generator, identified as Generator 1, manufactured February 27, 1987, installed January 8, 1988, and permitted in 2013, providing emergency power for the administrative building, with a rating of 72.4 horsepower (hp);

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

(3) One (1) diesel-fired emergency generator, identified as Generator 3, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 10, 11, and 12, with a rating of 402.3 hp;

(4) One (1) diesel-fired emergency generator, identified as Generator 4, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 17 and 18, with a rating of 402.3 hp;

(5) One (1) diesel-fired emergency generator, identified as Generator 5, manufactured August 1986, and permitted in 2013, providing emergency power for Dorms 13 through 16, with a rating of 368.8 hp;

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for the High Mast light, with a rating of 53.6 hp;

(7) One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for the maximum security unit (MSU), with a rating of 107.3 hp;

(8) One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for the prison dining room (PDR), with a rating of 402.3 hp;

(9) One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house (the building housing Boilers 1, 2 and 3) with a rating of 670.5 hp;

(10) One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house (the building housing Boilers 1, 2 and 3) with a rating of 234.7 hp;

(11) One (1) diesel-fired emergency generator, identified as Generator 11, manufactured February 10, 1989, installed April, 1989, and permitted in 2013, providing emergency power for the store room, with a rating of 268.2 hp;

(12) One (1) diesel-fired emergency generator, identified as Generator 12, manufactured February 28, 2001 installed March 7, 2001, and permitted in 2013,

providing emergency power for the wastewater treatment plant, with a rating of 234.7 hp;

(i) One (1) electric-powered grizzly wood grinder constructed in 2011 and permitted in 2013, with a maximum raw wood capacity of 4.0 tons per hour, used to grind wood used in the wood-fired boiler;

(j) Welding operations, constructed in 2000 and permitted in 2013, including three (3) MIG stations with a maximum electrode consumption of 0.33 pounds per hour each, two (2) TIG stations with a maximum electrode consumption of 0.017 pounds per hour each, and one (1) plasma cutter with a maximum metal cutting rate of 4.0 inches per hour.

(k) Grinding and metal cutting operations, constructed in 2000 and permitted in 2013, including three (3) grinders with a maximum throughput rate of 0.83 pounds of metal per hour each, and one (1) metal saw with a maximum throughput rate of 0.17 pounds of metal per hour.

(l) One (1) carpenter shop used for maintenance carpentry, constructed in 2000 and permitted in 2013, controlled by a baghouse with an estimated control efficiency of 90%;

(m) One (1) park and patio construction shop operated by PEN Products with a maximum sawing throughput rate of 240 pounds of lumber per hour, constructed in 2008 and permitted in 2013, used for building wooden park and patio furniture;

(n) Three (3) parts washers located in auto maintenance education, Labor 2, and vehicle maintenance, constructed in 1980, 1980 and 2000, respectively and permitted in 2013, using Zep Dyna 143 at a rate of 20.0, 20.0, and 30.0 gallons per year, respectively

(o) One (1) paint shop, constructed in 2000 and permitted in 2013, used for maintenance painting, using both water-based and solvent-based paints at a rate of 0.167 gallons per hour.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, M133-33057-00005, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

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

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

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

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

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

B.4 Enforceability

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

B.5 Severability

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

B.6 Property Rights or Exclusive Privilege

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

B.7 Duty to Provide Information

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

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

B.8 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

(b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

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

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

B.9 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

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

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

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

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

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

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

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

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

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

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.

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

B.10 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to M133-33057-00005 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

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

B.11 Termination of Right to Operate [326 IAC 2-6.1-7(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least one hundred twenty (120) days prior to the date of expiration of the source’s existing permit, consistent with 326 IAC 2-6.1-7.

B.12 Permit Renewal [326 IAC 2-6.1-7]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

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

(1) Submitted at least one hundred twenty (120) days prior to the date of the expiration of this permit; and

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

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-6.1 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-6.1-4(b), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.13 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to amend or modify this permit.

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

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

(c) The Permittee shall notify the OAQ no later than thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.14 Source Modification Requirement

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2.

B.15 Inspection and Entry
[326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

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

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

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

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

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

B.16 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

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

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

The application which shall be submitted by the Permittee does require an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

B.17 Annual Fee Payment [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees due no later than thirty (30) calendar days of receipt of a bill from IDEM, OAQ.

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

B.18 Credible Evidence [326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

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

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

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

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

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

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

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

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

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

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

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

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

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

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

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

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

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

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

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

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

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

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

All required notifications shall be submitted to:

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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project.

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

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

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-6.1-5(a)(2)]

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

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

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

no later than thirty-five (35) days prior to the intended test date.

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date.

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]

C.11 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.12 Instrument Specifications [326 IAC 2-1.1-11]

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

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps

C.13 Response to Excursions or Exceedances

Upon detecting an excursion where a response step is required by the D Section or an exceedance, of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

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

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

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

(1) monitoring results;

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

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

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

(e) The Permittee shall record the reasonable response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

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

Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]

C.15 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.16 General Record Keeping Requirements [326 IAC 2-6.1-5]

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

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.17 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) Reports required by conditions in Section D of this permit shall be submitted to:

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

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

(c) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) Two (2) natural gas-fired boilers, identified as Boiler #1 and Boiler #2, constructed in 1972, with a heat input rating of 42.00 MMBtu per hour each, each using a natural gas-fired ignition burner with a heat input rating of 0.04474 MMBtu per hour each.

(b) One (1) wood-fired boiler system including one (1) boiler, identified as Boiler #3, permitted in 2007, with a maximum heat input capacity of 14.33 MMBtu per hour with emissions controlled by a cyclone, and exhausting to a stack.

(f) Liquefied petroleum (LP) gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(3) One (1) boiler located in the training building, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.5426 MMBtu per hour;

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.1.1 Particulate Matter Limitation (PM) [326 IAC 6-2]

(a) Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from Boiler #3 (wood-fired) shall be limited to 0.33 pounds per MMBtu heat input.

(b) Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating), the PM emissions from the following units shall be limited to Pt pounds per MMBtu heat input, as follows:

Unit ID	Pt (lb/MMBtu)
Boiler #1	0.6
Boiler #2	0.6
liquefied petroleum gas-fired boiler	0.47

D.1.2 Startup, Shutdown, and Other Opacity Limits [326 IAC 5-1-3]

Pursuant to 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), the following applies:

(a) When building a new fire in a boiler, or shutting down a boiler, opacity may exceed the applicable limit established in 326 IAC 5-1-2 and stated in Section C - Opacity. However, opacity levels shall not exceed sixty percent (60%) for any six (6)-minute averaging period. Opacity in excess of the applicable limit established in 326 IAC 5-1-2 shall not continue for more than two (2) six (6)-minute averaging periods in any twenty-four (24) hour period.

(b) When removing ashes from the fuel bed or furnace in a boiler or blowing tubes, opacity may exceed the applicable limit established in 326 IAC 5-1-2 and stated in Section C - Opacity. However, opacity levels shall not exceed sixty percent (60%) for any six (6)-minute averaging period and opacity in excess of the applicable limit shall not continue for more than one (1) six (6)-minute averaging periods in any sixty (60) minute period. The averaging periods shall not be permitted for more than three (3) six (6)-minute averaging periods in a twelve (12) hour period.

(c) If this facility cannot meet the opacity limitations in (a) of this condition, the Permittee may submit a written request to IDEM, OAM, for a temporary alternative opacity limitation in accordance with 326 IAC 5-1-3(d). The Permittee must demonstrate that the alternative limit is needed and justifiable.

D.1.3 Preventive Maintenance Plan

A Preventive Maintenance Plan is required for these facilities and any control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.4 Particulate Control

In order to comply with Condition D.1.1(a), the cyclone for particulate control shall be in operation and control emissions from the wood-fired boiler (Boiler #3) at all times that the wood-fired boiler is in operation.

Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]

D.1.5 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. The emissions unit shall be shut down no later than the completion of the wood-fired boiler. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

D.1.6 Visible Emissions Notations

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

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

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

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

(e) If abnormal emissions are observed, the Permittee shall take reasonable response. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]

D.1.7 Record Keeping Requirements

(a) To document compliance with Condition D.1.6, the Permittee shall maintain a daily record of visible emission notations for Wood Boiler stack exhaust. The Permittee shall include in each daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

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

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(c) One (1) biomass (wood) handling and storage operation, consisting of the following:

(1) One (1) truck unloading operation with a maximum throughput of 9 tons of biomass (wood) per hour.

(2) One (1) biomass (wood) storage silo (volumetric capacity 10,000 cubic feet), with a maximum capacity to receive 4.13 tons per hour of biomass (wood), with emissions controlled by a baghouse.

(3) One (1) biomass (wood) handling system with a maximum throughput of 2.81 tons per hour, with emissions controlled by a baghouse including: three (3) augers, three (3) conveyor, one (1) bucket elevator, one (1) fuel transfer system, and one (1) metering bin.

(4) One (1) biomass (wood) ash removal and handling system with a maximum throughput of 0.02 tons per hour.

(i) One (1) electric-powered grizzly wood grinder constructed in 2011 and permitted in 2013, with a maximum raw wood capacity of 4.0 tons per hour, used to grind wood used in the wood-fired boiler;

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.2.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate emissions from the biomass (wood) handling and storage and grizzly wood grinder operations shall be limited by the following:

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

$E = 4.10\ P^{0.67}$

Where:
E = Rate of emission in pounds per hour; and
P = Process weight rate in tons per hour

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Biomass (wood) Storage Silo	4.13	10.60
Truck Unloading Operation	9.00	17.87
Biomass (wood) Handling System	2.81	8.20
Grizzly Wood Grinder	4.00	10.38

SECTION E.1 New Source Performance Standards [326 IAC 2-6.1-5(a)(1)][326 IAC 12-1][40 CFR 60, Subpart JJJJ]

Facility Description [326 IAC 2-6.1-5(a)(1)]:

(h) Emergency generators, including:

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

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

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

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

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.1.2 Standard of Performance for Stationary Spark Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart JJJJ]

Pursuant to 40 CFR 60 Subpart JJJJ (included as Attachment A of this permit), the Permittee shall comply with the provisions of Standard of Performance for Stationary Spark Ignition Internal Combustion Engines for the natural gas fired boilers as specified as follows:

(1) 40 CFR 60.4230(a)(6)
(2) 40 CFR 60.4233(d)
(3) 40 CFR 60.4234
(4) 40 CFR 60.4236(c)
(5) 40 CFR 60.4243(b), (d), (e), (f)
(6) 40 CFR 60.4244
(7) 40 CFR 60.4245
(8) 40 CFR 60.4246
(9) 40 CFR 60.4248
(10) Table 1 for Subpart JJJJ
(11) Table 2 for Subpart JJJJ
(12) Table 3 for Subpart JJJJ

SECTION E.2 New Source Performance Standards[326 IAC 2-6.1-5(a)(1)] [326 IAC 12-1][40 CFR 60, Subpart IIII]

Facility Description [326 IAC 2-6.1-5(a)(1)]:

(h) Emergency generators, including:

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for high mast light, with a rating of 53.6 hp;

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

E.2.1 General Provision Relating to New Source Performance Standards [326 IAC 12] [40 CFR 60, Subpart A]

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

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.2.2 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

Pursuant to 40 CFR 60 Subpart IIII (included as Attachment B of this permit), the Permittee shall comply with the provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines for the diesel-fired emergency generator as specified as follows:

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (c)
(2) 40 CFR 60.4205(a)
(3) 40 CFR 60.4206
(4) 40 CFR 60.4207
(5) 40 CFR 60.4208
(6) 40 CFR 60.4209(a)
(7) 40 CFR 60.4211(b)
(8) 40 CFR 60.4214(b)
(9) 40 CFR 60.4217
(10) 40 CFR 60.4218
(11) 40 CFR 60.4219
(12) Table 1 for Subpart IIII

SECTION E.3 New Source Performance Standards [326 IAC 2-6.1-5(a)(1)] [326 IAC 12-1][40 CFR 60, Subpart Dc]

Facility Description [326 IAC 2-6.1-5(a)(1)]:

(b) One (1) wood-fired boiler system including one (1) boiler, identified as Boiler #3, permitted in 2007, with a maximum heat input capacity of 14.33 MMBtu per hour with emissions controlled by a cyclone, and exhausting to a stack.

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

E.3.1 General Provision Relating to New Source Performance Standards [326 IAC 12] [40 CFR 60, Subpart A]

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

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.3.2 Standard of Performance for Small Industrial-Commercial Institutional Steam Generating Units [326 IAC 12] [40 CFR 60, Subpart Dc]

Pursuant to 40 CFR 60 Subpart Dc (included as Attachment C of this permit), the Permittee shall comply with the provisions of Standard of Performance for Small Industrial-Commercial Institutional Steam Generating Units for the natural gas fired boilers as specified as follows:

(1) 40 CFR 60.40c
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a)(1),(3), (g), and (i)

SECTION E.4 National Emission Standards for Hazardous Air Pollutants[326 IAC 2-6.1-5(a)(1)] [326 IAC 20] [40 CFR 63, Subpart JJJJJJ]

Facility Description [326 IAC 2-6.1-5(a)(1)]:

(b) One (1) wood-fired boiler system including one (1) boiler, identified as Boiler #3, permitted in 2007, with a maximum heat input capacity of 14.33 MMBtu per hour with emissions controlled by a cyclone, and exhausting to a stack.

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

E.4.1 General Provision Relating to National Emission Standards for Hazardous Air Pollutants [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 63, Subpart JJJJJJ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.4.2 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources [40 CFR 63, Subpart JJJJJJ]

Pursuant to 40 CFR 63 Subpart JJJJJJ (included as Attachment D of this permit), the Permittee shall comply with the provisions of Standard of Performance for Industrial, Commercial, and Institutional Boilers Area Sources for the natural gas fired boilers as specified as follows:

(1) 40 CFR 63.11193
(2) 40 CFR 63.11194(a)(1), (b), (f)
(3) 40 CFR 63.11196(a), (d)
(4) 40 CFR 63.11200(b)
(5) 40 CFR 63.11201
(6) 40 CFR 63.11205
(7) 40 CFR 63.11210(a), (b), (c), (h)
(8) 40 CFR 63.11211
(9) 40 CFR 63.11212
(10) 40 CFR 63.11213
(11) 40 CFR 63.11214
(12) 40 CFR 63.11220
(13) 40 CFR 63.11221

(14) 40 CFR 63.11222
(15) 40 CFR 63.11223
(16) 40 CFR 63.11224
(17) 40 CFR 63.11225
(18) 40 CFR 63.11226
(19) 40 CFR 63.11235
(20) 40 CFR 63.11236
(21) 40 CFR 63.11237
(22) Table 1 for Subpart JJJJJJ
(23) Table 2 for Subpart JJJJJJ
(24) Table 3 for Subpart JJJJJJ
(25) Table 7 for Subpart JJJJJJ

SECTION E.5 National Emission Standards for Hazardous Air Pollutants [326 IAC 2-6.1-5(a)(1)] [326 IAC 20][40 CFR 63, Subpart ZZZZ]

Emissions Unit Description:
(h) Emergency generators, including: (2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour; (The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

E.5.1 General Provisions Relating to NESHAP ZZZZ [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

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

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.5.2 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-82][40 CFR 63, Subpart ZZZZ]

The Permittee which owns or operates a stationary RICE at a minor source of HAP emissions shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment E of this permit):

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a), (c), (d), (f)(3)
(3) 40 CFR 63.6590(a)(1)(iii), (a)(2)(iii), (c)(1)
(4) 40 CFR 63.6640(f)(1), (2), (4)
(5) 40 CFR 63.6645(a)(5)
(6) 40 CFR 63.6650(a), (b), (h)
(7) 40 CFR 63.6655(f)(2)
(8) 40 CFR 63.6660
(9) 40 CFR 63.6665
(10) 40 CFR 63.6670
(11) 40 CFR 63.6675
(12) Table 7 for Subpart ZZZZ
(13) Table 8 for Subpart ZZZZ

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

MINOR SOURCE OPERATING PERMIT (MSOP)
CERTIFICATION

Source Name: Putnamville Correctional Facility
Source Address: 1500 & 1946 W US 40, Greencastle, Indiana 46135
Mailing Address: 1500 & 1946 W US 40, Greencastle, Indiana 46135
MSOP Permit No.: M133-33057-00005

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

- ☐ Annual Compliance Certification Letter
- ☐ Test Result (specify)____
- ☐ Report (specify)____
- ☐ Notification (specify)____
- ☐ Affidavit (specify)____
- ☐ Other (specify)____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.   Signature:
Printed Name:
Title/Position:
Date:

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	Putnamville Correctional Facility
Address:	1500 & 1946 W US 40
City:	Greencastle, Indiana 46135
Phone #:	(765) 653-8441
MSOP #:	M133-33057-00005

I hereby certify that Putnamville Correctional Facility is :
☐ still in operation.
☐ no longer in operation.

I hereby certify that Putnamville Correctional Facility is :
☐ in compliance with the requirements of MSOP M133-33057-00005.
☐ not in compliance with the requirements of MSOP M133-33057-00005.

Authorized Individual (typed):
Title:
Signature:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FAX NUMBER - 317 233-6865

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTE ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____,
25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YE REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YE ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAI LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABL LIMITATION ________.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _______ OR, PERMIT CONDITION # _______ AND/OR PERMIT LIMIT OF _______________

THIS INCIDENT MEETS THE DEFINITION OF “MALFUNCTION” AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY:____PHONE NO. ( )__________________
LOCATION: (CITY AND COUNTY)____
PERMIT NO. ________________ AFS PLANT ID: ________________ AFS POINT ID: ________________ INSP:__________
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON:____
____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ ____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: ______________________________________

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE______/______/ 20____ _______________ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:_______________________________________

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: ______________________________________

____

MEASURES TAKEN TO MINIMIZE EMISSIONS:____

____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:____________________________________
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:____________________________________
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:_________________________
INTERIM CONTROL MEASURES: (IF APPLICABLE)____
____
____

MALFUNCTION REPORTED BY:_________________________________TITLE:___________________________
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY:______________________DATE:_________________TIME:_________________
*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

____
____

Mail to: Permit Administration & Development Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Putnamville Correctional Facility
1500 & 1946 W US 40
Greencastle, Indiana 46135

Affidavit of Construction

I, ____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in ______________________________ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of ________________________ for ________________________.
(Title) (Company Name)

3. By virtue of my position with __________________________________, I have personal
(Company Name)

knowledge of the representations contained in this affidavit and am authorized to make

these representations on behalf of ____.
(Company Name)

4. I hereby certify that Putnamville Correctional Facility 1500 & 1946 W US 40, Greencastle, Indiana 46135, completed construction of the correctional facility on ______________________in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on May 12, 2008 and as permitted pursuant to New Source Review Permit and Minor Source Operating Permit No. M133-33057-00005, Plant ID No. 133-00005 issued on __________.

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

Signature____

Date____

STATE OF INDIANA)
)SS

COUNTY OF ______________________)

Subscribed and sworn to me, a notary public in and for ________________________ County and State of Indiana on this _____________________ day of ___________________, 20 _____. My Commission expires: _______________.

Signature_________________________________

Name___________________________ (typed or printed)

Attachment A
to MSOP No. M133-33057-00005

Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines

SOURCE: 73 FR 3591, Jan. 18, 2008, unless otherwise noted.

What This Subpart Covers

§ 60.4230 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary spark ignition (SI) internal combustion engines (ICE) as specified in paragraphs (a)(1) through (6) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary SI ICE with a maximum engine power less than or equal to 19 kilowatt (KW) (25 horsepower (HP)) that are manufactured on or after July 1, 2008.

(2) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline fueled or that are rich burn engines fueled by liquefied petroleum gas (LPG), where the date of manufacture is:

(i) On or after July 1, 2008; or

(ii) On or after January 1, 2009, for emergency engines.

(3) Manufacturers of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are not gasoline fueled and are not rich burn engines fueled by LPG, where the manufacturer participates in the voluntary manufacturer certification program described in this subpart and where the date of manufacture is:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) On or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) On or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) On or after January 1, 2009, for emergency engines.

(4) Owners and operators of stationary SI ICE that commence construction after June 12, 2006, where the stationary SI ICE are manufactured:

(i) On or after July 1, 2007, for engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) on or after January 1, 2008, for lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP;

(iii) on or after July 1, 2008, for engines with a maximum engine power less than 500 HP; or

(iv) on or after January 1, 2009, for emergency engines with a maximum engine power greater than 19 KW (25 HP).

(5) Owners and operators of stationary SI ICE that are modified or reconstructed after June 12, 2006, and any person that modifies or reconstructs any stationary SI ICE after June 12, 2006.

(6) The provisions of § 60.4236 of this subpart are applicable to all owners and operators of stationary SI ICE that commence construction after June 12, 2006.

(b) The provisions of this subpart are not applicable to stationary SI ICE being tested at an engine test cell/stand.

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

(d) For the purposes of this subpart, stationary SI ICE using alcohol-based fuels are considered gasoline engines.

(e) Stationary SI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR parts 90 and 1048, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(f) Owners and operators of facilities with internal combustion engines that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37972, June 28, 2011]

Emission Standards for Manufacturers

§ 60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008 to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as follows:

If engine displacement is	and manufacturing dates are * * *	the engine must meet emission standards and related requirements for nonhandheld engines under

* * *		* * *
(1) below 225 cc	July 1, 2008 to December 31, 2011	40 CFR part 90.
(2) below 225 cc	January 1, 2012 or later	40 CFR part 1054.
(3) at or above 225 cc	July 1, 2008 to December 31, 2010	40 CFR part 90.
(4) at or above 225 cc	January 1, 2011 or later	40 CFR part 1054.

(b) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that use gasoline and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE with a maximum engine power greater than 25 HP and less than 130 HP that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cubic centimeters (cc) to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate.

(c) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that are rich burn engines that use LPG and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE with a maximum engine power greater than 25 HP and less than 130 HP that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate.

(d) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) under the voluntary manufacturer certification program described in this subpart must certify those engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers who choose to certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP, must certify those engines to the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, for new nonroad SI engines in 40 CFR part 90. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards for new nonroad SI engines in 40 CFR part 90 or 1054, as appropriate. For stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) manufactured prior to January 1, 2011, manufacturers may choose to certify these engines to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP.

(e) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) under the voluntary manufacturer certification program described in this subpart must certify those engines to the emission standards in Table 1 to this subpart. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) that are lean burn engines that use LPG to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. For stationary SI ICE with a maximum engine power greater than or equal to 100 HP (75 KW) and less than 500 HP (373 KW) manufactured prior to January 1, 2011, and for stationary SI ICE with a maximum engine power greater than or equal to 500 HP (373 KW) manufactured prior to July 1, 2010, manufacturers may choose to certify these engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048 applicable to engines that are not severe duty engines.

(f) Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, to the extent they apply to equipment manufacturers.

(g) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary SI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed stationary SI ICE.

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59175, Oct. 8, 2008; 76 FR 37973, June 28, 2011]

§ 60.4232 How long must my engines meet the emission standards if I am a manufacturer of stationary SI internal combustion engines?

Engines manufactured by stationary SI internal combustion engine manufacturers must meet the emission standards as required in § 60.4231 during the certified emissions life of the engines.

Emission Standards for Owners and Operators

§ 60.4233 What emission standards must I meet if I am an owner or operator of a stationary SI internal combustion engine?

(a) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008, must comply with the emission standards in § 60.4231(a) for their stationary SI ICE.

(b) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that use gasoline must comply with the emission standards in § 60.4231(b) for their stationary SI ICE.

(c) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) manufactured on or after the applicable date in § 60.4230(a)(4) that are rich burn engines that use LPG must comply with the emission standards in § 60.4231(c) for their stationary SI ICE.

(d) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards for field testing in 40 CFR 1048.101(c) for their non-emergency stationary SI ICE and with the emission standards in Table 1 to this subpart for their emergency stationary SI ICE. Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) manufactured prior to January 1, 2011, that were certified to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP, may optionally choose to meet those standards.

(e) Owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 75 KW (100 HP) (except gasoline and rich burn engines that use LPG) must comply with the emission standards in Table 1 to this subpart for their stationary SI ICE. For owners and operators of stationary SI ICE with a maximum engine power greater than or equal to 100 HP (except gasoline and rich burn engines that use LPG) manufactured prior to January 1, 2011 that were certified to the certification emission standards in 40 CFR part 1048 applicable to engines that are not severe duty engines, if such stationary SI ICE was certified to a carbon monoxide (CO) standard above the standard in Table 1 to this subpart, then the owners and operators may meet the CO certification (not field testing) standard for which the engine was certified.

(f) Owners and operators of any modified or reconstructed stationary SI ICE subject to this subpart must meet the requirements as specified in paragraphs (f)(1) through (5) of this section.

(1) Owners and operators of stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with emission standards in § 60.4231(a) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in § 60.4231(a) applicable to engines manufactured on July 1, 2008.

(2) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are gasoline engines and are modified or reconstructed after June 12, 2006, must comply with the emission standards in § 60.4231(b) for their stationary SI ICE. Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(b) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

(3) Owners and operators of stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) that are rich burn engines that use LPG, that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in § 60.4231(c). Engines with a date of manufacture prior to July 1, 2008 (or January 1, 2009 for emergency engines) must comply with the emission standards specified in § 60.4231(c) applicable to engines manufactured on July 1, 2008 (or January 1, 2009 for emergency engines).

(4) Owners and operators of stationary SI natural gas and lean burn LPG engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (d) or (e) of this section, except that such owners and operators of non-emergency engines and emergency engines greater than or equal to 130 HP must meet a nitrogen oxides (NO_X) emission standard of 3.0 grams per HP-hour (g/HP-hr), a CO emission standard of 4.0 g/HP-hr (5.0 g/HP-hr for non-emergency engines less than 100 HP), and a volatile organic compounds (VOC) emission standard of 1.0 g/HP-hr, or a NO_X emission standard of 250 ppmvd at 15 percent oxygen (O_2), a CO emission standard 540 ppmvd at 15 percent O_2 (675 ppmvd at

15 percent O_2 for non-emergency engines less than 100 HP), and a VOC emission standard of 86 ppmvd at 15 percent O_2 , where the date of manufacture of the engine is:

(i) Prior to July 1, 2007, for non-emergency engines with a maximum engine power greater than or equal to 500 HP (except lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP);

(ii) Prior to July 1, 2008, for non-emergency engines with a maximum engine power less than 500 HP;

(iii) Prior to January 1, 2009, for emergency engines;

(iv) Prior to January 1, 2008, for non-emergency lean burn natural gas engines and LPG engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP.

(5) Owners and operators of stationary SI landfill/digester gas ICE engines with a maximum engine power greater than 19 KW (25 HP), that are modified or reconstructed after June 12, 2006, must comply with the same emission standards as those specified in paragraph (e) of this section for stationary landfill/digester gas engines. Engines with maximum engine power less than 500 HP and a date of manufacture prior to July 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power less than 500 HP manufactured on July 1, 2008. Engines with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) and a date of manufacture prior to July 1, 2007 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE with a maximum engine power greater than or equal to 500 HP (except lean burn engines greater than or equal to 500 HP and less than 1,350 HP) manufactured on July 1, 2007. Lean burn engines greater than or equal to 500 HP and less than 1,350 HP with a date of manufacture prior to January 1, 2008 must comply with the emission standards specified in paragraph (e) of this section for stationary landfill/digester gas ICE that are lean burn engines greater than or equal to 500 HP and less than 1,350 HP and manufactured on January 1, 2008.

(g) Owners and operators of stationary SI wellhead gas ICE engines may petition the Administrator for approval on a case-by-case basis to meet emission standards no less stringent than the emission standards that apply to stationary emergency SI engines greater than 25 HP and less than 130 HP due to the presence of high sulfur levels in the fuel, as specified in Table 1 to this subpart. The request must, at a minimum, demonstrate that the fuel has high sulfur levels that prevent the use of aftertreatment controls and also that the owner has reasonably made all attempts possible to obtain an engine that will meet the standards without the use of aftertreatment controls. The petition must request the most stringent standards reasonably applicable to the engine using the fuel.

(h) Owners and operators of stationary SI ICE that are required to meet standards that reference 40 CFR 1048.101 must, if testing their engines in use, meet the standards in that section applicable to field testing, except as indicated in paragraph (e) of this section.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37973, June 28, 2011]

§ 60.4234 How long must I meet the emission standards if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE must operate and maintain stationary SI ICE that achieve the emission standards as required in § 60.4233 over the entire life of the engine.

Other Requirements for Owners and Operators

§ 60.4235 What fuel requirements must I meet if I am an owner or operator of a stationary SI gasoline fired internal combustion engine subject to this subpart?

Owners and operators of stationary SI ICE subject to this subpart that use gasoline must use gasoline that meets the per gallon sulfur limit in 40 CFR 80.195.

§ 60.4236 What is the deadline for importing or installing stationary SI ICE produced in previous model years?

(a) After July 1, 2010, owners and operators may not install stationary SI ICE with a maximum engine power of less than 500 HP that do not meet the applicable requirements in § 60.4233.

(b) After July 1, 2009, owners and operators may not install stationary SI ICE with a maximum engine power of greater than or equal to 500 HP that do not meet the applicable requirements in § 60.4233, except that lean burn engines with a maximum engine power greater than or equal to 500 HP and less than 1,350 HP that do not meet the applicable requirements in § 60.4233 may not be installed after January 1, 2010.

(c) For emergency stationary SI ICE with a maximum engine power of greater than 19 KW (25 HP), owners and operators may not install engines that do not meet the applicable requirements in § 60.4233 after January 1, 2011.

(d) In addition to the requirements specified in §§ 60.4231 and 60.4233, it is prohibited to import stationary SI ICE less than or equal to 19 KW (25 HP), stationary rich burn LPG SI ICE, and stationary gasoline SI ICE that do not meet the applicable requirements specified in paragraphs (a), (b), and (c) of this section, after the date specified in paragraph (a), (b), and (c) of this section.

(e) The requirements of this section do not apply to owners and operators of stationary SI ICE that have been modified or reconstructed, and they do not apply to engines that were removed from one existing location and reinstalled at a new location.

§ 60.4237 What are the monitoring requirements if I am an owner or operator of an emergency stationary SI internal combustion engine?

(a) Starting on July 1, 2010, if the emergency stationary SI internal combustion engine that is greater than or equal to 500 HP that was built on or after July 1, 2010, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.

(b) Starting on January 1, 2011, if the emergency stationary SI internal combustion engine that is greater than or equal to 130 HP and less than 500 HP that was built on or after January 1, 2011, does not meet the standards applicable to non-emergency engines, the owner or operator must install a non-resettable hour meter.

(c) If you are an owner or operator of an emergency stationary SI internal combustion engine that is less than 130 HP, was built on or after July 1, 2008, and does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine.

Compliance Requirements for Manufacturers

§ 60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(a) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§ 60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(b) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§ 60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(c) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

[73 FR 59176, Oct. 8, 2008]

§ 60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?

(a) Manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to certify their engines to the emission standards in § 60.4231(d) or (e), as applicable, under the voluntary certification program described in this subpart. Manufacturers who certify their engines under the voluntary certification program must meet the requirements as specified in paragraphs (b) through (g) of this section. In addition, manufacturers of stationary SI internal combustion engines who choose to certify their engines under the voluntary certification program, must also meet the requirements as specified in § 60.4247.

(b) Manufacturers of engines other than those certified to standards in 40 CFR part 90 or 40 CFR part 1054 must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must follow the same test procedures that apply to large SI nonroad engines under 40 CFR part 1048, but must use the D-1 cycle of International Organization of Standardization 8178-4: 1996(E) (incorporated by reference, see 40 CFR 60.17) or the test cycle requirements specified in Table 3 to 40 CFR 1048.505, except that Table 3 of 40 CFR 1048.505 applies to high load engines only. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 90 or 40 CFR part 1054, and manufacturers of emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 standards in 40 CFR 90.103, applicable to class II engines, must certify their stationary SI ICE using the certification procedures required in 40 CFR part 90, subpart B, or 40 CFR part 1054, subpart C, as applicable, and must test their engines as specified in those parts. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

(c) Certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, is voluntary, but manufacturers who decide to certify are subject to all of the requirements indicated in this subpart with regard to the engines included in their certification. Manufacturers must clearly label their stationary SI engines as certified or non-certified engines.

(d) Manufacturers of natural gas fired stationary SI ICE who conduct voluntary certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the definition of pipeline-quality natural gas. The fuel used for certifying stationary SI natural gas engines must meet the definition of pipeline-quality natural gas as described in § 60.4248. In addition, the manufacturer must provide information to the owner and operator of the certified stationary SI engine including the specifications of the pipeline-quality natural gas to which the engine is certified and what adjustments the owner or operator must make to the engine when installed in the field to ensure compliance with the emission standards.

(e) Manufacturers of stationary SI ICE that are lean burn engines fueled by LPG who conduct voluntary certification of stationary SI ICE to the emission standards specified in § 60.4231(d) or (e), as applicable, must certify their engines for operation using fuel that meets the specifications in 40 CFR 1065.720.

(f) Manufacturers may certify their engines for operation using gaseous fuels in addition to pipeline-quality natural gas; however, the manufacturer must specify the properties of that fuel and provide testing information showing that the engine will meet the emission standards specified in § 60.4231(d) or (e), as applicable, when operating on that fuel. The manufacturer must also provide instructions for configuring the stationary engine to meet the emission standards on fuels that do not meet the pipeline-quality natural gas definition. The manufacturer must also provide information to the owner and operator of the certified stationary SI engine regarding the configuration that is most conducive to reduced emissions where the engine will be operated on gaseous fuels with different quality than the fuel that it was certified to.

(g) A stationary SI engine manufacturer may certify an engine family solely to the standards applicable to landfill/digester gas engines as specified in § 60.4231(d) or (e), as applicable, but must certify their engines for operation using landfill/digester gas and must add a permanent label stating that the engine is for use only in landfill/digester gas applications. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).

(h) For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

(i) For engines being certified to the voluntary certification standards in Table 1 of this subpart, the VOC measurement shall be made by following the procedures in 40 CFR 1065.260 and 1065.265 in order to determine the total NMHC emissions by using a flame-ionization detector and non-methane cutter. As an alternative to the nonmethane cutter, manufacturers may use a gas chromatograph as allowed under 40 CFR 1065.267 and may measure ethane, as well as methane, for excluding such levels from the total VOC measurement.

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59176, Oct. 8, 2008; 76 FR 37974, June 28, 2011]

§ 60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must meet the provisions of 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054, as applicable, as well as 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1048 or 1054, except that engines certified pursuant to the voluntary certification procedures in § 60.4241 are subject only to the provisions indicated in § 60.4247 and are permitted to provide instructions to owners and operators allowing for deviations from certified configurations, if such deviations are consistent with the provisions of paragraphs § 60.4241(c) through (f). Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, as applicable. Labels on engines certified to 40 CFR part 1048 must refer to stationary engines, rather than or in addition to nonroad engines, as appropriate.

(b) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054 for that model year may certify any such family that contains both nonroad and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts. This provision also applies to equipment or component manufacturers certifying to standards under 40 CFR part 1060.

(c) Manufacturers of engine families certified to 40 CFR part 1048 may meet the labeling requirements referred to in paragraph (a) of this section for stationary SI ICE by either adding a separate label containing the information required in paragraph (a) of this section or by adding the words “and stationary” after the word “nonroad” to the label.

(d) For all engines manufactured on or after January 1, 2011, and for all engines with a maximum engine power greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, a stationary SI engine manufacturer that certifies an engine family solely to the standards applicable to emergency engines must add a permanent label stating that the engines in that family are for emergency use only. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).

(e) All stationary SI engines subject to mandatory certification that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230. Stationary SI engines subject to standards in 40 CFR part 90 may use the provisions in 40 CFR 90.909. Manufacturers of stationary engines with a maximum engine power greater than 25 HP that are not certified to standards and other requirements under 40 CFR part 1048 are subject to the labeling provisions of 40 CFR 1048.20 pertaining to excluded stationary engines.

(f) For manufacturers of gaseous-fueled stationary engines required to meet the warranty provisions in 40 CFR 90.1103 or 1054.120, we may establish an hour-based warranty period equal to at least the certified emissions life of the engines (in engine operating hours) if we determine that these engines are likely to operate for a number of hours greater than the applicable useful life within 24 months. We will not approve an alternate warranty under this paragraph (f) for nonroad engines. An alternate warranty period approved under this paragraph (f) will be the specified number of engine operating hours or two years, whichever comes first. The engine manufacturer shall request this alternate warranty period in its application for certification or in an earlier submission. We may approve an alternate warranty period for an engine family subject to the following conditions:

(1) The engines must be equipped with non-resettable hour meters.

(2) The engines must be designed to operate for a number of hours substantially greater than the applicable certified emissions life.

(3) The emission-related warranty for the engines may not be shorter than any published warranty offered by the manufacturer without charge for the engines. Similarly, the emission-related warranty for any component shall not be shorter than any published warranty offered by the manufacturer without charge for that component.

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59177, Oct. 8, 2008]

Compliance Requirements for Owners and Operators

§ 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

(a) If you are an owner or operator of a stationary SI internal combustion engine that is manufactured after July 1, 2008, and must comply with the emission standards specified in § 60.4233(a) through (c), you must comply by purchasing an engine certified to the emission standards in § 60.4231(a) through (c), as applicable, for the same engine class and maximum engine power. In addition, you must meet one of the requirements specified in (a)(1) and (2) of this section.

(1) If you operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, you must keep records of conducted maintenance to demonstrate compliance, but no performance testing is required if you are an owner or operator. You must also meet the requirements as specified in 40 CFR part 1068, subparts A through D, as they apply to you. If you adjust engine settings according to and consistent with the manufacturer's instructions, your stationary SI internal combustion engine will not be considered out of compliance.

(2) If you do not operate and maintain the certified stationary SI internal combustion engine and control device according to the manufacturer's emission-related written instructions, your engine will be considered a non-certified engine, and you must demonstrate compliance according to (a)(2)(i) through (iii) of this section, as appropriate.

(i) If you are an owner or operator of a stationary SI internal combustion engine less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator.

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup to demonstrate compliance.

(iii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test within 1 year of engine startup and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

(b) If you are an owner or operator of a stationary SI internal combustion engine and must comply with the emission standards specified in § 60.4233(d) or (e), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) and (2) of this section.

(1) Purchasing an engine certified according to procedures specified in this subpart, for the same model year and demonstrating compliance according to one of the methods specified in paragraph (a) of this section.

(2) Purchasing a non-certified engine and demonstrating compliance with the emission standards specified in § 60.4233(d) or (e) and according to the requirements specified in § 60.4244, as applicable, and according to paragraphs (b)(2)(i) and (ii) of this section.

(i) If you are an owner or operator of a stationary SI internal combustion engine greater than 25 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance.

(ii) If you are an owner or operator of a stationary SI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test and conduct subsequent performance testing every 8,760 hours or 3 years, whichever comes first, thereafter to demonstrate compliance.

(c) If you are an owner or operator of a stationary SI internal combustion engine that must comply with the emission standards specified in § 60.4233(f), you must demonstrate compliance according paragraph (b)(2)(i) or (ii) of this section, except that if you comply according to paragraph (b)(2)(i) of this section, you demonstrate that your non-certified engine complies with the emission standards specified in § 60.4233(f).

(d) Emergency stationary ICE may be operated for the purpose of maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited.

(e) Owners and operators of stationary SI natural gas fired engines may operate their engines using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the emission standards of § 60.4233.

(f) If you are an owner or operator of a stationary SI internal combustion engine that is less than or equal to 500 HP and you purchase a non-certified engine or you do not operate and maintain your certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, you are required to perform initial performance testing as indicated in this section, but you are not required to conduct subsequent performance testing unless the stationary engine is rebuilt or undergoes major repair or maintenance. A rebuilt stationary SI ICE means an engine that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(g) It is expected that air-to-fuel ratio controllers will be used with the operation of three-way catalysts/non-selective catalytic reduction. The AFR controller must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

(h) If you are an owner/operator of an stationary SI internal combustion engine with maximum engine power greater than or equal to 500 HP that is manufactured after July 1, 2007 and before July 1, 2008, and must comply with the emission standards specified in sections 60.4233(b) or (c), you must comply by one of the methods specified in paragraphs (h)(1) through (h)(4) of this section.

(1) Purchasing an engine certified according to 40 CFR part 1048. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(i) If you are an owner or operator of a modified or reconstructed stationary SI internal combustion engine and must comply with the emission standards specified in § 60.4233(f), you must demonstrate compliance according to one of the methods specified in paragraphs (i)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in § 60.4233(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in § 60.4244. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

[73 FR 3591, Jan. 18, 2008, as amended at 76 FR 37974, June 28, 2011]

Testing Requirements for Owners and Operators

§ 60.4244 What test methods and other procedures must I use if I am an owner or operator of a stationary SI internal combustion engine?

Owners and operators of stationary SI ICE who conduct performance tests must follow the procedures in paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and according to the requirements in § 60.8 and under the specific conditions that are specified by Table 2 to this subpart.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 60.8(c). If your stationary SI internal combustion engine is non-operational, you do not need to startup the engine solely to conduct a performance test; however, you must conduct the performance test immediately upon startup of the engine.

(c) You must conduct three separate test runs for each performance test required in this section, as specified in § 60.8(f). Each test run must be conducted within 10 percent of 100 percent peak (or the highest achievable) load and last at least 1 hour.

(d) To determine compliance with the NO_X mass per unit output emission limitation, convert the concentration of NO_X in the engine exhaust using Equation 1 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{HP-hr} \quad \text{(Eq. 1)}$$

Where:

ER = Emission rate of NO_X in g/HP-hr.

C_d = Measured NO_X concentration in parts per million by volume (ppmv).

1.912×10^{-3} = Conversion constant for ppm NO_X to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, horsepower-hour (HP-hr).

(e) To determine compliance with the CO mass per unit output emission limitation, convert the concentration of CO in the engine exhaust using Equation 2 of this section:

$$ER = \frac{C_d \times 1.164 \times 10^{-3} \times Q \times T}{HP-hr} \quad \text{(Eq. 2)}$$

Where:

ER = Emission rate of CO in g/HP-hr.

C_d = Measured CO concentration in ppmv.

1.164×10^{-3} = Conversion constant for ppm CO to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(f) For purposes of this subpart, when calculating emissions of VOC, emissions of formaldehyde should not be included. To determine compliance with the VOC mass per unit output emission limitation, convert the concentration of VOC in the engine exhaust using Equation 3 of this section:

$$ER = \frac{C_d \times 1.833 \times 10^{-3} \times Q \times T}{HP - hr} \qquad \text{(Eq. 3)}$$

Where:

ER = Emission rate of VOC in g/HP-hr.

C_d = VOC concentration measured as propane in ppmv.

1.833×10^{-3} = Conversion constant for ppm VOC measured as propane, to grams per standard cubic meter at 20 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meters per hour, dry basis.

T = Time of test run, in hours.

HP-hr = Brake work of the engine, in HP-hr.

(g) If the owner/operator chooses to measure VOC emissions using either Method 18 of 40 CFR part 60, appendix A, or Method 320 of 40 CFR part 63, appendix A, then it has the option of correcting the measured VOC emissions to account for the potential differences in measured values between these methods and Method 25A. The results from Method 18 and Method 320 can be corrected for response factor differences using Equations 4 and 5 of this section. The corrected VOC concentration can then be placed on a propane basis using Equation 6 of this section.

$$RF_i = \frac{C_{Mi}}{C_{Ai}} \qquad \text{(Eq. 4)}$$

Where:

RF_i = Response factor of compound i when measured with EPA Method 25A.

$C_{M\ i}$ = Measured concentration of compound i in ppmv as carbon.

$C_{A\ i}$ = True concentration of compound i in ppmv as carbon.

$$C_{icorr} = RF_i \times C_{imeas} \qquad \text{(Eq. 5)}$$

Where:

$C_{i\ corr}$ = Concentration of compound i corrected to the value that would have been measured by EPA Method 25A, ppmv as carbon.

$C_{i\ meas}$ = Concentration of compound i measured by EPA Method 320, ppmv as carbon.

$$C_{Peq} = 0.6098 \times C_{icorr} \qquad \text{(Eq. 6)}$$

Where:

C_{Peq} = Concentration of compound i in mg of propane equivalent per DSCM.

Notification, Reports, and Records for Owners and Operators

§ 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

Owners or operators of stationary SI ICE must meet the following notification, reporting and recordkeeping requirements.

(a) Owners and operators of all stationary SI ICE must keep records of the information in paragraphs (a)(1) through (4) of this section.

(1) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(2) Maintenance conducted on the engine.

(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable.

(4) If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to § 60.4243(a)(2), documentation that the engine meets the emission standards.

(b) For all stationary SI emergency ICE greater than or equal to 500 HP manufactured on or after July 1, 2010, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than or equal to 130 HP and less than 500 HP manufactured on or after July 1, 2011 that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. For all stationary SI emergency ICE greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, that do not meet the standards applicable to non-emergency engines, the owner or operator of must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation.

(c) Owners and operators of stationary SI ICE greater than or equal to 500 HP that have not been certified by an engine manufacturer to meet the emission standards in § 60.4231 must submit an initial notification as required in § 60.7(a)(1). The notification must include the information in paragraphs (c)(1) through (5) of this section.

(1) Name and address of the owner or operator;

(2) The address of the affected source;

(3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(4) Emission control equipment; and

(5) Fuel used.

(d) Owners and operators of stationary SI ICE that are subject to performance testing must submit a copy of each performance test as conducted in § 60.4244 within 60 days after the test has been completed.

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59177, Oct. 8, 2008]

General Provisions

§ 60.4246 What parts of the General Provisions apply to me?

Table 3 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.

Mobile Source Provisions

§ 60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Manufacturers certifying to emission standards in 40 CFR part 90, including manufacturers certifying emergency engines below 130 HP, must meet the provisions of 40 CFR part 90. Manufacturers certifying to emission standards in 40 CFR part 1054 must meet the provisions of 40 CFR part 1054. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060 to the extent they apply to equipment manufacturers.

(b) Manufacturers required to certify to emission standards in 40 CFR part 1048 must meet the provisions of 40 CFR part 1048. Manufacturers certifying to emission standards in 40 CFR part 1048 pursuant to the voluntary certification program must meet the requirements in Table 4 to this subpart as well as the standards in 40 CFR 1048.101.

(c) For manufacturers of stationary SI internal combustion engines participating in the voluntary certification program and certifying engines to Table 1 to this subpart, Table 4 to this subpart shows which parts of the mobile source provisions in 40 CFR parts 1048, 1065, and 1068 apply to you. Compliance with the deterioration factor provisions under 40 CFR 1048.205(n) and 1048.240 will be required for engines built new on and after January 1, 2010. Prior to January 1, 2010, manufacturers of stationary internal combustion engines participating in the voluntary certification program have the option to develop their own deterioration factors based on an engineering analysis.

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59177, Oct. 8, 2008]

Definitions

§ 60.4248 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) are given in 40 CFR 90.105, 40 CFR 1054.107, and 40 CFR 1060.101, as appropriate. The values for certified emissions life for stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) certified to 40 CFR part 1048 are given in 40 CFR 1048.101(g). The certified emissions life for stationary SI ICE with a maximum engine power greater than 75 KW (100 HP) certified under the voluntary manufacturer certification program of this subpart is 5,000 hours or 7 years, whichever comes first. You may request in your application for certification that we approve a shorter certified emissions life for an engine family. We may approve a shorter certified emissions life, in hours of engine operation but not in years, if we determine that these engines will rarely operate longer than the shorter certified emissions life. If engines identical to those in the engine family have already been produced and are in use, your demonstration must include documentation from such in-use engines. In other cases, your demonstration must include an engineering analysis of information equivalent to such in-use data, such as data from research engines or similar engine models that are already in production. Your demonstration must also include any overhaul interval that you recommend, any mechanical warranty that you offer for the engine or its components, and any relevant customer design specifications. Your demonstration may include any other relevant information. The certified emissions life value may not be shorter than any of the following:

(i) 1,000 hours of operation.

(ii) Your recommended overhaul interval.

(iii) Your mechanical warranty for the engine.

Certified stationary internal combustion engine means an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in this part, or of 40 CFR part 90, 40 CFR part 1048, or 40 CFR part 1054, as appropriate.

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

(1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.

(2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.

(3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and carbon dioxide (CO_2).

Emergency stationary internal combustion engine means any stationary internal combustion engine whose operation is limited to emergency situations and required testing and maintenance. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc. Stationary SI ICE used for peak shaving are not considered emergency stationary ICE. Stationary ICE used to supply power to an electric grid or that supply power as part of a financial arrangement with another entity are not considered to be emergency engines.

Engine manufacturer means the manufacturer of the engine. See the definition of “manufacturer” in this section.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2 .

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining or natural gas production.

Manufacturer has the meaning given in section 216(1) of the Clean Air Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1048.801.

Model year means the calendar year in which an engine is manufactured (see “date of manufacture”), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see “date of manufacture”), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see “date of manufacture”).

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Pipeline-quality natural gas means a naturally occurring fluid mixture of hydrocarbons (e.g., methane, ethane, or propane) produced in geological formations beneath the Earth's surface that maintains a gaseous state at standard atmospheric temperature and pressure under ordinary conditions, and which is provided by a supplier through a pipeline. Pipeline-quality natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 950 and 1,100 British thermal units per standard cubic foot.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to June 12, 2006, with passive emission control technology for NO_X (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to either: a gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Stationary internal combustion engine test cell/stand means an engine test cell/stand, as defined in 40 CFR part 63, subpart PPPPP, that tests stationary ICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Subpart means 40 CFR part 60, subpart JJJJ.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

Volatile organic compounds means volatile organic compounds as defined in 40 CFR 51.100(s).

Voluntary certification program means an optional engine certification program that manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to participate in to certify their engines to the emission standards in § 60.4231(d) or (e), as applicable.

[73 FR 3591, Jan. 18, 2008, as amended by 73 FR 59177, Oct. 8, 2008; 76 FR 37974, June 28, 2011]

Table 1 to Subpart JJJJ of Part 60—NO_X , CO, and VOC Emission Standards for Stationary Non-Emergency SI Engines ≥100 HP (Except Gasoline and Rich Burn LPG), Stationary SI Landfill/Digester Gas Engines, and Stationary Emergency Engines >25 HP

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards [a]					
			g/HP-hr			ppmvd at 15% O_2		
			NO_X	CO	VOC [d]	NO_X	CO	VOC [d]
Non-Emergency SI Natural Gas [b] and Non-Emergency SI Lean Burn LPG [b]	100≤HP<500	7/1/2008	2.0	4.0	1.0	160	540	86
		1/1/2011	1.0	2.0	0.7	82	270	60
Non-Emergency SI Lean Burn Natural Gas and LPG	500≤HP<1,350	1/1/2008	2.0	4.0	1.0	160	540	86
		7/1/2010	1.0	2.0	0.7	82	270	60

Engine type and fuel	Maximum engine power	Manufacture date	Emission standards [a]					
			g/HP-hr			ppmvd at 15% O_2		
			NO_X	CO	VOC [d]	NO_X	CO	VOC [d]
Non-Emergency SI Natural Gas and Non-Emergency SI Lean Burn LPG (except lean burn 500≤HP<1,350)	HP≥500	7/1/2007	2.0	4.0	1.0	160	540	86
	HP≥500	7/1/2010	1.0	2.0	0.7	82	270	60
Landfill/Digester Gas (except lean burn 500≤HP<1,350)	HP<500	7/1/2008	3.0	5.0	1.0	220	610	80
		1/1/2011	2.0	5.0	1.0	150	610	80
	HP≥500	7/1/2007	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Landfill/Digester Gas Lean Burn	500≤HP<1,350	1/1/2008	3.0	5.0	1.0	220	610	80
		7/1/2010	2.0	5.0	1.0	150	610	80
Emergency	25<HP<130	1/1/2009	[c] 10	387	N/A	N/A	N/A	N/A
	HP≥130		2.0	4.0	1.0	160	540	86

[a] Owners and operators of stationary non-certified SI engines may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15 percent O_2.

[b] Owners and operators of new or reconstructed non-emergency lean burn SI stationary engines with a site rating of greater than or equal to 250 brake HP located at a major source that are meeting the requirements of 40 CFR part 63, subpart ZZZZ, Table 2a do not have to comply with the CO emission standards of Table 1 of this subpart.

[c] The emission standards applicable to emergency engines between 25 HP and 130 HP are in terms of NO_X+ HC.

[d] For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

[76 FR 37975, June 28, 2011]

Table 2 to Subpart JJJJ of Part 60—Requirements for Performance Tests

As stated in § 60.4244, you must comply with the following requirements for performance tests within 10 percent of 100 percent peak (or the highest achievable) load:

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary SI internal combustion engine demonstrating compliance according to § 60.4244	a. limit the concentration of NO_X in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, Appendix A or ASTM Method D6522-00(2005)[a]	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2 concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B[b] of 40 CFR part 60, appendix A or ASTM Method D6522-00(2005)[a]	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 19 of 40 CFR part 60	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(c) Measurements to determine moisture must be made at the same time as the measurement for NO_X concentration.
		v. Measure NO_X at the exhaust of the	(5) Method 7E of 40 CFR part 60, appendix	(d) Results of this test consist of the average

For each	Complying with the requirement to	You must	Using	According to the following requirements
		stationary internal combustion engine	A, Method D6522-00(2005)[a], Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	of the three 1-hour or longer runs.
	b. limit the concentration of CO in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, Appendix A or ASTM Method D6522-00(2005)[a]	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B[b]of 40 CFR part 60, appendix A or ASTM Method D6522-00(2005)[a]	(b) Measurements to determine O_2concentration must be made at the same time as the measurements for CO concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 19 of 40 CFR part 60	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(c) Measurements to determine moisture must be made at the same time as the measurement for CO concentration.
		v. Measure CO at the exhaust of the	(5) Method 10 of 40 CFR part 60, appendix A,	(d) Results of this test consist of the average

For each	Complying with the requirement to	You must	Using	According to the following requirements
		stationary internal combustion engine	ASTM Method D6522-00(2005)[a], Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	of the three 1-hour or longer runs.
	c. limit the concentration of VOC in the stationary SI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, Appendix A	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location;	(2) Method 3, 3A, or 3B[b]of 40 CFR part 60, appendix A or ASTM Method D6522-00(2005)[a]	(b) Measurements to determine O_2concentration must be made at the same time as the measurements for VOC concentration.
		iii. If necessary, determine the exhaust flowrate of the stationary internal combustion engine exhaust;	(3) Method 2 or 19 of 40 CFR part 60	
		iv. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(4) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(c) Measurements to determine moisture must be made at the same time as the measurement for VOC concentration.
		v. Measure VOC at the exhaust of the	(5) Methods 25A and 18 of 40 CFR part 60,	(d) Results of this test consist of the average

For each	Complying with the requirement to	You must	Using	According to the following requirements
		stationary internal combustion engine	appendix A, Method 25A with the use of a methane cutter as described in 40 CFR 1065.265, Method 18 or 40 CFR part 60, appendix A[c,d], Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	of the three 1-hour or longer runs.

[76 FR 37975, June 28, 2011]

Table 3 to Subpart JJJJ of Part 60—Applicability of General Provisions to Subpart JJJJ

[As stated in § 60.4246, you must comply with the following applicable General Provisions]

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1	General applicability of the General Provisions	Yes	
§ 60.2	Definitions	Yes	Additional terms defined in § 60.4248.
§ 60.3	Units and abbreviations	Yes	
§ 60.4	Address	Yes	
§ 60.5	Determination of construction or modification	Yes	
§ 60.6	Review of plans	Yes	
§ 60.7	Notification and Recordkeeping	Yes	Except that § 60.7 only applies as specified in § 60.4245.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.8	Performance tests	Yes	Except that § 60.8 only applies to owners and operators who are subject to performance testing in subpart JJJJ.
§ 60.9	Availability of information	Yes	
§ 60.10	State Authority	Yes	
§ 60.11	Compliance with standards and maintenance requirements	Yes	Requirements are specified in subpart JJJJ.
§ 60.12	Circumvention	Yes	
§ 60.13	Monitoring requirements	No	
§ 60.14	Modification	Yes	
§ 60.15	Reconstruction	Yes	
§ 60.16	Priority list	Yes	
§ 60.17	Incorporations by reference	Yes	
§ 60.18	General control device requirements	No	
§ 60.19	General notification and reporting requirements	Yes	

Table 4 to Subpart JJJJ of Part 60—Applicability of Mobile Source Provisions for Manufacturers Participating in the Voluntary Certification Program and Certifying Stationary SI ICE to Emission Standards in Table 1 of Subpart JJJJ

[As stated in § 60.4247, you must comply with the following applicable mobile source provisions if you are a manufacturer participating in the voluntary certification program and certifying stationary SI ICE to emission standards in Table 1 of subpart JJJJ]

Mobile source provisions citation	**Subject of citation**	**Applies to subpart**	**Explanation**
1048 subpart A	Overview and Applicability	Yes	
1048 subpart B	Emission Standards and Related Requirements	Yes	Except for the specific sections below.
1048.101	Exhaust Emission Standards	No	
1048.105	Evaporative Emission Standards	No	
1048.110	Diagnosing Malfunctions	No	
1048.140	Certifying Blue Sky Series Engines	No	
1048.145	Interim Provisions	No	
1048 subpart C	Certifying Engine Families	Yes	Except for the specific sections below.
1048.205(b)	AECD reporting	Yes	
1048.205(c)	OBD Requirements	No	
1048.205(n)	Deterioration Factors	Yes	Except as indicated in 60.4247(c).
1048.205(p)(1)	Deterioration Factor Discussion	Yes	
1048.205(p)(2)	Liquid Fuels as they require	No	
1048.240(b)(c)(d)	Deterioration Factors	Yes	
1048 subpart D	Testing Production-Line Engines	Yes	
1048 subpart E	Testing In-Use Engines	No	
1048 subpart F	Test Procedures	Yes	

Mobile source provisions citation	Subject of citation	Applies to subpart	Explanation
1065.5(a)(4)	Raw sampling (refers reader back to the specific emissions regulation for guidance)	Yes	
1048 subpart G	Compliance Provisions	Yes	
1048 subpart H	Reserved		
1048 subpart I	Definitions and Other Reference Information	Yes	
1048 appendix I and II	Yes		
1065 (all subparts)	Engine Testing Procedures	Yes	Except for the specific section below.
1065.715	Test Fuel Specifications for Natural Gas	No	
1068 (all subparts)	General Compliance Provisions for Nonroad Programs	Yes	Except for the specific sections below.
1068.245	Hardship Provisions for Unusual Circumstances	No	
1068.250	Hardship Provisions for Small-Volume Manufacturers	No	
1068.255	Hardship Provisions for Equipment Manufacturers and Secondary Engine Manufacturers	No	

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Attachment B
to MSOP No. M133-33057-00005

Electronic Code of Federal Regulations

Title 40: Protection of Environment

Part 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

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

What This Subpart Covers

§ 60.4200 Am I subject to this subpart?

(a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.

(1) Manufacturers of stationary CI ICE with a displacement of less than 30 liters per cylinder where the model year is:

(i) 2007 or later, for engines that are not fire pump engines;

(ii) The model year listed in Table 3 to this subpart or later model year, for fire pump engines.

(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:

(i) Manufactured after April 1, 2006, and are not fire pump engines, or

(ii) Manufactured as a certified National Fire Protection Association (NFPA) fire pump engine after July 1, 2006.

(3) Owners and operators of any stationary CI ICE that are modified or reconstructed after July 11, 2005 and any person that modifies or reconstructs any stationary CI ICE after July 11, 2005.

(4) The provisions of § 60.4208 of this subpart are applicable to all owners and operators of stationary CI ICE that commence construction after July 11, 2005.

(b) The provisions of this subpart are not applicable to stationary CI ICE being tested at a stationary CI ICE test cell/stand.

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

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR part 89, subpart J and 40 CFR part 94, subpart J, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

(e) Owners and operators of facilities with CI ICE that are acting as temporary replacement units and that are located at a stationary source for less than 1 year and that have been properly certified as meeting the standards that would be applicable to such engine under the appropriate nonroad engine provisions, are not required to meet any other provisions under this subpart with regard to such engines.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

Emission Standards for Manufacturers

§ 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 89.112, 40 CFR 89.113, 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same model year and maximum engine power.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 through 2010 model year non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(c) Stationary CI internal combustion engine manufacturers must certify their 2011 model year and later non-emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 40 CFR 1039.102, 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, and 40 CFR 1039.115, as applicable, for all pollutants, for the same maximum engine power.

(d) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(3) Their 2013 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(e) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the certification emission standards and other requirements for new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.110, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year non-emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(f) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary non-emergency CI ICE identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 1 to 40 CFR 1042.1 identifies 40 CFR part 1042 as being applicable, 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the Federal Aid Highway System (FAHS); and

(2) Marine offshore installations.

(g) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (e) of this section that are applicable to the model year, maximum engine power, and displacement of the reconstructed stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37967, June 28, 2011]

§ 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.

(1) For engines with a maximum engine power less than 37 KW (50 HP):

(i) The certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants for model year 2007 engines, and

(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines.

(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.

(b) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power greater than 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (b)(1) through (2) of this section.

(1) For 2007 through 2010 model years, the emission standards in table 1 to this subpart, for all pollutants, for the same maximum engine power.

(2) For 2011 model year and later, the certification emission standards for new nonroad CI engines for engines of the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants.

(c) [Reserved]

(d) Beginning with the model years in table 3 to this subpart, stationary CI internal combustion engine manufacturers must certify their fire pump stationary CI ICE to the emission standards in table 4 to this subpart, for all pollutants, for the same model year and NFPA nameplate power.

(e) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE that are not fire pump engines to the certification emission standards for new marine CI engines in 40 CFR 94.8, as applicable, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2007 model year through 2012 emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder;

(2) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder;

(3) Their 2013 model year emergency stationary CI ICE with a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder; and

(4) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power greater than or equal to 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(f) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE to the certification emission standards and other requirements applicable to Tier 3 new marine CI engines in 40 CFR 1042.101, 40 CFR 1042.107, 40 CFR 1042.115, 40 CFR 1042.120, and 40 CFR 1042.145, for all pollutants, for the same displacement and maximum engine power:

(1) Their 2013 model year and later emergency stationary CI ICE with a maximum engine power less than 3,700 KW (4,958 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 15 liters per cylinder; and

(2) Their 2014 model year and later emergency stationary CI ICE with a maximum engine power less than 2,000 KW (2,682 HP) and a displacement of greater than or equal to 15 liters per cylinder and less than 30 liters per cylinder.

(g) Notwithstanding the requirements in paragraphs (a) through (d) of this section, stationary emergency CI internal combustion engines identified in paragraphs (a) and (c) may be certified to the provisions of 40 CFR part 94 or, if Table 2 to 40 CFR 1042.101 identifies Tier 3 standards as being applicable, the requirements applicable to Tier 3 engines in 40 CFR part 1042, if the engines will be used solely in either or both of the following locations:

(1) Areas of Alaska not accessible by the FAHS; and

(2) Marine offshore installations.

(h) Notwithstanding the requirements in paragraphs (a) through (f) of this section, stationary CI internal combustion engine manufacturers are not required to certify reconstructed engines; however manufacturers may elect to do so. The reconstructed engine must be certified to the emission standards specified in paragraphs (a) through (f) of this section that are applicable to the model year, maximum engine power and displacement of the reconstructed emergency stationary CI ICE.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011]

§ 60.4203 How long must my engines meet the emission standards if I am a manufacturer of stationary CI internal combustion engines?

Engines manufactured by stationary CI internal combustion engine manufacturers must meet the emission standards as required in §§ 60.4201 and 60.4202 during the certified emissions life of the engines.

[76 FR 37968, June 28, 2011]

Emission Standards for Owners and Operators

§ 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder must comply with the emission standards for new CI engines in § 60.4201 for their 2007 model year and later stationary CI ICE, as applicable.

(c) Owners and operators of non-emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the following requirements:

(1) For engines installed prior to January 1, 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 grams per kilowatt-hour (g/KW-hr) (12.7 grams per horsepower-hr (g/HP-hr)) when maximum engine speed is less than 130 revolutions per minute (rpm);

(ii) $45 \cdot n^{-0.2}$ g/KW-hr ($34 \cdot n^{-0.2}$ g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012 and before January 1, 2016, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $44 \cdot n^{-0.23}$ g/KW-hr ($33 \cdot n^{-0.23}$ g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) For engines installed on or after January 1, 2016, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following:

(i) 3.4 g/KW-hr (2.5 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) $9.0 \cdot n^{-0.20}$ g/KW-hr ($6.7 \cdot n^{-0.20}$ g/HP-hr) where n (maximum engine speed) is 130 or more but less than 2,000 rpm; and

(iii) 2.0 g/KW-hr (1.5 g/HP-hr) where maximum engine speed is greater than or equal to 2,000 rpm.

(4) Reduce particulate matter (PM) emissions by 60 percent or more, or limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.15 g/KW-hr (0.11 g/HP-hr).

(d) Owners and operators of non-emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the not-to-exceed (NTE) standards as indicated in § 60.4212.

(e) Owners and operators of any modified or reconstructed non-emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed non-emergency stationary CI ICE that are specified in paragraphs (a) through (d) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37968, June 28, 2011]

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards in 40 CFR 94.8(a)(1).

(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in § 60.4202, for all pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.

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

(d) Owners and operators of emergency stationary CI engines with a displacement of greater than or equal to 30 liters per cylinder must meet the requirements in this section.

(1) For engines installed prior to January 1, 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) 45 · n−0.2 g/KW-hr (34 · n−0.2 g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/kW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) 44 · n−0.23 g/KW-hr (33 · n−0.23 g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

(e) Owners and operators of emergency stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests in-use must meet the NTE standards as indicated in § 60.4212.

(f) Owners and operators of any modified or reconstructed emergency stationary CI ICE subject to this subpart must meet the emission standards applicable to the model year, maximum engine power, and displacement of the modified or reconstructed CI ICE that are specified in paragraphs (a) through (e) of this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§ 60.4206 How long must I meet the emission standards if I am an owner or operator of a stationary CI internal combustion engine?

Owners and operators of stationary CI ICE must operate and maintain stationary CI ICE that achieve the emission standards as required in §§ 60.4204 and 60.4205 over the entire life of the engine.

[76 FR 37969, June 28, 2011]

Fuel Requirements for Owners and Operators

§ 60.4207 What fuel requirements must I meet if I am an owner or operator of a stationary CI internal combustion engine subject to this subpart?

(a) Beginning October 1, 2007, owners and operators of stationary CI ICE subject to this subpart that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(a).

(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted.

(c) [Reserved]

(d) Beginning June 1, 2012, owners and operators of stationary CI ICE subject to this subpart with a displacement of greater than or equal to 30 liters per cylinder are no longer subject to the requirements of paragraph (a) of this section, and must use fuel that meets a maximum per-gallon sulfur content of 1,000 parts per million (ppm).

(e) Stationary CI ICE that have a national security exemption under § 60.4200(d) are also exempt from the fuel requirements in this section.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

Other Requirements for Owners and Operators

§ 60.4208 What is the deadline for importing or installing stationary CI ICE produced in previous model years?

(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.

(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.

(c) After December 31, 2014, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 19 KW (25 HP) and less than 56 KW (75 HP) that do not meet the applicable requirements for 2013 model year non-emergency engines.

(d) After December 31, 2013, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 56 KW (75 HP) and less than 130 KW (175 HP) that do not meet the applicable requirements for 2012 model year non-emergency engines.

(e) After December 31, 2012, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 130 KW (175 HP), including those above 560 KW (750 HP), that do not meet the applicable requirements for 2011 model year non-emergency engines.

(f) After December 31, 2016, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power of greater than or equal to 560 KW (750 HP) that do not meet the applicable requirements for 2015 model year non-emergency engines.

(g) After December 31, 2018, owners and operators may not install non-emergency stationary CI ICE with a maximum engine power greater than or equal to 600 KW (804 HP) and less than 2,000 KW (2,680 HP) and a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that do not meet the applicable requirements for 2017 model year non-emergency engines.

(h) In addition to the requirements specified in §§ 60.4201, 60.4202, 60.4204, and 60.4205, it is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified in paragraphs (a) through (g) of this section after the dates specified in paragraphs (a) through (g) of this section.

(i) The requirements of this section do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§ 60.4209   What are the monitoring requirements if I am an owner or operator of a stationary CI internal combustion engine?

If you are an owner or operator, you must meet the monitoring requirements of this section. In addition, you must also meet the monitoring requirements specified in § 60.4211.

(a) If you are an owner or operator of an emergency stationary CI internal combustion engine that does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter prior to startup of the engine.

(b) If you are an owner or operator of a stationary CI internal combustion engine equipped with a diesel particulate filter to comply with the emission standards in § 60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

Compliance Requirements

§ 60.4210   What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in § 60.4201(a) through (c) and § 60.4202(a), (b) and (d) using the certification procedures required in 40 CFR part 89, subpart B, or 40 CFR part 1039, subpart C, as applicable, and must test their engines as specified in those parts. For the purposes of this subpart, engines certified to the standards in table 1 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89. For the purposes of this subpart, engines certified to the standards in table 4 to this subpart shall be subject to the same requirements as engines certified to the standards in 40 CFR part 89, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

(b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in § 60.4201(d) and (e) and § 60.4202(e) and (f) using the certification procedures required in 40 CFR part 94, subpart C, or 40 CFR part 1042, subpart C, as applicable, and must test their engines as specified in 40 CFR part 94 or 1042, as applicable.

(c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 1039.125, 1039.130, and 1039.135, and 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 89, 40 CFR part 94 or 40 CFR part 1042 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.

(1) Stationary CI internal combustion engines manufactured from January 1, 2006 to March 31, 2006 (January 1, 2006 to June 30, 2006 for fire pump engines), other than those that are part of certified engine families under the nonroad CI engine regulations, must be labeled according to 40 CFR 1039.20.

(2) Stationary CI internal combustion engines manufactured from April 1, 2006 to December 31, 2006 (or, for fire pump engines, July 1, 2006 to December 31 of the year preceding the year listed in table 3 to this subpart) must be labeled according to paragraphs (c)(2)(i) through (iii) of this section:

(i) Stationary CI internal combustion engines that are part of certified engine families under the nonroad regulations must meet the labeling requirements for nonroad CI engines, but do not have to meet the labeling requirements in 40 CFR 1039.20.

(ii) Stationary CI internal combustion engines that meet Tier 1 requirements (or requirements for fire pumps) under this subpart, but do not meet the requirements applicable to nonroad CI engines must be labeled according to 40 CFR 1039.20. The engine manufacturer may add language to the label clarifying that the engine meets Tier 1 requirements (or requirements for fire pumps) of this subpart.

(iii) Stationary CI internal combustion engines manufactured after April 1, 2006 that do not meet Tier 1 requirements of this subpart, or fire pumps engines manufactured after July 1, 2006 that do not meet the requirements for fire pumps under this subpart, may not be used in the U.S. If any such engines are manufactured in the U.S. after April 1, 2006 (July 1, 2006 for fire pump engines), they must be exported or must be brought into compliance with the appropriate standards prior to initial operation. The export provisions of 40 CFR 1068.230 would apply to engines for export and the manufacturers must label such engines according to 40 CFR 1068.230.

(3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.

(i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate.

(ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR parts 89, 94, 1039 or 1042, as appropriate, but the words “stationary” must be included instead of “nonroad” or “marine” on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.

(iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.

(d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR parts 89, 94, 1039 or 1042 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts.

(e) Manufacturers of engine families discussed in paragraph (d) of this section may meet the labeling requirements referred to in paragraph (c) of this section for stationary CI ICE by either adding a separate label containing the information required in paragraph (c) of this section or by adding the words “and stationary” after the word “nonroad” or “marine,” as appropriate, to the label.

(f) Starting with the model years shown in table 5 to this subpart, stationary CI internal combustion engine manufacturers must add a permanent label stating that the engine is for stationary emergency use only to each new emergency stationary CI internal combustion engine greater than or equal to 19 KW (25 HP) that meets all the emission standards for emergency engines in § 60.4202 but does not meet all the emission standards for non-emergency engines in § 60.4201. The label must be added according to the labeling requirements specified in 40 CFR 1039.135(b). Engine manufacturers must specify in the owner's manual that operation of emergency engines is limited to emergency operations and required maintenance and testing.

(g) Manufacturers of fire pump engines may use the test cycle in table 6 to this subpart for testing fire pump engines and may test at the NFPA certified nameplate HP, provided that the engine is labeled as “Fire Pump Applications Only”.

(h) Engine manufacturers, including importers, may introduce into commerce uncertified engines or engines certified to earlier standards that were manufactured before the new or changed standards took effect until inventories are depleted, as long as such engines are part of normal inventory. For example, if the engine manufacturers' normal industry practice is to keep on hand a one-month supply of engines based on its projected sales, and a new tier of standards starts to apply for the 2009 model year, the engine manufacturer may manufacture engines based on the normal inventory requirements late in the 2008 model year, and sell those engines for installation. The engine manufacturer may not circumvent the provisions of §§ 60.4201 or 60.4202 by stockpiling engines that are built before new or changed standards take effect. Stockpiling of such engines beyond normal industry practice is a violation of this subpart.

(i) The replacement engine provisions of 40 CFR 89.1003(b)(7), 40 CFR 94.1103(b)(3), 40 CFR 94.1103(b)(4) and 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37969, June 28, 2011]

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) If you are an owner or operator and must comply with the emission standards specified in this subpart, you must do all of the following, except as permitted under paragraph (g) of this section:

(1) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions;

(2) Change only those emission-related settings that are permitted by the manufacturer; and

(3) Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as they apply to you.

(b) If you are an owner or operator of a pre-2007 model year stationary CI internal combustion engine and must comply with the emission standards specified in §§ 60.4204(a) or 60.4205(a), or if you are an owner or operator of a CI fire pump engine that is manufactured prior to the model years in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must demonstrate compliance according to one of the methods specified in paragraphs (b)(1) through (5) of this section.

(1) Purchasing an engine certified according to 40 CFR part 89 or 40 CFR part 94, as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.

(2) Keeping records of performance test results for each pollutant for a test conducted on a similar engine. The test must have been conducted using the same methods specified in this subpart and these methods must have been followed correctly.

(3) Keeping records of engine manufacturer data indicating compliance with the standards.

(4) Keeping records of control device vendor data indicating compliance with the standards.

(5) Conducting an initial performance test to demonstrate compliance with the emission standards according to the requirements specified in § 60.4212, as applicable.

(c) If you are an owner or operator of a 2007 model year and later stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(b) or § 60.4205(b), or if you are an owner or operator of a CI fire pump engine that is manufactured during or after the model year that applies to your fire pump engine power rating in table 3 to this subpart and must comply with the emission standards specified in § 60.4205(c), you must comply by purchasing an engine certified to the emission standards in § 60.4204(b), or § 60.4205(b) or (c), as applicable, for the same model year and maximum (or in the case of fire pumps, NFPA nameplate) engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of this section.

(d) If you are an owner or operator and must comply with the emission standards specified in § 60.4204(c) or § 60.4205(d), you must demonstrate compliance according to the requirements specified in paragraphs (d)(1) through (3) of this section.

(1) Conducting an initial performance test to demonstrate initial compliance with the emission standards as specified in § 60.4213.

(2) Establishing operating parameters to be monitored continuously to ensure the stationary internal combustion engine continues to meet the emission standards. The owner or operator must petition the Administrator for approval of operating parameters to be monitored continuously. The petition must include the information described in paragraphs (d)(2)(i) through (v) of this section.

(i) Identification of the specific parameters you propose to monitor continuously;

(ii) A discussion of the relationship between these parameters and NOX and PM emissions, identifying how the emissions of these pollutants change with changes in these parameters, and how limitations on these parameters will serve to limit NOX and PM emissions;

(iii) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(iv) A discussion identifying the methods and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(v) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(3) For non-emergency engines with a displacement of greater than or equal to 30 liters per cylinder, conducting annual performance tests to demonstrate continuous compliance with the emission standards as specified in § 60.4213.

(e) If you are an owner or operator of a modified or reconstructed stationary CI internal combustion engine and must comply with the emission standards specified in § 60.4204(e) or § 60.4205(f), you must demonstrate compliance according to one of the methods specified in paragraphs (e)(1) or (2) of this section.

(1) Purchasing, or otherwise owning or operating, an engine certified to the emission standards in § 60.4204(e) or § 60.4205(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in § 60.4212 or § 60.4213, as appropriate. The test must be conducted within 60 days after the engine commences operation after the modification or reconstruction.

(f) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f)(1) through (3) of this section. In order for the engine to be considered an emergency stationary ICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (3) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (3) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary ICE in emergency situations.

(2) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraph (f)(3) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.

(ii) Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraph (f)(3)(i) of this section, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

(ii) [Reserved]

(g) If you do not install, configure, operate, and maintain your engine and control device according to the manufacturer's emission-related written instructions, or you change emission-related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance as follows:

(1) If you are an owner or operator of a stationary CI internal combustion engine with maximum engine power less than 100 HP, you must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of such action.

(2) If you are an owner or operator of a stationary CI internal combustion engine greater than or equal to 100 HP and less than or equal to 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer.

(3) If you are an owner or operator of a stationary CI internal combustion engine greater than 500 HP, you must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within 1 year after you change emission-related settings in a way that is not permitted by the manufacturer. You must conduct subsequent performance testing every 8,760 hours of engine operation or 3 years, whichever comes first, thereafter to demonstrate compliance with the applicable emission standards.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37970, June 28, 2011; 78 FR 6695, Jan. 30, 2013]

Testing Requirements for Owners and Operators

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder who conduct performance tests pursuant to this subpart must do so according to paragraphs (a) through (e) of this section.

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder.

(b) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1039 must not exceed the not-to-exceed (NTE) standards for the same model year and maximum engine power as required in 40 CFR 1039.101(e) and 40 CFR 1039.102(g)(1), except as specified in 40 CFR 1039.104(d). This requirement starts when NTE requirements take effect for nonroad diesel engines under 40 CFR part 1039.

(c) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8, as applicable, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 89.112 or 40 CFR 94.8, as applicable, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \qquad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR 89.112 or 40 CFR 94.8, as applicable.

Alternatively, stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR 89.112 or 40 CFR 94.8 may follow the testing procedures specified in § 60.4213 of this subpart, as appropriate.

(d) Exhaust emissions from stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in § 60.4204(a), § 60.4205(a), or § 60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in § 60.4204(a), § 60.4205(a), or § 60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in § 60.4204(a), § 60.4205(a), or § 60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in § 60.4204(a), § 60.4205(a), or § 60.4205(c) may follow the testing procedures specified in § 60.4213, as appropriate.

(e) Exhaust emissions from stationary CI ICE that are complying with the emission standards for new CI engines in 40 CFR part 1042 must not exceed the NTE standards for the same model year and maximum engine power as required in 40 CFR 1042.101(c).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

§ 60.4213 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of greater than or equal to 30 liters per cylinder?

Owners and operators of stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder must conduct performance tests according to paragraphs (a) through (f) of this section.

(a) Each performance test must be conducted according to the requirements in § 60.8 and under the specific conditions that this subpart specifies in table 7. The test must be conducted within 10 percent of 100 percent peak (or the highest achievable) load.

(b) You may not conduct performance tests during periods of startup, shutdown, or malfunction, as specified in § 60.8(c).

(c) You must conduct three separate test runs for each performance test required in this section, as specified in § 60.8(f). Each test run must last at least 1 hour.

(d) To determine compliance with the percent reduction requirement, you must follow the requirements as specified in paragraphs (d)(1) through (3) of this section.

(1) You must use Equation 2 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \qquad \text{(Eq. 2)}$$

Where:

Ci = concentration of NOX or PM at the control device inlet,

Co = concentration of NOX or PM at the control device outlet, and

R = percent reduction of NOX or PM emissions.

(2) You must normalize the NOX or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO2) using the procedures described in paragraph (d)(3) of this section.

$$C_{adj} = C_d \frac{5.9}{20.9 - \%\, O_2} \qquad \text{(Eq. 3)}$$

Where:

Cadj = Calculated NOX or PM concentration adjusted to 15 percent O2 .

Cd = Measured concentration of NOX or PM, uncorrected.

5.9 = 20.9 percent O2 −15 percent O2 , the defined O2 correction value, percent.

%O2 = Measured O2 concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent O2 and CO2 concentration is measured in lieu of O2 concentration measurement, a CO2 correction factor is needed. Calculate the CO2 correction factor as described in paragraphs (d)(3)(i) through (iii) of this section.

(i) Calculate the fuel-specific Fo value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209_{F_d}}{F_c} \qquad \text{(Eq. 4)}$$

Where:

Fo = Fuel factor based on the ratio of O2 volume to the ultimate CO2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O2 , percent/100.

Fd = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm3 /J (dscf/106 Btu).

Fc = Ratio of the volume of CO2 produced to the gross calorific value of the fuel from Method 19, dsm3 /J (dscf/106 Btu).

(ii) Calculate the CO2 correction factor for correcting measurement data to 15 percent O2 , as follows:

$$X_{CO_2} = \frac{5.9}{F_o} \qquad \text{(Eq. 5)}$$

Where:

XCO2 = CO2 correction factor, percent.

5.9 = 20.9 percent O2 −15 percent O2 , the defined O2 correction value, percent.

(iii) Calculate the NOX and PM gas concentrations adjusted to 15 percent O2 using CO2 as follows:

$$C_{adj} = C_d \frac{X_{CO_2}}{\%CO_2} \qquad \text{(Eq. 6)}$$

Where:

Cadj = Calculated NOX or PM concentration adjusted to 15 percent O2 .

Cd = Measured concentration of NOX or PM, uncorrected.

%CO2 = Measured CO2 concentration, dry basis, percent.

(e) To determine compliance with the NOX mass per unit output emission limitation, convert the concentration of NOX in the engine exhaust using Equation 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{\text{KW-hour}} \qquad \text{(Eq. 7)}$$

Where:

ER = Emission rate in grams per KW-hour.

Cd = Measured NOX concentration in ppm.

1.912x10−3 = Conversion constant for ppm NOX to grams per standard cubic meter at 25 degrees Celsius.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Brake work of the engine, in KW-hour.

(f) To determine compliance with the PM mass per unit output emission limitation, convert the concentration of PM in the engine exhaust using Equation 8 of this section:

$$ER = \frac{C_{adj} \times Q \times T}{\text{KW-hour}} \qquad \text{(Eq. 8)}$$

Where:

ER = Emission rate in grams per KW-hour.

Cadj = Calculated PM concentration in grams per standard cubic meter.

Q = Stack gas volumetric flow rate, in standard cubic meter per hour.

T = Time of test run, in hours.

KW-hour = Energy output of the engine, in KW.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

Notification, Reports, and Records for Owners and Operators

§ 60.4214 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of non-emergency stationary CI ICE that are greater than 2,237 KW (3,000 HP), or have a displacement of greater than or equal to 10 liters per cylinder, or are pre-2007 model year engines that are greater than 130 KW (175 HP) and not certified, must meet the requirements of paragraphs (a)(1) and (2) of this section.

(1) Submit an initial notification as required in § 60.7(a)(1). The notification must include the information in paragraphs (a)(1)(i) through (v) of this section.

(i) Name and address of the owner or operator;

(ii) The address of the affected source;

(iii) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;

(iv) Emission control equipment; and

(v) Fuel used.

(2) Keep records of the information in paragraphs (a)(2)(i) through (iv) of this section.

(i) All notifications submitted to comply with this subpart and all documentation supporting any notification.

(ii) Maintenance conducted on the engine.

(iii) If the stationary CI internal combustion is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards.

(iv) If the stationary CI internal combustion is not a certified engine, documentation that the engine meets the emission standards.

(b) If the stationary CI internal combustion engine is an emergency stationary internal combustion engine, the owner or operator is not required to submit an initial notification. Starting with the model years in table 5 to this subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the owner or operator must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The owner must record the time of operation of the engine and the reason the engine was in operation during that time.

(c) If the stationary CI internal combustion engine is equipped with a diesel particulate filter, the owner or operator must keep records of any corrective action taken after the backpressure monitor has notified the owner or operator that the high backpressure limit of the engine is approached.

(d) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in § 60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 60.4211(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purposes specified in § 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in § 60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 60.4.

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013]

Special Requirements

§ 60.4215 What requirements must I meet for engines used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

(a) Stationary CI ICE with a displacement of less than 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the applicable emission standards in §§ 60.4202 and 60.4205.

(b) Stationary CI ICE that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are not required to meet the fuel requirements in § 60.4207.

(c) Stationary CI ICE with a displacement of greater than or equal to 30 liters per cylinder that are used in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands are required to meet the following emission standards:

(1) For engines installed prior to January 1, 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following:

(i) 17.0 g/KW-hr (12.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) 45 · n−0.2 g/KW-hr (34 · n−0.2 g/HP-hr) when maximum engine speed is 130 or more but less than 2,000 rpm, where n is maximum engine speed; and

(iii) 9.8 g/KW-hr (7.3 g/HP-hr) when maximum engine speed is 2,000 rpm or more.

(2) For engines installed on or after January 1, 2012, limit the emissions of NOX in the stationary CI internal combustion engine exhaust to the following:

(i) 14.4 g/KW-hr (10.7 g/HP-hr) when maximum engine speed is less than 130 rpm;

(ii) 44 · n−0.23 g/KW-hr (33 · n−0.23 g/HP-hr) when maximum engine speed is greater than or equal to 130 but less than 2,000 rpm and where n is maximum engine speed; and

(iii) 7.7 g/KW-hr (5.7 g/HP-hr) when maximum engine speed is greater than or equal to 2,000 rpm.

(3) Limit the emissions of PM in the stationary CI internal combustion engine exhaust to 0.40 g/KW-hr (0.30 g/HP-hr).

[71 FR 39172, July 11, 2006, as amended at 76 FR 37971, June 28, 2011]

§ 60.4216 What requirements must I meet for engines used in Alaska?

(a) Prior to December 1, 2010, owners and operators of stationary CI ICE with a displacement of less than 30 liters per cylinder located in areas of Alaska not accessible by the FAHS should refer to 40 CFR part 69 to determine the diesel fuel requirements applicable to such engines.

(b) Except as indicated in paragraph (c) of this section, manufacturers, owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in areas of Alaska not accessible by the FAHS may meet the requirements of this subpart by manufacturing and installing engines meeting the requirements of 40 CFR parts 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR parts 89 and 1039, as indicated in sections §§ 60.4201(f) and 60.4202(g) of this subpart.

(c) Manufacturers, owners and operators of stationary CI ICE that are located in areas of Alaska not accessible by the FAHS may choose to meet the applicable emission standards for emergency engines in § 60.4202 and § 60.4205, and not those for non-emergency engines in § 60.4201 and § 60.4204, except that for 2014 model year and later non-emergency CI ICE, the owner or operator of any such engine that was not certified as meeting Tier 4 PM standards, must meet the applicable requirements for PM in § 60.4201 and § 60.4204 or install a PM emission control device that achieves PM emission reductions of 85 percent, or 60 percent for engines with a displacement of greater than or equal to 30 liters per cylinder, compared to engine-out emissions.

(d) The provisions of § 60.4207 do not apply to owners and operators of pre-2014 model year stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS.

(e) The provisions of § 60.4208(a) do not apply to owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS until after December 31, 2009.

(f) The provisions of this section and § 60.4207 do not prevent owners and operators of stationary CI ICE subject to this subpart that are located in areas of Alaska not accessible by the FAHS from using fuels mixed with used lubricating oil, in volumes of up to 1.75 percent of the total fuel. The sulfur content of the used lubricating oil must be less than 200 parts per million. The used lubricating oil must meet the on-specification levels and properties for used oil in 40 CFR 279.11.

[76 FR 37971, June 28, 2011]

§ 60.4217 What emission standards must I meet if I am an owner or operator of a stationary internal combustion engine using special fuels?

Owners and operators of stationary CI ICE that do not use diesel fuel may petition the Administrator for approval of alternative emission standards, if they can demonstrate that they use a fuel that is not the fuel on which the manufacturer of the engine certified the engine and that the engine cannot meet the applicable standards required in § 60.4204 or § 60.4205 using such fuels and that use of such fuel is appropriate and reasonably necessary, considering cost, energy, technical feasibility, human health and environmental, and other factors, for the operation of the engine.

[76 FR 37972, June 28, 2011]

General Provisions

§ 60.4218 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 60.1 through 60.19 apply to you.

Definitions

§ 60.4219 What definitions apply to this subpart?

As used in this subpart, all terms not defined herein shall have the meaning given them in the CAA and in subpart A of this part.

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 94.9(a).

Combustion turbine means all equipment, including but not limited to the turbine, the fuel, air, lubrication and exhaust gas systems, control systems (except emissions control equipment), and any ancillary components and sub-components comprising any simple cycle combustion turbine, any regenerative/recuperative cycle combustion turbine, the combustion turbine portion of any cogeneration cycle combustion system, or the combustion turbine portion of any combined cycle steam/electric generating system.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Date of manufacture means one of the following things:

(1) For freshly manufactured engines and modified engines, date of manufacture means the date the engine is originally produced.

(2) For reconstructed engines, date of manufacture means the date the engine was originally produced, except as specified in paragraph (3) of this definition.

(3) Reconstructed engines are assigned a new date of manufacture if the fixed capital cost of the new and refurbished components exceeds 75 percent of the fixed capital cost of a comparable entirely new facility. An engine that is produced from a previously used engine block does not retain the date of manufacture of the engine in which the engine block was previously used if the engine is produced using all new components except for the engine block. In these cases, the date of manufacture is the date of reconstruction or the date the new engine is produced.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is number 2 distillate oil.

Diesel particulate filter means an emission control technology that reduces PM emissions by trapping the particles in a flow filter substrate and periodically removes the collected particles by either physical action or by oxidizing (burning off) the particles in a process called regeneration.

Emergency stationary internal combustion engine means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary ICE must comply with the requirements specified in § 60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in § 60.4211(f), then it is not considered to be an emergency stationary ICE under this subpart.

(1) The stationary ICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary ICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary ICE used to pump water in the case of fire or flood, etc.

(2) The stationary ICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 60.4211(f).

(3) The stationary ICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 60.4211(f)(2)(ii) or (iii) and § 60.4211(f)(3)(i).

Engine manufacturer means the manufacturer of the engine. See the definition of “manufacturer” in this section.

Fire pump engine means an emergency stationary internal combustion engine certified to NFPA requirements that is used to provide power to pump water for fire suppression or protection.

Freshly manufactured engine means an engine that has not been placed into service. An engine becomes freshly manufactured when it is originally produced.

Installed means the engine is placed and secured at the location where it is intended to be operated.

Manufacturer has the meaning given in section 216(1) of the Act. In general, this term includes any person who manufactures a stationary engine for sale in the United States or otherwise introduces a new stationary engine into commerce in the United States. This includes importers who import stationary engines for sale or resale.

Maximum engine power means maximum engine power as defined in 40 CFR 1039.801.

Model year means the calendar year in which an engine is manufactured (see “date of manufacture”), except as follows:

(1) Model year means the annual new model production period of the engine manufacturer in which an engine is manufactured (see “date of manufacture”), if the annual new model production period is different than the calendar year and includes January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For an engine that is converted to a stationary engine after being placed into service as a nonroad or other non-stationary engine, model year means the calendar year or new model production period in which the engine was manufactured (see “date of manufacture”).

Other internal combustion engine means any internal combustion engine, except combustion turbines, which is not a reciprocating internal combustion engine or rotary internal combustion engine.

Reciprocating internal combustion engine means any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work.

Rotary internal combustion engine means any internal combustion engine which uses rotary motion to convert heat energy into mechanical work.

Spark ignition means relating to a gasoline, natural gas, or liquefied petroleum gas fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary internal combustion engine means any internal combustion engine, except combustion turbines, that converts heat energy into mechanical work and is not mobile. Stationary ICE differ from mobile ICE in that a stationary internal combustion engine is not a nonroad engine as defined at 40 CFR 1068.30 (excluding paragraph (2)(ii) of that definition), and is not used to propel a motor vehicle, aircraft, or a vehicle used solely for competition. Stationary ICE include reciprocating ICE, rotary ICE, and other ICE, except combustion turbines.

Subpart means 40 CFR part 60, subpart IIII.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011; 78 FR 6696, Jan. 30, 2013]

Table 1 to Subpart IIII of Part 60—Emission Standards for Stationary Pre-2007 Model Year Engines With a Displacement of <10 Liters per Cylinder and 2007-2010 Model Year Engines >2,237 KW (3,000 HP) and With a Displacement of <10 Liters per Cylinder

[As stated in §§ 60.4201(b), 60.4202(b), 60.4204(a), and 60.4205(a), you must comply with the following emission standards]

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	$NMHC + NO_X$	HC	NO_X	CO	PM
KW<8 (HP<11)	10.5 (7.8)			8.0 (6.0)	1.0 (0.75)
8≤KW<19 (11≤HP<25)	9.5 (7.1)			6.6 (4.9)	0.80 (0.60)
19≤KW<37 (25≤HP<50)	9.5 (7.1)			5.5 (4.1)	0.80 (0.60)
37≤KW<56 (50≤HP<75)			9.2 (6.9)		
56≤KW<75 (75≤HP<100)			9.2 (6.9)		
75≤KW<130 (100≤HP<175)			9.2 (6.9)		

Maximum engine power	Emission standards for stationary pre-2007 model year engines with a displacement of <10 liters per cylinder and 2007-2010 model year engines >2,237 KW (3,000 HP) and with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)				
	NMHC + NO_X	HC	NO_X	CO	PM
130≤KW<225 (175≤HP<300)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
225≤KW<450 (300≤HP<600)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
450≤KW≤560 (600≤HP≤750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)
KW>560 (HP>750)		1.3 (1.0)	9.2 (6.9)	11.4 (8.5)	0.54 (0.40)

Table 2 to Subpart IIII of Part 60—Emission Standards for 2008 Model Year and Later Emergency Stationary CI ICE <37 KW (50 HP) With a Displacement of <10 Liters per Cylinder

[As stated in § 60.4202(a)(1), you must comply with the following emission standards]

Engine power	Emission standards for 2008 model year and later emergency stationary CI ICE <37 KW (50 HP) with a displacement of <10 liters per cylinder in g/KW-hr (g/HP-hr)			
	Model year(s)	NO_X+ NMHC	CO	PM
KW<8 (HP<11)	2008+	7.5 (5.6)	8.0 (6.0)	0.40 (0.30)
8≤KW<19 (11≤HP<25)	2008+	7.5 (5.6)	6.6 (4.9)	0.40 (0.30)
19≤KW<37 (25≤HP<50)	2008+	7.5 (5.6)	5.5 (4.1)	0.30 (0.22)

Table 3 to Subpart IIII of Part 60—Certification Requirements for Stationary Fire Pump Engines

As stated in § 60.4202(d), you must certify new stationary fire pump engines beginning with the following model years:

Engine power	Starting model year engine manufacturers must certify new stationary fire pump engines according to § 60.4202(d)[1]
KW<75 (HP<100)	2011
75≤KW<130 (100≤HP<175)	2010
130≤KW≤560 (175≤HP≤750)	2009
KW>560 (HP>750)	2008

[1]Manufacturers of fire pump stationary CI ICE with a maximum engine power greater than or equal to 37 kW (50 HP) and less than 450 KW (600 HP) and a rated speed of greater than 2,650 revolutions per minute (rpm) are not required to certify such engines until three model years following the model year indicated in this Table 3 for engines in the applicable engine power category.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011]

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

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

Maximum engine power	Model year(s)	NMHC + NO_X	CO	PM
KW<8 (HP<11)	2010 and earlier	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	2011+	7.5 (5.6)		0.40 (0.30)
8≤KW<19 (11≤HP<25)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
19≤KW<37 (25≤HP<50)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+	7.5 (5.6)		0.30 (0.22)

Maximum engine power	Model year(s)	NMHC + NO_X	CO	PM
37≤KW<56 (50≤HP<75)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ [1]	4.7 (3.5)		0.40 (0.30)
56≤KW<75 (75≤HP<100)	2010 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2011+ [1]	4.7 (3.5)		0.40 (0.30)
75≤KW<130 (100≤HP<175)	2009 and earlier	10.5 (7.8)	5.0 (3.7)	0.80 (0.60)
	2010+ [2]	4.0 (3.0)		0.30 (0.22)
130≤KW<225 (175≤HP<300)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ [3]	4.0 (3.0)		0.20 (0.15)
225≤KW<450 (300≤HP<600)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+ [3]	4.0 (3.0)		0.20 (0.15)
450≤KW≤560 (600≤HP≤750)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
KW>560 (HP>750)	2007 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2008+	6.4 (4.8)		0.20 (0.15)

[1] For model years 2011-2013, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 revolutions per minute (rpm) may comply with the emission limitations for 2010 model year engines.

[2] For model years 2010-2012, manufacturers, owners and operators of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2009 model year engines.

[3] In model years 2009-2011, manufacturers of fire pump stationary CI ICE in this engine power category with a rated speed of greater than 2,650 rpm may comply with the emission limitations for 2008 model year engines.

Table 5 to Subpart IIII of Part 60—Labeling and Recordkeeping Requirements for New Stationary Emergency Engines

[You must comply with the labeling requirements in § 60.4210(f) and the recordkeeping requirements in § 60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
19≤KW<56 (25≤HP<75)	2013
56≤KW<130 (75≤HP<175)	2012
KW≥130 (HP≥175)	2011

Table 6 to Subpart IIII of Part 60—Optional 3-Mode Test Cycle for Stationary Fire Pump Engines

[As stated in § 60.4210(g), manufacturers of fire pump engines may use the following test cycle for testing fire pump engines:]

Mode No.	Engine speed [1]	Torque (percent) [2]	Weighting factors
1	Rated	100	0.30
2	Rated	75	0.50
3	Rated	50	0.20

[1] Engine speed: ±2 percent of point.

[2] Torque: NFPA certified nameplate HP for 100 percent point. All points should be ±2 percent of engine percent load value.

Table 7 to Subpart IIII of Part 60—Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder

[As stated in § 60.4213, you must comply with the following requirements for performance tests for stationary CI ICE with a displacement of ≥30 liters per cylinder:]

For each	Complying with the requirement to	You must	Using	According to the following requirements
1. Stationary CI internal combustion engine with a displacement of ≥30 liters per cylinder	a. Reduce NO_X emissions by 90 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2 concentration must be made at the same time as the measurements for NO_X concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and,	(3) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurements for NO_X concentration.
		iv. Measure NO_X at the inlet and outlet of the control device	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(d) NO_X concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	b. Limit the concentration of NO_X in the stationary CI internal combustion engine exhaust.	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) If using a control device, the sampling site must be located at the outlet of the control device.

For each	Complying with the requirement to	You must	Using	According to the following requirements
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location; and,	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurement for NO_Xconcentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and,	(3) Method 4 of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO_Xconcentration.
		iv. Measure NO_Xat the exhaust of the stationary internal combustion engine	(4) Method 7E of 40 CFR part 60, appendix A, Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03 (incorporated by reference, see § 60.17)	(d) NO_Xconcentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	c. Reduce PM emissions by 60 percent or more	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) Sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2at the inlet and outlet of the control device;	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content at the inlet and outlet of the control device; and	(3) Method 4 of 40 CFR part 60, appendix A	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.

For each	Complying with the requirement to	You must	Using	According to the following requirements
		iv. Measure PM at the inlet and outlet of the control device	(4) Method 5 of 40 CFR part 60, appendix A	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
	d. Limit the concentration of PM in the stationary CI internal combustion engine exhaust	i. Select the sampling port location and the number of traverse points;	(1) Method 1 or 1A of 40 CFR part 60, appendix A	(a) If using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary internal combustion engine exhaust at the sampling port location; and	(2) Method 3, 3A, or 3B of 40 CFR part 60, appendix A	(b) Measurements to determine O_2concentration must be made at the same time as the measurements for PM concentration.
		iii. If necessary, measure moisture content of the stationary internal combustion engine exhaust at the sampling port location; and	(3) Method 4 of 40 CFR part 60, appendix A	(c) Measurements to determine moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the exhaust of the stationary internal combustion engine	(4) Method 5 of 40 CFR part 60, appendix A	(d) PM concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

Table 8 to Subpart IIII of Part 60—Applicability of General Provisions to Subpart IIII

[As stated in § 60.4218, you must comply with the following applicable General Provisions:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.1	General applicability of the General Provisions	Yes	

General Provisions citation	Subject of citation	Applies to subpart	Explanation
§ 60.2	Definitions	Yes	Additional terms defined in § 60.4219.
§ 60.3	Units and abbreviations	Yes	
§ 60.4	Address	Yes	
§ 60.5	Determination of construction or modification	Yes	
§ 60.6	Review of plans	Yes	
§ 60.7	Notification and Recordkeeping	Yes	Except that § 60.7 only applies as specified in § 60.4214(a).
§ 60.8	Performance tests	Yes	Except that § 60.8 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder and engines that are not certified.
§ 60.9	Availability of information	Yes	
§ 60.10	State Authority	Yes	
§ 60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in subpart IIII.
§ 60.12	Circumvention	Yes	
§ 60.13	Monitoring requirements	Yes	Except that § 60.13 only applies to stationary CI ICE with a displacement of (≥30 liters per cylinder.
§ 60.14	Modification	Yes	
§ 60.15	Reconstruction	Yes	
§ 60.16	Priority list	Yes	
§ 60.17	Incorporations by reference	Yes	
§ 60.18	General control device requirements	No	
§ 60.19	General notification and reporting requirements	Yes	

Attachment C
to MSOP No. M133-33057-00005

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

SOURCE: 72 FR 32759, June 13, 2007, unless otherwise noted.

§ 60.40c Applicability and delegation of authority.

(a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/h)) or less, but greater than or equal to 2.9 MW (10 MMBtu/h).

(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, § 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.

(c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing requirements, or monitoring requirements under this subpart (§§ 60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in § 60.41c.

(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under § 60.14.

(e) Affected facilities (i.e. heat recovery steam generators and fuel heaters) that are associated with stationary combustion turbines and meet the applicability requirements of subpart KKKK of this part are not subject to this subpart. This subpart will continue to apply to all other heat recovery steam generators, fuel heaters, and other affected facilities that are capable of combusting more than or equal to 2.9 MW (10 MMBtu/h) heat input of fossil fuel but less than or equal to 29 MW (100 MMBtu/h) heat input of fossil fuel. If the heat recovery steam generator, fuel heater, or other affected facility is subject to this subpart, only emissions resulting from combustion of fuels in the steam generating unit are subject to this subpart. (The stationary combustion turbine emissions are subject to subpart GG or KKKK, as applicable, of this part.)

(f) Any affected facility that meets the applicability requirements of and is subject to subpart AAAA or subpart CCCC of this part is not subject to this subpart.

(g) Any facility that meets the applicability requirements and is subject to an EPA approved State or Federal section 111(d)/129 plan implementing subpart BBBB of this part is not subject to this subpart.

(h) Affected facilities that also meet the applicability requirements under subpart J or subpart Ja of this part are subject to the PM and NO_X standards under this subpart and the SO_2 standards under subpart J or subpart Ja of this part, as applicable.

(i) Temporary boilers are not subject to this subpart.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.41c Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.

Annual capacity factor means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.

Coal means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see § 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal not meeting the definition of natural gas, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.

Coal refuse means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.

Combined cycle system means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.

Combustion research means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e. , the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).

Conventional technology means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.

Distillate oil means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17), diesel fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 60.17), kerosine, as defined by the American Society of Testing and Materials in ASTM D3699 (incorporated by reference, see § 60.17), biodiesel as defined by the American Society of Testing and Materials in ASTM D6751 (incorporated by reference, see § 60.17), or biodiesel blends as defined by the American Society of Testing and Materials in ASTM D7467 (incorporated by reference, see § 60.17).

Dry flue gas desulfurization technology means a SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.

Duct burner means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.

Emerging technology means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under § 60.48c(a)(4).

Federally enforceable means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.

Fluidized bed combustion technology means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.

Fuel pretreatment means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.

Heat input means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).

Heat transfer medium means any material that is used to transfer heat from one point to another point.

Maximum design heat input capacity means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 60.17); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions. Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 34 and 43 megajoules (MJ) per dry standard cubic meter (910 and 1,150 Btu per dry standard cubic foot).

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

Oil means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.

Potential sulfur dioxide emission rate means the theoretical SO_2 emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.

Process heater means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see § 60.17).

Steam generating unit means a device that combusts any fuel and produces steam or heats water or heats any heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.

Steam generating unit operating day means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.

Temporary boiler means a steam generating unit that combusts natural gas or distillate oil with a potential SO_2 emissions rate no greater than 26 ng/J (0.060 lb/MMBtu), and the unit is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A steam generating unit is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The steam generating unit or a replacement remains at a location for more than 180 consecutive days. Any temporary boiler that replaces a temporary boiler at a location and performs the same or similar function will be included in calculating the consecutive time period.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another in an attempt to circumvent the residence time requirements of this definition.

Wet flue gas desulfurization technology means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.

Wet scrubber system means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2 .

Wood means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9461, Feb. 16, 2012]

§ 60.42c Standard for sulfur dioxide (SO_2).

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility that combusts only coal shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility shall neither: cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 10 percent (0.10) of the potential SO_2 emission rate (90 percent reduction), nor cause to be discharged into the atmosphere from the affected facility any gases that contain SO_2 in excess of the emission limit is determined pursuant to paragraph (e)(2) of this section.

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the performance test is completed or required to be completed under § 60.8, whichever date comes first, the owner or operator of an affected facility that:

(1) Combusts only coal refuse alone in a fluidized bed combustion steam generating unit shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 87 ng/J (0.20 lb/MMBtu) heat input or 20 percent (0.20) of the potential SO_2 emission rate (80 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of SO_2 in excess of 520 ng/J (1.2 lb/MMBtu) heat input. If coal is fired with coal refuse, the affected facility subject to paragraph (a) of this section. If oil or any other fuel (except coal) is fired with coal refuse, the affected facility is subject to the 87 ng/J (0.20 lb/MMBtu) heat input SO_2 emissions limit or the 90 percent SO_2 reduction requirement specified in paragraph (a) of this section and the emission limit is determined pursuant to paragraph (e)(2) of this section.

(2) Combusts only coal and that uses an emerging technology for the control of SO_2 emissions shall neither:

(i) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 50 percent (0.50) of the potential SO_2 emission rate (50 percent reduction); nor

(ii) Cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 260 ng/J (0.60 lb/MMBtu) heat input. If coal is combusted with other fuels, the affected facility is subject to the 50 percent SO_2 reduction requirement specified in this paragraph and the emission limit determined pursuant to paragraph (e)(2) of this section.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, alone or in combination with any other fuel, and is listed in paragraphs (c)(1), (2), (3), or (4) of this section shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the emission limit determined pursuant to paragraph (e)(2) of this section. Percent reduction requirements are not applicable to affected facilities under paragraphs (c)(1), (2), (3), or (4).

(1) Affected facilities that have a heat input capacity of 22 MW (75 MMBtu/h) or less;

(2) Affected facilities that have an annual capacity for coal of 55 percent (0.55) or less and are subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for coal of 55 percent (0.55) or less.

(3) Affected facilities located in a noncontinental area; or

(4) Affected facilities that combust coal in a duct burner as part of a combined cycle system where 30 percent (0.30) or less of the heat entering the steam generating unit is from combustion of coal in the duct burner and 70 percent (0.70) or more of the heat entering the steam generating unit is from exhaust gases entering the duct burner.

(d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts oil shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of 215 ng/J (0.50 lb/MMBtu) heat input from oil; or, as an alternative, no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur. The percent reduction requirements are not applicable to affected facilities under this paragraph.

(e) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, oil, or coal and oil with any other fuel shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO_2 in excess of the following:

(1) The percent of potential SO_2 emission rate or numerical SO_2 emission rate required under paragraph (a) or (b)(2) of this section, as applicable, for any affected facility that

(i) Combusts coal in combination with any other fuel;

(ii) Has a heat input capacity greater than 22 MW (75 MMBtu/h); and

(iii) Has an annual capacity factor for coal greater than 55 percent (0.55); and

(2) The emission limit determined according to the following formula for any affected facility that combusts coal, oil, or coal and oil with any other fuel:

$$E_s = \frac{(K_a H_a + K_b H_b + K_c H_c)}{(H_a + H_b + H_c)}$$

Where:

E_s = SO_2 emission limit, expressed in ng/J or lb/MMBtu heat input;

K_a = 520 ng/J (1.2 lb/MMBtu);

K_b = 260 ng/J (0.60 lb/MMBtu);

K_c = 215 ng/J (0.50 lb/MMBtu);

H_a = Heat input from the combustion of coal, except coal combusted in an affected facility subject to paragraph (b)(2) of this section, in Joules (J) [MMBtu];

H_b = Heat input from the combustion of coal in an affected facility subject to paragraph (b)(2) of this section, in J (MMBtu); and

H_c = Heat input from the combustion of oil, in J (MMBtu).

(f) Reduction in the potential SO_2 emission rate through fuel pretreatment is not credited toward the percent reduction requirement under paragraph (b)(2) of this section unless:

(1) Fuel pretreatment results in a 50 percent (0.50) or greater reduction in the potential SO_2 emission rate; and

(2) Emissions from the pretreated fuel (without either combustion or post-combustion SO_2 control) are equal to or less than the emission limits specified under paragraph (b)(2) of this section.

(g) Except as provided in paragraph (h) of this section, compliance with the percent reduction requirements, fuel oil sulfur limits, and emission limits of this section shall be determined on a 30-day rolling average basis.

(h) For affected facilities listed under paragraphs (h)(1), (2), (3), or (4) of this section, compliance with the emission limits or fuel oil sulfur limits under this section may be determined based on a certification from the fuel supplier, as described under § 60.48c(f), as applicable.

(1) Distillate oil-fired affected facilities with heat input capacities between 2.9 and 29 MW (10 and 100 MMBtu/hr).

(2) Residual oil-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/hr).

(3) Coal-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(4) Other fuels-fired affected facilities with heat input capacities between 2.9 and 8.7 MW (10 and 30 MMBtu/h).

(i) The SO_2 emission limits, fuel oil sulfur limits, and percent reduction requirements under this section apply at all times, including periods of startup, shutdown, and malfunction.

(j) For affected facilities located in noncontinental areas and affected facilities complying with the percent reduction standard, only the heat input supplied to the affected facility from the combustion of coal and oil is counted under this section. No credit is provided for the heat input to the affected facility from wood or other fuels or for heat derived from exhaust gases from other sources, such as stationary gas turbines, internal combustion engines, and kilns.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5090, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§ 60.43c   Standard for particulate matter (PM).

(a) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts coal or combusts mixtures of coal with other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emission limits:

(1) 22 ng/J (0.051 lb/MMBtu) heat input if the affected facility combusts only coal, or combusts coal with other fuels and has an annual capacity factor for the other fuels of 10 percent (0.10) or less.

(2) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility combusts coal with other fuels, has an annual capacity factor for the other fuels greater than 10 percent (0.10), and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor greater than 10 percent (0.10) for fuels other than coal.

(b) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commenced construction, reconstruction, or modification on or before February 28, 2005, that combusts wood or combusts mixtures of wood with other fuels (except coal) and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater, shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of the following emissions limits:

(1) 43 ng/J (0.10 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood greater than 30 percent (0.30); or

(2) 130 ng/J (0.30 lb/MMBtu) heat input if the affected facility has an annual capacity factor for wood of 30 percent (0.30) or less and is subject to a federally enforceable requirement limiting operation of the affected facility to an annual capacity factor for wood of 30 percent (0.30) or less.

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that combusts coal, wood, or oil and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that exhibit greater than 20 percent opacity (6-minute average), except for one 6-minute period per hour of not more than 27 percent opacity. Owners and operators of an affected facility that elect to install, calibrate, maintain, and operate a continuous emissions monitoring system (CEMS) for measuring PM emissions according to the requirements of this subpart and are subject to a federally enforceable PM limit of 0.030 lb/MMBtu or less are exempt from the opacity standard specified in this paragraph (c).

(d) The PM and opacity standards under this section apply at all times, except during periods of startup, shutdown, or malfunction.

(e)(1) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 13 ng/J (0.030 lb/MMBtu) heat input, except as provided in paragraphs (e)(2), (e)(3), and (e)(4) of this section.

(2) As an alternative to meeting the requirements of paragraph (e)(1) of this section, the owner or operator of an affected facility for which modification commenced after February 28, 2005, may elect to meet the requirements of this paragraph. On and after the date on which the initial performance test is completed or required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005 shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of both:

(i) 22 ng/J (0.051 lb/MMBtu) heat input derived from the combustion of coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels; and

(ii) 0.2 percent of the combustion concentration (99.8 percent reduction) when combusting coal, oil, wood, a mixture of these fuels, or a mixture of these fuels with any other fuels.

(3) On and after the date on which the initial performance test is completed or is required to be completed under § 60.8, whichever date comes first, no owner or operator of an affected facility that commences modification after February 28, 2005, and that combusts over 30 percent wood (by heat input) on an annual basis and has a heat input capacity of 8.7 MW (30 MMBtu/h) or greater shall cause to be discharged into the atmosphere from that affected facility any gases that contain PM in excess of 43 ng/J (0.10 lb/MMBtu) heat input.

(4) An owner or operator of an affected facility that commences construction, reconstruction, or modification after February 28, 2005, and that combusts only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM standard under § 60.43c and not using a post-combustion technology (except a wet scrubber) to reduce PM or SO_2 emissions is not subject to the PM limit in this section.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 77 FR 9462, Feb. 16, 2012]

§ 60.44c Compliance and performance test methods and procedures for sulfur dioxide.

(a) Except as provided in paragraphs (g) and (h) of this section and § 60.8(b), performance tests required under § 60.8 shall be conducted following the procedures specified in paragraphs (b), (c), (d), (e), and (f) of this section, as applicable. Section 60.8(f) does not apply to this section. The 30-day notice required in § 60.8(d) applies only to the initial performance test unless otherwise specified by the Administrator.

(b) The initial performance test required under § 60.8 shall be conducted over 30 consecutive operating days of the steam generating unit. Compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c shall be determined using a 30-day average. The first operating day included in the initial performance test shall be scheduled within 30 days after achieving the maximum production rate at which the affect facility will be operated, but not later than 180 days after the initial startup of the facility. The steam generating unit load during the 30-day period does not have to be the maximum design heat input capacity, but must be representative of future operating conditions.

(c) After the initial performance test required under paragraph (b) of this section and § 60.8, compliance with the percent reduction requirements and SO_2 emission limits under § 60.42c is based on the average percent reduction and the average SO_2 emission rates for 30 consecutive steam generating unit operating days. A separate performance test is completed at the end of each steam generating unit operating day, and a new 30-day average percent reduction and SO_2 emission rate are calculated to show compliance with the standard.

(d) If only coal, only oil, or a mixture of coal and oil is combusted in an affected facility, the procedures in Method 19 of appendix A of this part are used to determine the hourly SO_2 emission rate (E_{ho}) and the 30-day average SO_2 emission rate (E_{ao}). The hourly averages used to compute the 30-day averages are obtained from the CEMS. Method 19 of appendix A of this part shall be used to calculate E_{ao} when using daily fuel sampling or Method 6B of appendix A of this part.

(e) If coal, oil, or coal and oil are combusted with other fuels:

(1) An adjusted E_{ho} (E_{ho} o) is used in Equation 19-19 of Method 19 of appendix A of this part to compute the adjusted E_{ao} (E_{ao} o). The E_{ho} o is computed using the following formula:

$$E_{ho}o = \frac{E_{ho} - E_w(1 - X_1)}{X_1}$$

Where:

E_{ho} o = Adjusted E_{ho} , ng/J (lb/MMBtu);

E_{ho} = Hourly SO_2 emission rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 9 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = 0.

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(2) The owner or operator of an affected facility that qualifies under the provisions of § 60.42c(c) or (d) (where percent reduction is not required) does not have to measure the parameters E_w or X_k if the owner or operator of the affected facility elects to measure emission rates of the coal or oil using the fuel sampling and analysis procedures under Method 19 of appendix A of this part.

(f) Affected facilities subject to the percent reduction requirements under § 60.42c(a) or (b) shall determine compliance with the SO_2 emission limits under § 60.42c pursuant to paragraphs (d) or (e) of this section, and shall determine compliance with the percent reduction requirements using the following procedures:

(1) If only coal is combusted, the percent of potential SO_2 emission rate is computed using the following formula:

$$\%P_s = 100\left(1 - \frac{\%R_g}{100}\right)\left(1 - \frac{\%R_f}{100}\right)$$

Where:

$\%P_s$ = Potential SO_2 emission rate, in percent;

$\%R_g$ = SO_2 removal efficiency of the control device as determined by Method 19 of appendix A of this part, in percent; and

$\%R_f$ = SO_2 removal efficiency of fuel pretreatment as determined by Method 19 of appendix A of this part, in percent.

(2) If coal, oil, or coal and oil are combusted with other fuels, the same procedures required in paragraph (f)(1) of this section are used, except as provided for in the following:

(i) To compute the $\%P_s$, an adjusted $\%R_g$ ($\%R_g$ o) is computed from E_{ao} o from paragraph (e)(1) of this section and an adjusted average SO_2 inlet rate (E_{ai} o) using the following formula:

$$\%R_g^{o} = 100\left(1 - \frac{E_{ao}^{o}}{E_{ai}^{o}}\right)$$

Where:

$\%R_g$ o = Adjusted $\%R_g$, in percent;

E_{ao} o = Adjusted E_{ao} , ng/J (lb/MMBtu); and

E_{ai} o = Adjusted average SO_2 inlet rate, ng/J (lb/MMBtu).

(ii) To compute E_{ai} o, an adjusted hourly SO_2 inlet rate (E_{hi} o) is used. The E_{hi} o is computed using the following formula:

$$E_{hi}o = \frac{E_{hi} - E_w(1 - X_k)}{X_k}$$

Where:

E_{hi} o = Adjusted E_{hi} , ng/J (lb/MMBtu);

E_{hi} = Hourly SO_2 inlet rate, ng/J (lb/MMBtu);

E_w = SO_2 concentration in fuels other than coal and oil combusted in the affected facility, as determined by fuel sampling and analysis procedures in Method 19 of appendix A of this part, ng/J (lb/MMBtu). The value E_w for each fuel lot is used for each hourly average during the time that the lot is being combusted. The owner or operator does not have to measure E_w if the owner or operator elects to assume E_w = 0; and

X_k = Fraction of the total heat input from fuel combustion derived from coal and oil, as determined by applicable procedures in Method 19 of appendix A of this part.

(g) For oil-fired affected facilities where the owner or operator seeks to demonstrate compliance with the fuel oil sulfur limits under § 60.42c based on shipment fuel sampling, the initial performance test shall consist of sampling and analyzing the oil in the initial tank of oil to be fired in the steam generating unit to demonstrate that the oil contains 0.5 weight percent sulfur or less. Thereafter, the owner or operator of the affected facility shall sample the oil in the fuel tank after each new shipment of oil is received, as described under § 60.46c(d)(2).

(h) For affected facilities subject to § 60.42c(h)(1), (2), or (3) where the owner or operator seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, the performance test shall consist of the certification from the fuel supplier, as described in § 60.48c(f), as applicable.

(i) The owner or operator of an affected facility seeking to demonstrate compliance with the SO_2 standards under § 60.42c(c)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(j) The owner or operator of an affected facility shall use all valid SO_2 emissions data in calculating $\%P_s$ and E_{ho} under paragraphs (d), (e), or (f) of this section, as applicable, whether or not the minimum emissions data requirements under § 60.46c(f) are achieved. All valid emissions data, including valid data collected during periods of startup, shutdown, and malfunction, shall be used in calculating $\%P_s$ or E_{ho} pursuant to paragraphs (d), (e), or (f) of this section, as applicable.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

§ 60.45c Compliance and performance test methods and procedures for particulate matter.

(a) The owner or operator of an affected facility subject to the PM and/or opacity standards under § 60.43c shall conduct an initial performance test as required under § 60.8, and shall conduct subsequent performance tests as requested by the Administrator, to determine compliance with the standards using the following procedures and reference methods, except as specified in paragraph (c) of this section.

(1) Method 1 of appendix A of this part shall be used to select the sampling site and the number of traverse sampling points.

(2) Method 3A or 3B of appendix A-2 of this part shall be used for gas analysis when applying Method 5 or 5B of appendix A-3 of this part or 17 of appendix A-6 of this part.

(3) Method 5, 5B, or 17 of appendix A of this part shall be used to measure the concentration of PM as follows:

(i) Method 5 of appendix A of this part may be used only at affected facilities without wet scrubber systems.

(ii) Method 17 of appendix A of this part may be used at affected facilities with or without wet scrubber systems provided the stack gas temperature does not exceed a temperature of 160 °C (320 °F). The procedures of Sections 8.1 and 11.1 of Method 5B of appendix A of this part may be used in Method 17 of appendix A of this part only if Method 17 of appendix A of this part is used in conjunction with a wet scrubber system. Method 17 of appendix A of this part shall not be used in conjunction with a wet scrubber system if the effluent is saturated or laden with water droplets.

(iii) Method 5B of appendix A of this part may be used in conjunction with a wet scrubber system.

(4) The sampling time for each run shall be at least 120 minutes and the minimum sampling volume shall be 1.7 dry standard cubic meters (dscm) [60 dry standard cubic feet (dscf)] except that smaller sampling times or volumes may be approved by the Administrator when necessitated by process variables or other factors.

(5) For Method 5 or 5B of appendix A of this part, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 ±14 °C (320±25 °F).

(6) For determination of PM emissions, an oxygen (O_2) or carbon dioxide (CO_2) measurement shall be obtained simultaneously with each run of Method 5, 5B, or 17 of appendix A of this part by traversing the duct at the same sampling location.

(7) For each run using Method 5, 5B, or 17 of appendix A of this part, the emission rates expressed in ng/J (lb/MMBtu) heat input shall be determined using:

(i) The O_2 or CO_2 measurements and PM measurements obtained under this section, (ii) The dry basis F factor, and

(iii) The dry basis emission rate calculation procedure contained in Method 19 of appendix A of this part.

(8) Method 9 of appendix A-4 of this part shall be used for determining the opacity of stack emissions.

(b) The owner or operator of an affected facility seeking to demonstrate compliance with the PM standards under § 60.43c(b)(2) shall demonstrate the maximum design heat input capacity of the steam generating unit by operating the steam generating unit at this capacity for 24 hours. This demonstration shall be made during the initial performance test, and a subsequent demonstration may be requested at any other time. If the demonstrated 24-hour average firing rate for the affected facility is less than the maximum design heat input capacity stated by the manufacturer of the affected facility, the demonstrated 24-hour average firing rate shall be used to determine the annual capacity factor for the affected facility; otherwise, the maximum design heat input capacity provided by the manufacturer shall be used.

(c) In place of PM testing with Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part, an owner or operator may elect to install, calibrate, maintain, and operate a CEMS for monitoring PM emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility who elects to continuously monitor PM emissions instead of conducting performance testing using Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall install, calibrate, maintain, and operate a CEMS and shall comply with the requirements specified in paragraphs (c)(1) through (c)(14) of this section.

(1) Notify the Administrator 1 month before starting use of the system.

(2) Notify the Administrator 1 month before stopping use of the system.

(3) The monitor shall be installed, evaluated, and operated in accordance with § 60.13 of subpart A of this part.

(4) The initial performance evaluation shall be completed no later than 180 days after the date of initial startup of the affected facility, as specified under § 60.8 of subpart A of this part or within 180 days of notification to the Administrator of use of CEMS if the owner or operator was previously determining compliance by Method 5, 5B, or 17 of appendix A of this part performance tests, whichever is later.

(5) The owner or operator of an affected facility shall conduct an initial performance test for PM emissions as required under § 60.8 of subpart A of this part. Compliance with the PM emission limit shall be determined by using the CEMS specified in paragraph (d) of this section to measure PM and calculating a 24-hour block arithmetic average emission concentration using EPA Reference Method 19 of appendix A of this part, section 4.1.

(6) Compliance with the PM emission limit shall be determined based on the 24-hour daily (block) average of the hourly arithmetic average emission concentrations using CEMS outlet data.

(7) At a minimum, valid CEMS hourly averages shall be obtained as specified in paragraph (c)(7)(i) of this section for 75 percent of the total operating hours per 30-day rolling average.

(i) At least two data points per hour shall be used to calculate each 1-hour arithmetic average.

(ii) [Reserved]

(8) The 1-hour arithmetic averages required under paragraph (c)(7) of this section shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the boiler operating day daily arithmetic average emission concentrations. The 1-hour arithmetic averages shall be calculated using the data points required under § 60.13(e)(2) of subpart A of this part.

(9) All valid CEMS data shall be used in calculating average emission concentrations even if the minimum CEMS data requirements of paragraph (c)(7) of this section are not met.

(10) The CEMS shall be operated according to Performance Specification 11 in appendix B of this part.

(11) During the correlation testing runs of the CEMS required by Performance Specification 11 in appendix B of this part, PM and O_2 (or CO_2) data shall be collected concurrently (or within a 30- to 60-minute period) by both the continuous emission monitors and performance tests conducted using the following test methods.

(i) For PM, Method 5 or 5B of appendix A-3 of this part or Method 17 of appendix A-6 of this part shall be used; and

(ii) For O2 (or CO_2), Method 3A or 3B of appendix A-2 of this part, as applicable shall be used.

(12) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with procedure 2 in appendix F of this part. Relative Response Audit's must be performed annually and Response Correlation Audits must be performed every 3 years.

(13) When PM emissions data are not obtained because of CEMS breakdowns, repairs, calibration checks, and zero and span adjustments, emissions data shall be obtained by using other monitoring systems as approved by the Administrator or EPA Reference Method 19 of appendix A of this part to provide, as necessary, valid emissions data for a minimum of 75 percent of total operating hours on a 30-day rolling average.

(14) As of January 1, 2012, and within 90 days after the date of completing each performance test, as defined in § 60.8, conducted to demonstrate compliance with this subpart, you must submit relative accuracy test audit (i.e., reference method) data and performance test (i.e., compliance test) data, except opacity data, electronically to EPA's Central Data Exchange (CDX) by using the Electronic Reporting Tool (ERT) (see http://www.epa.gov/ttn/chief/ert/ert tool.html/) or other compatible electronic spreadsheet. Only data collected using test methods compatible with ERT are subject to this requirement to be submitted electronically into EPA's WebFIRE database.

(d) The owner or operator of an affected facility seeking to demonstrate compliance under § 60.43c(e)(4) shall follow the applicable procedures under § 60.48c(f). For residual oil-fired affected facilities, fuel supplier certifications are only allowed for facilities with heat input capacities between 2.9 and 8.7 MW (10 to 30 MMBtu/h).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§ 60.46c Emission monitoring for sulfur dioxide.

(a) Except as provided in paragraphs (d) and (e) of this section, the owner or operator of an affected facility subject to the SO_2 emission limits under § 60.42c shall install, calibrate, maintain, and operate a CEMS for measuring SO_2 concentrations and either O_2 or CO_2 concentrations at the outlet of the SO_2 control device (or the outlet of the steam generating unit if no SO_2 control device is used), and shall record the output of the system. The owner or operator of an affected facility subject to the percent reduction requirements under § 60.42c shall measure SO_2 concentrations and either O_2 or CO_2 concentrations at both the inlet and outlet of the SO_2 control device.

(b) The 1-hour average SO_2 emission rates measured by a CEMS shall be expressed in ng/J or lb/MMBtu heat input and shall be used to calculate the average emission rates under § 60.42c. Each 1-hour average SO_2 emission rate must be based on at least 30 minutes of operation, and shall be calculated using the data points required under § 60.13(h)(2). Hourly SO_2 emission rates are not calculated if the affected facility is operated less than 30 minutes in a 1-hour period and are not counted toward determination of a steam generating unit operating day.

(c) The procedures under § 60.13 shall be followed for installation, evaluation, and operation of the CEMS.

(1) All CEMS shall be operated in accordance with the applicable procedures under Performance Specifications 1, 2, and 3 of appendix B of this part.

(2) Quarterly accuracy determinations and daily calibration drift tests shall be performed in accordance with Procedure 1 of appendix F of this part.

(3) For affected facilities subject to the percent reduction requirements under § 60.42c, the span value of the SO_2 CEMS at the inlet to the SO_2 control device shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted, and the span value of the SO_2 CEMS at the outlet from the SO_2 control device shall be 50 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(4) For affected facilities that are not subject to the percent reduction requirements of § 60.42c, the span value of the SO_2 CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) shall be 125 percent of the maximum estimated hourly potential SO_2 emission rate of the fuel combusted.

(d) As an alternative to operating a CEMS at the inlet to the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by sampling the fuel prior to combustion. As an alternative to operating a CEMS at the outlet from the SO_2 control device (or outlet of the steam generating unit if no SO_2 control device is used) as required under paragraph (a) of this section, an owner or operator may elect to determine the average SO_2 emission rate by using Method 6B of appendix A of this part. Fuel sampling shall be conducted pursuant to either paragraph (d)(1) or (d)(2) of this section. Method 6B of appendix A of this part shall be conducted pursuant to paragraph (d)(3) of this section.

(1) For affected facilities combusting coal or oil, coal or oil samples shall be collected daily in an as-fired condition at the inlet to the steam generating unit and analyzed for sulfur content and heat content according the Method 19 of appendix A of this part. Method 19 of appendix A of this part provides procedures for converting these measurements into the format to be used in calculating the average SO_2 input rate.

(2) As an alternative fuel sampling procedure for affected facilities combusting oil, oil samples may be collected from the fuel tank for each steam generating unit immediately after the fuel tank is filled and before any oil is combusted. The owner or operator of the affected facility shall analyze the oil sample to determine the sulfur content of the oil. If a partially empty fuel tank is refilled, a new sample and analysis of the fuel in the tank would be required upon filling. Results of the fuel analysis taken after each new shipment of oil is received shall be used as the daily value when calculating the 30-day rolling average until the next shipment is received. If the fuel analysis shows that the sulfur content in the fuel tank is greater than 0.5 weight percent sulfur, the owner or operator shall ensure that the sulfur content of subsequent oil shipments is low enough to cause the 30-day rolling average sulfur content to be 0.5 weight percent sulfur or less.

(3) Method 6B of appendix A of this part may be used in lieu of CEMS to measure SO_2 at the inlet or outlet of the SO_2 control system. An initial stratification test is required to verify the adequacy of the Method 6B of appendix A of this part sampling location. The stratification test shall consist of three paired runs of a suitable SO_2 and CO_2 measurement train operated at the candidate location and a second similar train operated according to the procedures in § 3.2 and the applicable procedures in section 7 of Performance Specification 2 of appendix B of this part. Method 6B of appendix A of this part, Method 6A of appendix A of this part, or a combination of Methods 6 and 3 of appendix A of this part or Methods 6C

and 3A of appendix A of this part are suitable measurement techniques. If Method 6B of appendix A of this part is used for the second train, sampling time and timer operation may be adjusted for the stratification test as long as an adequate sample volume is collected; however, both sampling trains are to be operated similarly. For the location to be adequate for Method 6B of appendix A of this part 24-hour tests, the mean of the absolute difference between the three paired runs must be less than 10 percent (0.10).

(e) The monitoring requirements of paragraphs (a) and (d) of this section shall not apply to affected facilities subject to § 60.42c(h) (1), (2), or (3) where the owner or operator of the affected facility seeks to demonstrate compliance with the SO_2 standards based on fuel supplier certification, as described under § 60.48c(f), as applicable.

(f) The owner or operator of an affected facility operating a CEMS pursuant to paragraph (a) of this section, or conducting as-fired fuel sampling pursuant to paragraph (d)(1) of this section, shall obtain emission data for at least 75 percent of the operating hours in at least 22 out of 30 successive steam generating unit operating days. If this minimum data requirement is not met with a single monitoring system, the owner or operator of the affected facility shall supplement the emission data with data collected with other monitoring systems as approved by the Administrator.

§ 60.47c Emission monitoring for particulate matter.

(a) Except as provided in paragraphs (c), (d), (e), and (f) of this section, the owner or operator of an affected facility combusting coal, oil, or wood that is subject to the opacity standards under § 60.43c shall install, calibrate, maintain, and operate a continuous opacity monitoring system (COMS) for measuring the opacity of the emissions discharged to the atmosphere and record the output of the system. The owner or operator of an affected facility subject to an opacity standard in § 60.43c(c) that is not required to use a COMS due to paragraphs (c), (d), (e), or (f) of this section that elects not to use a COMS shall conduct a performance test using Method 9 of appendix A-4 of this part and the procedures in § 60.11 to demonstrate compliance with the applicable limit in § 60.43c by April 29, 2011, within 45 days of stopping use of an existing COMS, or within 180 days after initial startup of the facility, whichever is later, and shall comply with either paragraphs (a)(1), (a)(2), or (a)(3) of this section. The observation period for Method 9 of appendix A-4 of this part performance tests may be reduced from 3 hours to 60 minutes if all 6-minute averages are less than 10 percent and all individual 15-second observations are less than or equal to 20 percent during the initial 60 minutes of observation.

(1) Except as provided in paragraph (a)(2) and (a)(3) of this section, the owner or operator shall conduct subsequent Method 9 of appendix A-4 of this part performance tests using the procedures in paragraph (a) of this section according to the applicable schedule in paragraphs (a)(1)(i) through (a)(1)(iv) of this section, as determined by the most recent Method 9 of appendix A-4 of this part performance test results.

(i) If no visible emissions are observed, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 12 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(ii) If visible emissions are observed but the maximum 6-minute average opacity is less than or equal to 5 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 6 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later;

(iii) If the maximum 6-minute average opacity is greater than 5 percent but less than or equal to 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 3 calendar months from the date that the most recent performance test was conducted or within 45 days of the next day that fuel with an opacity standard is combusted, whichever is later; or

(iv) If the maximum 6-minute average opacity is greater than 10 percent, a subsequent Method 9 of appendix A-4 of this part performance test must be completed within 45 calendar days from the date that the most recent performance test was conducted.

(2) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 of this part performance tests, elect to perform subsequent monitoring using Method 22 of appendix A-7 of this part according to the procedures specified in paragraphs (a)(2)(i) and (ii) of this section.

(i) The owner or operator shall conduct 10 minute observations (during normal operation) each operating day the affected facility fires fuel for which an opacity standard is applicable using Method 22 of appendix A-7 of this part and demonstrate that the sum of the occurrences of any visible emissions is not in excess of 5 percent of the observation period (i.e. , 30 seconds per 10 minute period). If the sum of the occurrence of any visible emissions is greater than 30 seconds during the initial 10 minute observation, immediately conduct a 30 minute observation. If the sum of the occurrence of visible emissions is greater than 5 percent of the observation period (i.e., 90 seconds per 30 minute period), the owner or operator shall either document and adjust the operation of the facility and demonstrate within 24 hours that the sum of the occurrence of visible emissions is equal to or less than 5 percent during a 30 minute observation (i.e., 90 seconds) or conduct a new Method 9 of appendix A-4 of this part performance test using the procedures in paragraph (a) of this section within 45 calendar days according to the requirements in § 60.45c(a)(8).

(ii) If no visible emissions are observed for 10 operating days during which an opacity standard is applicable, observations can be reduced to once every 7 operating days during which an opacity standard is applicable. If any visible emissions are observed, daily observations shall be resumed.

(3) If the maximum 6-minute opacity is less than 10 percent during the most recent Method 9 of appendix A-4 of this part performance test, the owner or operator may, as an alternative to performing subsequent Method 9 of appendix A-4 performance tests, elect to perform subsequent monitoring using a digital opacity compliance system according to a site-specific monitoring plan approved by the Administrator. The observations shall be similar, but not necessarily identical, to the requirements in paragraph (a)(2) of this section. For reference purposes in preparing the monitoring plan, see OAQPS "Determination of Visible Emission Opacity from Stationary Sources Using Computer-Based Photographic Analysis Systems." This document is available from the U.S. Environmental Protection Agency (U.S. EPA); Office of Air Quality and Planning Standards; Sector Policies and Programs Division; Measurement Policy Group (D243-02), Research Triangle Park, NC 27711. This document is also available on the Technology Transfer Network (TTN) under Emission Measurement Center Preliminary Methods.

(b) All COMS shall be operated in accordance with the applicable procedures under Performance Specification 1 of appendix B of this part. The span value of the opacity COMS shall be between 60 and 80 percent.

(c) Owners and operators of an affected facilities that burn only distillate oil that contains no more than 0.5 weight percent sulfur and/or liquid or gaseous fuels with potential sulfur dioxide emission rates of 26 ng/J (0.060 lb/MMBtu) heat input or less and that do not use a post-combustion technology to reduce SO2 or PM emissions and that are subject to an opacity standard in § 60.43c(c) are not required to operate a COMS if they follow the applicable procedures in § 60.48c(f).

(d) Owners or operators complying with the PM emission limit by using a PM CEMS must calibrate, maintain, operate, and record the output of the system for PM emissions discharged to the atmosphere as specified in § 60.45c(c). The CEMS specified in paragraph § 60.45c(c) shall be operated and data recorded during all periods of operation of the affected facility except for CEMS breakdowns and repairs. Data is recorded during calibration checks, and zero and span adjustments.

(e) Owners and operators of an affected facility that is subject to an opacity standard in § 60.43c(c) and that does not use post-combustion technology (except a wet scrubber) for reducing PM, SO_2 , or carbon monoxide (CO) emissions, burns only gaseous fuels or fuel oils that contain less than or equal to 0.5 weight percent sulfur, and is operated such that emissions of CO discharged to the atmosphere from the affected facility are maintained at levels less than or equal to 0.15 lb/MMBtu on a boiler operating day average basis is not required to operate a COMS. Owners and operators of affected facilities electing to comply with this paragraph must demonstrate compliance according to the procedures specified in paragraphs (e)(1) through (4) of this section; or

(1) You must monitor CO emissions using a CEMS according to the procedures specified in paragraphs (e)(1)(i) through (iv) of this section.

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

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

(iii) At a minimum, valid 1-hour CO emissions averages must be obtained for at least 90 percent of the operating hours on a 30-day rolling average basis. The 1-hour averages are calculated using the data points required in § 60.13(h)(2).

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

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

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

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

(f) An owner or operator of an affected facility that is subject to an opacity standard in § 60.43c(c) is not required to operate a COMS provided that the affected facility meets the conditions in either paragraphs (f)(1), (2), or (3) of this section.

(1) The affected facility uses a fabric filter (baghouse) as the primary PM control device and, the owner or operator operates a bag leak detection system to monitor the performance of the fabric filter according to the requirements in section § 60.48Da of this part.

(2) The affected facility uses an ESP as the primary PM control device, and the owner or operator uses an ESP predictive model to monitor the performance of the ESP developed in accordance and operated according to the requirements in section § 60.48Da of this part.

(3) The affected facility burns only gaseous fuels and/or fuel oils that contain no greater than 0.5 weight percent sulfur, and the owner or operator operates the unit according to a written site-specific monitoring plan approved by the permitting authority. This monitoring plan must include procedures and criteria for establishing and monitoring specific parameters for the affected facility indicative of compliance with the opacity standard. For testing performed as part of this site-specific monitoring plan, the permitting authority may require as an alternative to the notification and reporting requirements specified in §§ 60.8 and 60.11 that the owner or operator submit any deviations with the excess emissions report required under § 60.48c(c).

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009; 76 FR 3523, Jan. 20, 2011; 77 FR 9463, Feb. 16, 2012]

§ 60.48c Reporting and recordkeeping requirements.

(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by § 60.7 of this part. This notification shall include:

(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.

(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under § 60.42c, or § 60.43c.

(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.

(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of § 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.

(b) The owner or operator of each affected facility subject to the SO_2 emission limits of § 60.42c, or the PM or opacity limits of § 60.43c, shall submit to the Administrator the performance test data from the initial and any subsequent performance tests and, if applicable, the performance evaluation of the CEMS and/or COMS using the applicable performance specifications in appendix B of this part.

(c) In addition to the applicable requirements in § 60.7, the owner or operator of an affected facility subject to the opacity limits in § 60.43c(c) shall submit excess emission reports for any excess emissions from the affected facility that occur during the reporting period and maintain records according to the requirements specified in paragraphs (c)(1) through (3) of this section, as applicable to the visible emissions monitoring method used.

(1) For each performance test conducted using Method 9 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(1)(i) through (iii) of this section.

(i) Dates and time intervals of all opacity observation periods;

(ii) Name, affiliation, and copy of current visible emission reading certification for each visible emission observer participating in the performance test; and

(iii) Copies of all visible emission observer opacity field data sheets;

(2) For each performance test conducted using Method 22 of appendix A-4 of this part, the owner or operator shall keep the records including the information specified in paragraphs (c)(2)(i) through (iv) of this section.

(i) Dates and time intervals of all visible emissions observation periods;

(ii) Name and affiliation for each visible emission observer participating in the performance test;

(iii) Copies of all visible emission observer opacity field data sheets; and

(iv) Documentation of any adjustments made and the time the adjustments were completed to the affected facility operation by the owner or operator to demonstrate compliance with the applicable monitoring requirements.

(3) For each digital opacity compliance system, the owner or operator shall maintain records and submit reports according to the requirements specified in the site-specific monitoring plan approved by the Administrator

(d) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall submit reports to the Administrator.

(e) The owner or operator of each affected facility subject to the SO_2 emission limits, fuel oil sulfur limits, or percent reduction requirements under § 60.42c shall keep records and submit reports as required under paragraph (d) of this section, including the following information, as applicable.

(1) Calendar dates covered in the reporting period.

(2) Each 30-day average SO_2 emission rate (ng/J or lb/MMBtu), or 30-day average sulfur content (weight percent), calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of corrective actions taken.

(3) Each 30-day average percent of potential SO_2 emission rate calculated during the reporting period, ending with the last 30-day period; reasons for any noncompliance with the emission standards; and a description of the corrective actions taken.

(4) Identification of any steam generating unit operating days for which SO_2 or diluent (O_2 or CO_2) data have not been obtained by an approved method for at least 75 percent of the operating hours; justification for not obtaining sufficient data; and a description of corrective actions taken.

(5) Identification of any times when emissions data have been excluded from the calculation of average emission rates; justification for excluding data; and a description of corrective actions taken if data have been excluded for periods other than those during which coal or oil were not combusted in the steam generating unit.

(6) Identification of the F factor used in calculations, method of determination, and type of fuel combusted.

(7) Identification of whether averages have been obtained based on CEMS rather than manual sampling methods.

(8) If a CEMS is used, identification of any times when the pollutant concentration exceeded the full span of the CEMS.

(9) If a CEMS is used, description of any modifications to the CEMS that could affect the ability of the CEMS to comply with Performance Specifications 2 or 3 of appendix B of this part.

(10) If a CEMS is used, results of daily CEMS drift tests and quarterly accuracy assessments as required under appendix F, Procedure 1 of this part.

(11) If fuel supplier certification is used to demonstrate compliance, records of fuel supplier certification as described under paragraph (f)(1), (2), (3), or (4) of this section, as applicable. In addition to records of fuel supplier certifications, the report shall include a certified statement signed by the owner or operator of the affected facility that the records of fuel supplier certifications submitted represent all of the fuel combusted during the reporting period.

(f) Fuel supplier certification shall include the following information:

(1) For distillate oil:

(i) The name of the oil supplier;

(ii) A statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in § 60.41c; and

(iii) The sulfur content or maximum sulfur content of the oil.

(2) For residual oil:

(i) The name of the oil supplier;

(ii) The location of the oil when the sample was drawn for analysis to determine the sulfur content of the oil, specifically including whether the oil was sampled as delivered to the affected facility, or whether the sample was drawn from oil in storage at the oil supplier's or oil refiner's facility, or other location;

(iii) The sulfur content of the oil from which the shipment came (or of the shipment itself); and

(iv) The method used to determine the sulfur content of the oil.

(3) For coal:

(i) The name of the coal supplier;

(ii) The location of the coal when the sample was collected for analysis to determine the properties of the coal, specifically including whether the coal was sampled as delivered to the affected facility or whether the sample was collected from coal in storage at the mine, at a coal preparation plant, at a coal supplier's facility, or at another location. The certification shall include the name of the coal mine (and coal seam), coal storage facility, or coal preparation plant (where the sample was collected);

(iii) The results of the analysis of the coal from which the shipment came (or of the shipment itself) including the sulfur content, moisture content, ash content, and heat content; and

(iv) The methods used to determine the properties of the coal.

(4) For other fuels:

(i) The name of the supplier of the fuel;

(ii) The potential sulfur emissions rate or maximum potential sulfur emissions rate of the fuel in ng/J heat input; and

(iii) The method used to determine the potential sulfur emissions rate of the fuel.

(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.

(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in § 60.48c(f) to demonstrate compliance with the SO_2 standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.

(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in § 60.42C to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.

(h) The owner or operator of each affected facility subject to a federally enforceable requirement limiting the annual capacity factor for any fuel or mixture of fuels under § 60.42c or § 60.43c shall calculate the annual capacity factor individually for each fuel combusted. The annual capacity factor is determined on a 12-month rolling average basis with a new annual capacity factor calculated at the end of the calendar month.

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

(j) The reporting period for the reports required under this subpart is each six-month period. All reports shall be submitted to the Administrator and shall be postmarked by the 30th day following the end of the reporting period.

[72 FR 32759, June 13, 2007, as amended at 74 FR 5091, Jan. 28, 2009]

[Downloaded for the eCFR 5/2013]

Attachment D
to MSOP No. M133-33057-00005

Subpart JJJJJJ—National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources

SOURCE: 76 FR 15591, Mar. 21, 2011, unless otherwise noted.

What This Subpart Covers

§ 63.11193 Am I subject to this subpart?

You are subject to this subpart if you own or operate an industrial, commercial, or institutional boiler as defined in § 63.11237 that is located at, or is part of, an area source of hazardous air pollutants (HAP), as defined in § 63.2, except as specified in § 63.11195.

§ 63.11194 What is the affected source of this subpart?

(a) This subpart applies to each new, reconstructed, or existing affected source as defined in paragraphs (a)(1) and (2) of this section.

(1) The affected source of this subpart is the collection of all existing industrial, commercial, and institutional boilers within a subcategory, as listed in § 63.11200 and defined in § 63.11237, located at an area source.

(2) The affected source of this subpart is each new or reconstructed industrial, commercial, or institutional boiler within a subcategory, as listed in § 63.11200 and as defined in § 63.11237, located at an area source.

(b) An affected source is an existing source if you commenced construction or reconstruction of the affected source on or before June 4, 2010.

(c) An affected source is a new source if you commenced construction of the affected source after June 4, 2010, and the boiler meets the applicability criteria at the time you commence construction.

(d) An affected source is a reconstructed source if the boiler meets the reconstruction criteria as defined in § 63.2, you commenced reconstruction after June 4, 2010, and the boiler meets the applicability criteria at the time you commence reconstruction.

(e) An existing dual-fuel fired boiler meeting the definition of gas-fired boiler, as defined in § 63.11237, that meets the applicability requirements of this subpart after June 4, 2010 due to a fuel switch from gaseous fuel to solid fossil fuel, biomass, or liquid fuel is considered to be an existing source under this subpart as long as the boiler was designed to accommodate the alternate fuel.

(f) If you are an owner or operator of an area source subject to this subpart, you are exempt from the obligation to obtain a permit under 40 CFR part 70 or part 71 as a result of this subpart. You may, however, be required to obtain a title V permit due to another reason or reasons. See 40 CFR 70.3(a) and (b) or 71.3(a) and (b). Notwithstanding the exemption from title V permitting for area sources under this subpart, you must continue to comply with the provisions of this subpart.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7506, Feb. 1, 2013]

§ 63.11195 Are any boilers not subject to this subpart?

The types of boilers listed in paragraphs (a) through (k) of this section are not subject to this subpart and to any requirements in this subpart.

(a) Any boiler specifically listed as, or included in the definition of, an affected source in another standard(s) under this part.

(b) Any boiler specifically listed as an affected source in another standard(s) established under section 129 of the Clean Air Act.

(c) A boiler required to have a permit under section 3005 of the Solid Waste Disposal Act or covered by subpart EEE of this part (e.g., hazardous waste boilers), unless such units do not combust hazardous waste and combust comparable fuels.

(d) A boiler that is used specifically for research and development. This exemption does not include boilers that solely or primarily provide steam (or heat) to a process or for heating at a research and development facility. This exemption does not prohibit the use of the steam (or heat) generated from the boiler during research and development, however, the boiler must be concurrently and primarily engaged in research and development for the exemption to apply.

(e) A gas-fired boiler as defined in this subpart.

(f) A hot water heater as defined in this subpart.

(g) Any boiler that is used as a control device to comply with another subpart of this part, or part 60, part 61, or part 65 of this chapter provided that at least 50 percent of the average annual heat input during any 3 consecutive calendar years to the boiler is provided by regulated gas streams that are subject to another standard.

(h) Temporary boilers as defined in this subpart.

(i) Residential boilers as defined in this subpart.

(j) Electric boilers as defined in this subpart.

(k) An electric utility steam generating unit (EGU) covered by subpart UUUUU of this part.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7506, Feb. 1, 2013]

§ 63.11196 What are my compliance dates?

(a) If you own or operate an existing affected boiler, you must achieve compliance with the applicable provisions in this subpart as specified in paragraphs (a)(1) through (3) of this section.

(1) If the existing affected boiler is subject to a work practice or management practice standard of a tune-up, you must achieve compliance with the work practice or management practice standard no later than March 21, 2014.

(2) If the existing affected boiler is subject to emission limits, you must achieve compliance with the emission limits no later than March 21, 2014.

(3) If the existing affected boiler is subject to the energy assessment requirement, you must achieve compliance with the energy assessment requirement no later than March 21, 2014.

(b) If you start up a new affected source on or before May 20, 2011, you must achieve compliance with the provisions of this subpart no later than May 20, 2011.

(c) If you start up a new affected source after May 20, 2011, you must achieve compliance with the provisions of this subpart upon startup of your affected source.

(d) If you own or operate an industrial, commercial, or institutional boiler and would be subject to this subpart except for the exemption in § 63.11195(b) for commercial and industrial solid waste incineration units covered by 40 CFR part 60, subpart CCCC or subpart DDDD, and you cease combusting solid waste, you must be in compliance with this subpart on the effective date of the waste to fuel switch as specified in § 60.2145(a)(2) and (3) of subpart CCCC or § 60.2710(a)(2) and (3) of subpart DDDD.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7506, Feb. 1, 2013]

Emission Limits, Work Practice Standards, Emission Reduction Measures, and Management Practices

§ 63.11200 What are the subcategories of boilers?

The subcategories of boilers, as defined in § 63.11237 are:

(a) Coal.

(b) Biomass.

(c) Oil.

(d) Seasonal boilers.

(e) Oil-fired boilers with heat input capacity of equal to or less than 5 million British thermal units (Btu) per hour.

(f) Boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up.

(g) Limited-use boilers.

[78 FR 7506, Feb. 1, 2013]

§ 63.11201 What standards must I meet?

(a) You must comply with each emission limit specified in Table 1 to this subpart that applies to your boiler.

(b) You must comply with each work practice standard, emission reduction measure, and management practice specified in Table 2 to this subpart that applies to your boiler. An energy assessment completed on or after January 1, 2008 that meets or is amended to meet the energy assessment requirements in Table 2 to this subpart satisfies the energy assessment requirement. A facility that operates under an energy management program established through energy management systems compatible with ISO 50001, that includes the affected units, also satisfies the energy assessment requirement.

(c) You must comply with each operating limit specified in Table 3 to this subpart that applies to your boiler.

(d) These standards apply at all times the affected boiler is operating, except during periods of startup and shutdown as defined in § 63.11237, during which time you must comply only with Table 2 to this subpart.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7506, Feb. 1, 2013]

General Compliance Requirements

§ 63.11205 What are my general requirements for complying with this subpart?

(a) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

(b) You must demonstrate compliance with all applicable emission limits using performance stack testing, fuel analysis, or a continuous monitoring system (CMS), including a continuous emission monitoring system (CEMS), a continuous opacity monitoring system (COMS), or a continuous parameter monitoring system (CPMS), where applicable. You may demonstrate compliance with the applicable mercury emission limit using fuel analysis if the emission rate calculated according to § 63.11211(c) is less than the applicable emission limit. Otherwise, you must demonstrate compliance using stack testing.

(c) If you demonstrate compliance with any applicable emission limit through performance stack testing and subsequent compliance with operating limits (including the use of CPMS), with a CEMS, or with a COMS, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (3) of this section for the use of any CEMS, COMS, or CPMS. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 63.8(f).

(1) For each CMS required in this section (including CEMS, COMS, or CPMS), you must develop, and submit to the Administrator for approval upon request, a site-specific monitoring plan that addresses paragraphs (c)(1)(i) through (vi) of this section. You must submit this site-specific monitoring plan, if requested, at least 60 days before your initial performance evaluation of your CMS. This requirement to develop and submit a site-specific monitoring plan does not apply to affected sources with existing CEMS or COMS operated according to the performance specifications under appendix B to part 60 of this chapter and that meet the requirements of § 63.11224.

(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected process unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device);

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems; and

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

(iv) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1)(ii), (c)(3), and (c)(4)(ii);

(v) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d); and

(vi) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c) (as applicable in Table 8 to this subpart), (e)(1), and (e)(2)(i).

(2) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.

(3) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7506, Feb. 1, 2013]

Initial Compliance Requirements

§ 63.11210 What are my initial compliance requirements and by what date must I conduct them?

(a) You must demonstrate initial compliance with each emission limit specified in Table 1 to this subpart that applies to you by either conducting performance (stack) tests, as applicable, according to § 63.11212 and Table 4 to this subpart or, for mercury, conducting fuel analyses, as applicable, according to § 63.11213 and Table 5 to this subpart.

(b) For existing affected boilers that have applicable emission limits, you must demonstrate initial compliance with the applicable emission limits no later than 180 days after the compliance date that is specified in § 63.11196 and according to the applicable provisions in § 63.7(a)(2), except as provided in paragraph (j) of this section.

(c) For existing affected boilers that have applicable work practice standards, management practices, or emission reduction measures, you must demonstrate initial compliance no later than the compliance date that is specified in § 63.11196 and according to the applicable provisions in § 63.7(a)(2), except as provided in paragraph (j) of this section.

(d) For new or reconstructed affected boilers that have applicable emission limits, you must demonstrate initial compliance with the applicable emission limits no later than 180 days after March 21, 2011 or within 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(e) For new or reconstructed oil-fired boilers that combust only oil that contains no more than 0.50 weight percent sulfur or a mixture of 0.50 weight percent sulfur oil with other fuels not subject to a PM emission limit under this subpart and that do not use a post-combustion technology (except a wet scrubber) to reduce particulate matter (PM) or sulfur dioxide emissions, you are not subject to the PM emission limit in Table 1 of this subpart providing you monitor and record on a monthly basis the type of fuel combusted. If you intend to burn a new type of fuel or fuel mixture that does not meet the requirements of this paragraph, you must conduct a performance test within 60 days of burning the new fuel.

(f) For new or reconstructed affected boilers that have applicable work practice standards or management practices, you are not required to complete an initial performance tune-up, but you are required to complete the applicable biennial or 5-year tune-up as specified in § 63.11223 no later than 25 months or 61 months, respectively, after the initial startup of the new or reconstructed affected source.

(g) For affected boilers that ceased burning solid waste consistent with § 63.11196(d) and for which your initial compliance date has passed, you must demonstrate compliance within 60 days of the effective date of the waste-to-fuel switch as specified in § 60.2145(a)(2) and (3) of subpart CCCC or § 60.2710(a)(2) and (3) of subpart DDDD. If you have not conducted your compliance demonstration for this subpart within the previous 12 months, you must complete all compliance demonstrations for this subpart before you commence or recommence combustion of solid waste.

(h) For affected boilers that switch fuels or make a physical change to the boiler that results in the applicability of a different subcategory within subpart JJJJJJ or the boiler becoming subject to subpart JJJJJJ, you must demonstrate compliance within 180 days of the effective date of the fuel switch or the physical change. Notification of such changes must be submitted according to § 63.11225(g).

(i) For boilers located at existing major sources of HAP that limit their potential to emit (e.g., make a physical change or take a permit limit) such that the existing major source becomes an area source, you must comply with the applicable provisions as specified in paragraphs (i)(1) through (3) of this section.

(1) Any such existing boiler at the existing source must demonstrate compliance with subpart JJJJJJ within 180 days of the later of March 21, 2014 or upon the existing major source commencing operation as an area source.

(2) Any new or reconstructed boiler at the existing source must demonstrate compliance with subpart JJJJJJ within 180 days of the later of March 21, 2011 or startup.

(3) Notification of such changes must be submitted according to § 63.11225(g).

(j) For existing affected boilers that have not operated between the effective date of the rule and the compliance date that is specified for your source in § 63.11196, you must comply with the applicable provisions as specified in paragraphs (j)(1) through (3) of this section.

(1) You must complete the initial compliance demonstration, if subject to the emission limits in Table 1 to this subpart, as specified in paragraphs (a) and (b) of this section, no later than 180 days after the re-start of the affected boiler and according to the applicable provisions in § 63.7(a)(2).

(2) You must complete the initial performance tune-up, if subject to the tune-up requirements in § 63.11223, by following the procedures described in § 63.11223(b) no later than 30 days after the re-start of the affected boiler.

(3) You must complete the one-time energy assessment, if subject to the energy assessment requirements specified in Table 2 to this subpart, no later than the compliance date specified in § 63.11196.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7507, Feb. 1, 2013]

§ 63.11211   How do I demonstrate initial compliance with the emission limits?

(a) For affected boilers that demonstrate compliance with any of the emission limits of this subpart through performance (stack) testing, your initial compliance requirements include conducting performance tests according to § 63.11212 and Table 4 to this subpart, conducting a fuel analysis for each type of fuel burned in your boiler according to § 63.11213 and Table 5 to this subpart, establishing operating limits according to § 63.11222, Table 6 to this subpart and paragraph (b) of this section, as applicable, and conducting CMS performance evaluations according to § 63.11224. For affected boilers that burn a single type of fuel, you are exempted from the compliance requirements of conducting a fuel analysis for each type of fuel burned in your boiler. For purposes of this subpart, boilers that use a supplemental fuel only for startup, unit shutdown, and transient flame stability purposes still qualify as affected boilers that burn a single type of fuel, and the supplemental fuel is not subject to the fuel analysis requirements under § 63.11213 and Table 5 to this subpart.

(b) You must establish parameter operating limits according to paragraphs (b)(1) through (4) of this section.

(1) For a wet scrubber, you must establish the minimum scrubber liquid flow rate and minimum scrubber pressure drop as defined in § 63.11237, as your operating limits during the three-run performance stack test. If you use a wet scrubber and you conduct separate performance stack tests for PM and mercury emissions, you must establish one set of minimum scrubber liquid flow rate and pressure drop operating limits. If you conduct multiple performance stack tests, you must set the minimum scrubber liquid flow rate and pressure drop operating limits at the highest minimum values established during the performance stack tests.

(2) For an electrostatic precipitator operated with a wet scrubber, you must establish the minimum total secondary electric power (secondary voltage and secondary current), as defined in § 63.11237, as your operating limits during the three-run performance stack test.

(3) For activated carbon injection, you must establish the minimum activated carbon injection rate, as defined in § 63.11237, as your operating limit during the three-run performance stack test.

(4) The operating limit for boilers with fabric filters that demonstrate continuous compliance through bag leak detection systems is that a bag leak detection system be installed according to the requirements in § 63.11224, and that each fabric filter must be operated such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during a 6-month period.

(c) If you elect to demonstrate compliance with an applicable mercury emission limit through fuel analysis, you must conduct fuel analyses according to § 63.11213 and Table 5 to this subpart and follow the procedures in paragraphs (c)(1) through (3) of this section.

(1) If you burn more than one fuel type, you must determine the fuel type, or mixture, you could burn in your boiler that would result in the maximum emission rates of mercury.

(2) You must determine the 90th percentile confidence level fuel mercury concentration of the composite samples analyzed for each fuel type using Equation 1 of this section.

$$P_{90} = \text{mean} + (SD * t) \quad \text{(Eq. 1)}$$

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Where:

P_{90} = 90th percentile confidence level mercury concentration, in pounds per million Btu.

mean = Arithmetic average of the fuel mercury concentration in the fuel samples analyzed according to § 63.11213, in units of pounds per million Btu.

SD = Standard deviation of the mercury concentration in the fuel samples analyzed according to § 63.11213, in units of pounds per million Btu.

t = t distribution critical value for 90th percentile (0.1) probability for the appropriate degrees of freedom (number of samples minus one) as obtained from a Distribution Critical Value Table.

(3) To demonstrate compliance with the applicable mercury emission limit, the emission rate that you calculate for your boiler using Equation 1 of this section must be less than the applicable mercury emission limit.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7508, Feb. 1, 2013]

§ 63.11212 What stack tests and procedures must I use for the performance tests?

(a) You must conduct all performance tests according to § 63.7(c), (d), (f), and (h). You must also develop a site-specific test plan according to the requirements in § 63.7(c).

(b) You must conduct each stack test according to the requirements in Table 4 to this subpart. Boilers that use a CEMS for carbon monoxide (CO) are exempt from the initial CO performance testing in Table 4 to this subpart and the oxygen concentration operating limit requirement specified in Table 3 to this subpart.

(c) You must conduct performance stack tests at the representative operating load conditions while burning the type of fuel or mixture of fuels that have the highest emissions potential for each regulated pollutant, and you must demonstrate initial compliance and establish your operating limits based on these performance stack tests. For subcategories with more than one emission limit, these requirements could result in the need to conduct more than one performance stack test. Following each performance stack test and until the next performance stack test, you must comply with the operating limit for operating load conditions specified in Table 3 to this subpart.

(d) You must conduct a minimum of three separate test runs for each performance stack test required in this section, as specified in § 63.7(e)(3) and in accordance with the provisions in Table 4 to this subpart.

(e) To determine compliance with the emission limits, you must use the F-Factor methodology and equations in sections 12.2 and 12.3 of EPA Method 19 of appendix A-7 to part 60 of this chapter to convert the measured PM concentrations and the measured mercury concentrations that result from the performance test to pounds per million Btu heat input emission rates.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7508, Feb. 1, 2013]

§ 63.11213 What fuel analyses and procedures must I use for the performance tests?

(a) You must conduct fuel analyses according to the procedures in paragraphs (b) and (c) of this section and Table 5 to this subpart, as applicable. You are not required to conduct fuel analyses for fuels used for only startup, unit shutdown, and transient flame stability purposes. You are required to conduct fuel analyses only for fuels and units that are subject to emission limits for mercury in Table 1 of this subpart.

(b) At a minimum, you must obtain three composite fuel samples for each fuel type according to the procedures in Table 5 to this subpart. Each composite sample must consist of a minimum of three samples collected at approximately equal intervals during a test run period.

(c) Determine the concentration of mercury in the fuel in units of pounds per million Btu of each composite sample for each fuel type according to the procedures in Table 5 to this subpart.

§ 63.11214 How do I demonstrate initial compliance with the work practice standard, emission reduction measures, and management practice?

(a) If you own or operate an existing or new coal-fired boiler with a heat input capacity of less than 10 million Btu per hour, you must conduct a performance tune-up according to § 63.11223(b) and you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted a tune-up of the boiler.

(b) If you own or operate an existing or new biomass-fired boiler or an existing or new oil-fired boiler, you must conduct a performance tune-up according to § 63.11223(b) and you must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted a tune-up of the boiler.

(c) If you own or operate an existing affected boiler with a heat input capacity of 10 million Btu per hour or greater, you must submit a signed certification in the Notification of Compliance Status report that an energy assessment of the boiler and its energy use systems was completed according to Table 2 to this subpart and is an accurate depiction of your facility.

(d) If you own or operate a boiler subject to emission limits in Table 1 of this subpart, you must minimize the boiler's startup and shutdown periods following the manufacturer's recommended procedures, if available. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available. You must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7508, Feb. 1, 2013]

Continuous Compliance Requirements

§ 63.11220 When must I conduct subsequent performance tests or fuel analyses?

(a) If your boiler has a heat input capacity of 10 million British thermal units per hour or greater, you must conduct all applicable performance (stack) tests according to § 63.11212 on a triennial basis, except as specified in paragraphs (b) through (d) of this section. Triennial performance tests must be completed no more than 37 months after the previous performance test.

(b) When demonstrating initial compliance with the PM emission limit, if your boiler's performance test results show that your PM emissions are equal to or less than half of the PM emission limit, you do not need to conduct further performance tests for PM but must continue to comply with all applicable operating limits and monitoring requirements. If your initial performance test results show that your PM emissions are greater than half of the PM emission limit, you must conduct subsequent performance tests as specified in paragraph (a) of this section.

(c) If you demonstrate compliance with the mercury emission limit based on fuel analysis, you must conduct a fuel analysis according to § 63.11213 for each type of fuel burned as specified in paragraphs (c)(1) and (2) of this section. If you plan to burn a new type of fuel or fuel mixture, you must conduct a fuel analysis before burning the new type of fuel or mixture in your boiler. You must recalculate the mercury emission rate using Equation 1 of § 63.11211. The recalculated mercury emission rate must be less than the applicable emission limit.

(1) When demonstrating initial compliance with the mercury emission limit, if the mercury constituents in the fuel or fuel mixture are measured to be equal to or less than half of the mercury emission limit, you do not need to conduct further fuel analysis sampling but must continue to comply with all applicable operating limits and monitoring requirements.

(2) When demonstrating initial compliance with the mercury emission limit, if the mercury constituents in the fuel or fuel mixture are greater than half of the mercury emission limit, you must conduct quarterly sampling.

(d) For existing affected boilers that have not operated since the previous compliance demonstration and more than 3 years have passed since the previous compliance demonstration, you must complete your subsequent compliance demonstration no later than 180 days after the re-start of the affected boiler.

[78 FR 7508, Feb. 1, 2013]

§ 63.11221 Is there a minimum amount of monitoring data I must obtain?

(a) You must monitor and collect data according to this section and the site-specific monitoring plan required by § 63.11205(c).

(b) You must operate the monitoring system and collect data at all required intervals at all times the affected source is operating and compliance is required, except for periods of monitoring system malfunctions or out-of-control periods (see § 63.8(c)(7) of this part), repairs associated with monitoring system malfunctions or out-of-control periods, and required monitoring system quality assurance or quality control activities including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan. A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions or out-of-control periods and to return the monitoring system to operation as expeditiously as practicable.

(c) You may not use data collected during monitoring system malfunctions or out-of-control periods, repairs associated with monitoring system malfunctions or out-of-control periods, or required monitoring system quality assurance or quality control activities in calculations used to report emissions or operating levels. Any such periods must be reported according to the requirements in § 63.11225. You must use all the data collected during all other periods in assessing the operation of the control device and associated control system.

(d) Except for periods of monitoring system malfunctions or monitoring system out-of-control periods, repairs associated with monitoring system malfunctions or monitoring system out-of-control periods, and required monitoring system quality assurance or quality control activities (including, as applicable, calibration checks, required zero and span adjustments, and scheduled CMS maintenance as defined in your site-specific monitoring plan), failure to collect required data is a deviation of the monitoring requirements.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7508, Feb. 1, 2013]

§ 63.11222 How do I demonstrate continuous compliance with the emission limits?

(a) You must demonstrate continuous compliance with each emission limit and operating limit in Tables 1 and 3 to this subpart that applies to you according to the methods specified in Table 7 to this subpart and to paragraphs (a)(1) through (4) of this section.

(1) Following the date on which the initial compliance demonstration is completed or is required to be completed under §§ 63.7 and 63.11196, whichever date comes first, you must continuously monitor the operating parameters. Operation above the established maximum, below the established minimum, or outside the allowable range of the operating limits specified in paragraph (a) of this section constitutes a deviation from your operating limits established under this subpart, except during performance tests conducted to determine compliance with the emission and operating limits or to establish new operating limits. Operating limits are confirmed or reestablished during performance tests.

(2) If you have an applicable mercury or PM emission limit, you must keep records of the type and amount of all fuels burned in each boiler during the reporting period to demonstrate that all fuel types and mixtures of fuels burned would result in lower emissions of mercury than the applicable emission limit (if you demonstrate compliance through fuel analysis), or result in lower fuel input of mercury than the maximum values calculated during the last performance stack test (if you demonstrate compliance through performance stack testing).

(3) If you have an applicable mercury emission limit and you plan to burn a new type of fuel, you must determine the mercury concentration for any new fuel type in units of pounds per million Btu, using the procedures in Equation 1 of § 63.11211 based on supplier data or your own fuel analysis, and meet the requirements in paragraphs (a)(3)(i) or (ii) of this section.

(i) The recalculated mercury emission rate must be less than the applicable emission limit.

(ii) If the mercury concentration is higher than mercury fuel input during the previous performance test, then you must conduct a new performance test within 60 days of burning the new fuel type or fuel mixture according to the procedures in § 63.11212 to demonstrate that the mercury emissions do not exceed the emission limit.

(4) If your unit is controlled with a fabric filter, and you demonstrate continuous compliance using a bag leak detection system, you must initiate corrective action within 1 hour of a bag leak detection system alarm and operate and maintain the fabric filter system such that the alarm does not sound more than 5 percent of the operating time during a 6-month period. You must also keep records of the date, time, and duration of each alarm, the time corrective action was initiated and completed, and a brief description of the cause of the alarm and the corrective action taken. You must also record the percent of the operating time during each 6-month period that the alarm sounds. In calculating this operating time percentage, if inspection of the fabric filter demonstrates that no corrective action is required, no alarm time is counted. If corrective action is required, each alarm is counted as a minimum of 1 hour. If you take longer than 1 hour to initiate corrective action, the alarm time is counted as the actual amount of time taken to initiate corrective action.

(b) You must report each instance in which you did not meet each emission limit and operating limit in Tables 1 and 3 to this subpart that apply to you. These instances are deviations from the emission limits in this subpart. These deviations must be reported according to the requirements in § 63.11225.

§ 63.11223 How do I demonstrate continuous compliance with the work practice and management practice standards?

(a) For affected sources subject to the work practice standard or the management practices of a tune-up, you must conduct a performance tune-up according to paragraph (b) of this section and keep records as required in § 63.11225(c) to demonstrate continuous compliance. You must conduct the tune-up while burning the type of fuel (or fuels in the case of boilers that routinely burn two types of fuels at the same time) that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up.

(b) Except as specified in paragraphs (c) through (f) of this section, you must conduct a tune-up of the boiler biennially to demonstrate continuous compliance as specified in paragraphs (b)(1) through (7) of this section. Each biennial tune-up must be conducted no more than 25 months after the previous tune-up. For a new or reconstructed boiler, the first biennial tune-up must be no later than 25 months after the initial startup of the new or reconstructed boiler.

(1) As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the burner inspection until the first outage, not to exceed 36 months from the previous inspection.

(2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.

(3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection.

(4) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject.

(5) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.

(6) Maintain on-site and submit, if requested by the Administrator, a report containing the information in paragraphs (b)(6)(i) through (iii) of this section.

(i) The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler.

(ii) A description of any corrective actions taken as a part of the tune-up of the boiler.

(iii) The type and amount of fuel used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.

(7) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup.

(c) Boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up must conduct a tune-up of the boiler every 5 years as specified in paragraphs (b)(1) through (7) of this section. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed boiler with an oxygen trim system, the first 5-year tune-up must be no later than 61 months after the initial startup. You may delay the burner inspection specified in paragraph (b)(1) of this section and inspection of the system controlling the air-to-fuel ratio specified in paragraph (b)(3) of this section until the next scheduled unit shutdown, but you must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 months.

(d) Seasonal boilers must conduct a tune-up every 5 years as specified in paragraphs (b)(1) through (7) of this section. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed seasonal boiler, the first 5-year tune-up must be no later than 61 months after the initial startup. You may delay the burner inspection specified in paragraph (b)(1) of this section and inspection of the system controlling the air-to-fuel ratio specified in paragraph (b)(3) of this section until the next scheduled unit shutdown, but you must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 months. Seasonal boilers are not subject to the emission limits in Table 1 to this subpart or the operating limits in Table 3 to this subpart.

(e) Oil-fired boilers with a heat input capacity of equal to or less than 5 million Btu per hour must conduct a tune-up every 5 years as specified in paragraphs (b)(1) through (7) of this section. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed oil-fired boiler with a heat input capacity of equal to or less than 5 million Btu per hour, the first 5-year tune-up must be no later than 61 months after the initial startup. You may delay the burner inspection specified in paragraph (b)(1) of this section and inspection of the system controlling the air-to-fuel ratio specified in paragraph (b)(3) of this section until the next scheduled unit shutdown, but you must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 months.

(f) Limited-use boilers must conduct a tune-up every 5 years as specified in paragraphs (b)(1) through (7) of this section. Each 5-year tune-up must be conducted no more than 61 months after the previous tune-up. For a new or reconstructed limited-use boiler, the first 5-year tune-up must be no later than 61 months after the initial startup. You may delay the burner inspection specified in paragraph (b)(1) of this section and inspection of the system controlling the air-to-fuel ratio specified in paragraph (b)(3) of this section until the next scheduled unit shutdown, but you must inspect each burner and system controlling the air-to-fuel ratio at least once every 72 months. Limited-use boilers are not subject to the emission limits in Table 1 to this subpart, the energy assessment requirements in Table 2 to this subpart, or the operating limits in Table 3 to this subpart.

(g) If you own or operate a boiler subject to emission limits in Table 1 of this subpart, you must minimize the boiler's startup and shutdown periods following the manufacturer's recommended procedures, if available. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available. You must submit a signed statement in the Notification of Compliance Status report that indicates that you conducted startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7509, Feb. 1, 2013]

§ 63.11224 What are my monitoring, installation, operation, and maintenance requirements?

(a) If your boiler is subject to a CO emission limit in Table 1 to this subpart, you must either install, operate, and maintain a CEMS for CO and oxygen according to the procedures in paragraphs (a)(1) through (6) of this section, or install, calibrate, operate, and maintain an oxygen analyzer system, as defined in § 63.11237, according to the manufacturer's recommendations and paragraphs (a)(7) and (d) of this section, as applicable, by the compliance date specified in § 63.11196. Where a certified CO CEMS is used, the CO level shall be monitored at the outlet of the boiler, after any add-on controls or flue gas recirculation system and before release to the atmosphere. Boilers that use a CO CEMS are exempt from the initial CO performance testing and oxygen concentration operating limit requirements specified in § 63.11211(a) of this subpart. Oxygen monitors and oxygen trim systems must be installed to monitor oxygen in the boiler flue gas, boiler firebox, or other appropriate intermediate location.

(1) Each CO CEMS must be installed, operated, and maintained according to the applicable procedures under Performance Specification 4, 4A, or 4B at 40 CFR part 60, appendix B, and each oxygen CEMS must be installed, operated, and maintained according to Performance Specification 3 at 40 CFR part 60, appendix B. Both the CO and oxygen CEMS must also be installed, operated, and maintained according to the site-specific monitoring plan developed according to paragraph (c) of this section.

(2) You must conduct a performance evaluation of each CEMS according to the requirements in § 63.8(e) and according to Performance Specifications 3 and 4, 4A, or 4B at 40 CFR part 60, appendix B.

(3) Each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) every 15 minutes. You must have CEMS data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CEMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2).

(5) You must calculate hourly averages, corrected to 3 percent oxygen, from each hour of CO CEMS data in parts per million CO concentrations and determine the 10-day rolling average of all recorded readings, except as provided in § 63.11221(c). Calculate a 10-day rolling average from all of the hourly averages collected for the 10-day operating period using Equation 2 of this section.

$$\text{10-day average} = \frac{\sum_{i=1}^{n} Hpvi}{n} \qquad \text{(Eq. 2)}$$

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Where:

Hpvi = the hourly parameter value for hour i

n = the number of valid hourly parameter values collected over 10 boiler operating days

(6) For purposes of collecting CO data, you must operate the CO CEMS as specified in § 63.11221(b). For purposes of calculating data averages, you must use all the data collected during all periods in assessing compliance, except that you must exclude certain data as specified in § 63.11221(c). Periods when CO data are unavailable may constitute monitoring deviations as specified in § 63.11221(d).

(7) You must operate the oxygen analyzer system at or above the minimum oxygen level that is established as the operating limit according to Table 6 to this subpart when firing the fuel or fuel mixture utilized during the most recent CO performance stack test. Operation of oxygen trim systems to meet these requirements shall not be done in a manner which compromises furnace safety.

(b) If you are using a control device to comply with the emission limits specified in Table 1 to this subpart, you must maintain each operating limit in Table 3 to this subpart that applies to your boiler as specified in Table 7 to this subpart. If you use a control device not covered in Table 3 to this subpart, or you wish to establish and monitor an alternative operating limit and alternative monitoring parameters, you must apply to the United States Environmental Protection Agency (EPA) Administrator for approval of alternative monitoring under § 63.8(f).

(c) If you demonstrate compliance with any applicable emission limit through stack testing and subsequent compliance with operating limits, you must develop a site-specific monitoring plan according to the requirements in paragraphs (c)(1) through (4) of this section. This requirement also applies to you if you petition the EPA Administrator for alternative monitoring parameters under § 63.8(f).

(1) For each CMS required in this section, you must develop, and submit to the EPA Administrator for approval upon request, a site-specific monitoring plan that addresses paragraphs (c)(1)(i) through (iii) of this section. You must submit this site-specific monitoring plan (if requested) at least 60 days before your initial performance evaluation of your CMS.

(i) Installation of the CMS sampling probe or other interface at a measurement location relative to each affected unit such that the measurement is representative of control of the exhaust emissions (e.g., on or downstream of the last control device).

(ii) Performance and equipment specifications for the sample interface, the pollutant concentration or parametric signal analyzer, and the data collection and reduction systems.

(iii) Performance evaluation procedures and acceptance criteria (e.g., calibrations).

(2) In your site-specific monitoring plan, you must also address paragraphs (c)(2)(i) through (iii) of this section.

(i) Ongoing operation and maintenance procedures in accordance with the general requirements of § 63.8(c)(1), (3), and (4)(ii).

(ii) Ongoing data quality assurance procedures in accordance with the general requirements of § 63.8(d).

(iii) Ongoing recordkeeping and reporting procedures in accordance with the general requirements of § 63.10(c), (e)(1), and (e)(2)(i).

(3) You must conduct a performance evaluation of each CMS in accordance with your site-specific monitoring plan.

(4) You must operate and maintain the CMS in continuous operation according to the site-specific monitoring plan.

(d) If you have an operating limit that requires the use of a CMS, you must install, operate, and maintain each CPMS according to the procedures in paragraphs (d)(1) through (4) of this section.

(1) The CPMS must complete a minimum of one cycle of operation every 15 minutes. You must have data values from a minimum of four successive cycles of operation representing each of the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed, to have a valid hour of data.

(2) You must calculate hourly arithmetic averages from each hour of CPMS data in units of the operating limit and determine the 30-day rolling average of all recorded readings, except as provided in § 63.11221(c). Calculate a 30-day rolling average from all of the hourly averages collected for the 30-day operating period using Equation 3 of this section.

$$\text{30-day average} = \frac{\sum_{i=1}^{n} Hpvi}{n} \qquad \text{(Eq. 3)}$$

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Where:

Hpvi = the hourly parameter value for hour i

n = the number of valid hourly parameter values collected over 30 boiler operating days

(3) For purposes of collecting data, you must operate the CPMS as specified in § 63.11221(b). For purposes of calculating data averages, you must use all the data collected during all periods in assessing

compliance, except that you must exclude certain data as specified in § 63.11221(c). Periods when CPMS data are unavailable may constitute monitoring deviations as specified in § 63.11221(d).

(4) Record the results of each inspection, calibration, and validation check.

(e) If you have an applicable opacity operating limit under this rule, you must install, operate, certify and maintain each COMS according to the procedures in paragraphs (e)(1) through (8) of this section by the compliance date specified in § 63.11196.

(1) Each COMS must be installed, operated, and maintained according to Performance Specification 1 of 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each COMS according to the requirements in § 63.8 and according to Performance Specification 1 of 40 CFR part 60, appendix B.

(3) As specified in § 63.8(c)(4)(i), each COMS must complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data recording for each successive 6-minute period.

(4) The COMS data must be reduced as specified in § 63.8(g)(2).

(5) You must include in your site-specific monitoring plan procedures and acceptance criteria for operating and maintaining each COMS according to the requirements in § 63.8(d). At a minimum, the monitoring plan must include a daily calibration drift assessment, a quarterly performance audit, and an annual zero alignment audit of each COMS.

(6) You must operate and maintain each COMS according to the requirements in the monitoring plan and the requirements of § 63.8(e). You must identify periods the COMS is out of control including any periods that the COMS fails to pass a daily calibration drift assessment, a quarterly performance audit, or an annual zero alignment audit.

(7) You must calculate and record 6-minute averages from the opacity monitoring data and determine and record the daily block average of recorded readings, except as provided in § 63.11221(c).

(8) For purposes of collecting opacity data, you must operate the COMS as specified in § 63.11221(b). For purposes of calculating data averages, you must use all the data collected during all periods in assessing compliance, except that you must exclude certain data as specified in § 63.11221(c). Periods when COMS data are unavailable may constitute monitoring deviations as specified in § 63.11221(d).

(f) If you use a fabric filter bag leak detection system to comply with the requirements of this subpart, you must install, calibrate, maintain, and continuously operate the bag leak detection system as specified in paragraphs (f)(1) through (8) of this section.

(1) You must install and operate a bag leak detection system for each exhaust stack of the fabric filter.

(2) Each bag leak detection system must be installed, operated, calibrated, and maintained in a manner consistent with the manufacturer's written specifications and recommendations and in accordance with EPA-454/R-98-015 (incorporated by reference, see § 63.14).

(3) The bag leak detection system must be certified by the manufacturer to be capable of detecting particulate matter emissions at concentrations of 10 milligrams per actual cubic meter or less.

(4) The bag leak detection system sensor must provide output of relative or absolute particulate matter loadings.

(5) The bag leak detection system must be equipped with a device to continuously record the output signal from the sensor.

(6) The bag leak detection system must be equipped with an audible or visual alarm system that will activate automatically when an increase in relative particulate matter emissions over a preset level is detected. The alarm must be located where it is easily heard or seen by plant operating personnel.

(7) For positive pressure fabric filter systems that do not duct all compartments or cells to a common stack, a bag leak detection system must be installed in each baghouse compartment or cell.

(8) Where multiple bag leak detectors are required, the system's instrumentation and alarm may be shared among detectors.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7510, Feb. 1, 2013]

§ 63.11225 What are my notification, reporting, and recordkeeping requirements?

(a) You must submit the notifications specified in paragraphs (a)(1) through (5) of this section to the administrator.

(1) You must submit all of the notifications in §§ 63.7(b); 63.8(e) and (f); and 63.9(b) through (e), (g), and (h) that apply to you by the dates specified in those sections except as specified in paragraphs (a)(2) and (4) of this section.

(2) An Initial Notification must be submitted no later than January 20, 2014 or within 120 days after the source becomes subject to the standard.

(3) If you are required to conduct a performance stack test you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance stack test is scheduled to begin.

(4) You must submit the Notification of Compliance Status no later than 120 days after the applicable compliance date specified in § 63.11196 unless you must conduct a performance stack test. If you must conduct a performance stack test, you must submit the Notification of Compliance Status within 60 days of completing the performance stack test. You must submit the Notification of Compliance Status in accordance with paragraphs (a)(4)(i) and (vi) of this section. The Notification of Compliance Status must include the information and certification(s) of compliance in paragraphs (a)(4)(i) through (v) of this section, as applicable, and signed by a responsible official.

(i) You must submit the information required in § 63.9(h)(2), except the information listed in § 63.9(h)(2)(i)(B), (D), (E), and (F). If you conduct any performance tests or CMS performance evaluations, you must submit that data as specified in paragraph (e) of this section. If you conduct any opacity or visible emission observations, or other monitoring procedures or methods, you must submit that data to the Administrator at the appropriate address listed in § 63.13.

(ii) “This facility complies with the requirements in § 63.11214 to conduct an initial tune-up of the boiler.”

(iii) “This facility has had an energy assessment performed according to § 63.11214(c).”

(iv) For units that install bag leak detection systems: “This facility complies with the requirements in § 63.11224(f).”

(v) For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit.”

(vi) The notification must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written Notification of Compliance Status must be submitted to the Administrator at the appropriate address listed in § 63.13.

(5) If you are using data from a previously conducted emission test to serve as documentation of conformance with the emission standards and operating limits of this subpart, you must include in the Notification of Compliance Status the date of the test and a summary of the results, not a complete test report, relative to this subpart.

(b) You must prepare, by March 1 of each year, and submit to the delegated authority upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs (b)(1) through (4) of this section. You must submit the report by March 15 if you had any instance described by paragraph (b)(3) of this section. For boilers that are subject only to a requirement to conduct a biennial or 5-year tune-up according to § 63.11223(a) and not subject to emission limits or operating limits, you may prepare only a biennial or 5-year compliance report as specified in paragraphs (b)(1) and (2) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements of this subpart. Your notification must include the following certification(s) of compliance, as applicable, and signed by a responsible official:

(i) “This facility complies with the requirements in § 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler.”

(ii) For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit.”

(iii) “This facility complies with the requirement in §§ 63.11214(d) and 63.11223(g) to minimize the boiler's time spent during startup and shutdown and to conduct startups and shutdowns according to the manufacturer's recommended procedures or procedures specified for a boiler of similar design if manufacturer's recommended procedures are not available.”

(3) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken.

(4) The total fuel use by each affected boiler subject to an emission limit, for each calendar month within the reporting period, including, but not limited to, a description of the fuel, whether the fuel has received a non-waste determination by you or EPA through a petition process to be a non-waste under § 241.3(c), whether the fuel(s) were processed from discarded non-hazardous secondary materials within the meaning of § 241.3, and the total fuel usage amount with units of measure.

(c) You must maintain the records specified in paragraphs (c)(1) through (7) of this section.

(1) As required in § 63.10(b)(2)(xiv), you must keep a copy of each notification and report that you submitted to comply with this subpart and all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted.

(2) You must keep records to document conformance with the work practices, emission reduction measures, and management practices required by § 63.11214 and § 63.11223 as specified in paragraphs (c)(2)(i) through (vi) of this section.

(i) Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.

(ii) For operating units that combust non-hazardous secondary materials that have been determined not to be solid waste pursuant to § 241.3(b)(1) of this chapter, you must keep a record which documents how the secondary material meets each of the legitimacy criteria under § 241.3(d)(1). If you combust a fuel that has been processed from a discarded non-hazardous secondary material pursuant to § 241.3(b)(4) of this chapter, you must keep records as to how the operations that produced the fuel satisfies the definition of processing in § 241.2 and each of the legitimacy criteria in § 241.3(d)(1) of this chapter. If the fuel received a non-waste determination pursuant to the petition process submitted under § 241.3(c) of this chapter, you must keep a record that documents how the fuel satisfies the requirements of the petition process. For operating units that combust non-hazardous secondary materials as fuel per § 241.4, you must keep records documenting that the material is a listed non-waste under § 241.4(a).

(iii) For each boiler required to conduct an energy assessment, you must keep a copy of the energy assessment report.

(iv) For each boiler subject to an emission limit in Table 1 to this subpart, you must also keep records of monthly fuel use by each boiler, including the type(s) of fuel and amount(s) used.

(v) For each boiler that meets the definition of seasonal boiler, you must keep records of days of operation per year.

(vi) For each boiler that meets the definition of limited-use boiler, you must keep a copy of the federally enforceable permit that limits the annual capacity factor to less than or equal to 10 percent and records of fuel use for the days the boiler is operating.

(3) For sources that demonstrate compliance through fuel analysis, a copy of all calculations and supporting documentation that were done to demonstrate compliance with the mercury emission limits. Supporting documentation should include results of any fuel analyses. You can use the results from one fuel analysis for multiple boilers provided they are all burning the same fuel type.

(4) Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in § 63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.

(6) You must keep the records of all inspection and monitoring data required by §§ 63.11221 and 63.11222, and the information identified in paragraphs (c)(6)(i) through (vi) of this section for each required inspection or monitoring.

(i) The date, place, and time of the monitoring event.

(ii) Person conducting the monitoring.

(iii) Technique or method used.

(iv) Operating conditions during the activity.

(v) Results, including the date, time, and duration of the period from the time the monitoring indicated a problem to the time that monitoring indicated proper operation.

(vi) Maintenance or corrective action taken (if applicable).

(7) If you use a bag leak detection system, you must keep the records specified in paragraphs (c)(7)(i) through (iii) of this section.

(i) Records of the bag leak detection system output.

(ii) Records of bag leak detection system adjustments, including the date and time of the adjustment, the initial bag leak detection system settings, and the final bag leak detection system settings.

(iii) The date and time of all bag leak detection system alarms, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed.

(d) Your records must be in a form suitable and readily available for expeditious review. You must keep each record for 5 years following the date of each recorded action. You must keep each record on-site or be accessible from a central location by computer or other means that instantly provide access at the site for at least 2 years after the date of each recorded action. You may keep the records off site for the remaining 3 years.

(e)(1) Within 60 days after the date of completing each performance test (defined in § 63.2) as required by this subpart you must submit the results of the performance tests, including any associated fuel analyses, required by this subpart to EPA's WebFIRE database by using CEDRI that is accessed through EPA's CDX (www.epa.gov/cdx). Performance test data must be submitted in the file format generated through use of EPA's Electronic Reporting Tool (ERT) (see http://www.epa.gov/ttn/chief/ert/index.html). Only data collected using test methods on the ERT Web site are subject to this requirement for submitting reports electronically to WebFIRE. Owners or operators who claim that some of the information being submitted for performance tests is confidential business information (CBI) must submit a complete ERT file including information claimed to be CBI on a compact disk or other commonly used electronic storage media (including, but not limited to, flash drives) to EPA. The electronic media must be clearly marked as CBI and mailed to U.S. EPA/OAPQS/CORE CBI Office, Attention: WebFIRE Administrator, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same ERT file with the CBI omitted must be submitted to EPA via CDX as described earlier in this paragraph. At the discretion of the delegated authority, you must also submit these reports, including CBI, to the delegated authority in the format specified by the delegated authority. For any performance test conducted using test methods that are not listed on the ERT Web site, the owner or operator shall submit the results of the performance test in paper submissions to the Administrator at the appropriate address listed in § 63.13.

(2) Within 60 days after the date of completing each CEMS performance evaluation test as defined in § 63.2, you must submit relative accuracy test audit (RATA) data to EPA's CDX by using CEDRI in accordance with paragraph (e)(1) of this section. Only RATA pollutants that can be documented with the ERT (as listed on the ERT Web site) are subject to this requirement. For any performance evaluations

with no corresponding RATA pollutants listed on the ERT Web site, the owner or operator shall submit the results of the performance evaluation in paper submissions to the Administrator at the appropriate address listed in § 63.13.

(f) If you intend to commence or recommence combustion of solid waste, you must provide 30 days prior notice of the date upon which you will commence or recommence combustion of solid waste. The notification must identify:

(1) The name of the owner or operator of the affected source, the location of the source, the boiler(s) that will commence burning solid waste, and the date of the notice.

(2) The currently applicable subcategory under this subpart.

(3) The date on which you became subject to the currently applicable emission limits.

(4) The date upon which you will commence combusting solid waste.

(g) If you have switched fuels or made a physical change to the boiler and the fuel switch or change resulted in the applicability of a different subcategory within subpart JJJJJJ, in the boiler becoming subject to subpart JJJJJJ, or in the boiler switching out of subpart JJJJJJ due to a change to 100 percent natural gas, or you have taken a permit limit that resulted in you being subject to subpart JJJJJJ, you must provide notice of the date upon which you switched fuels, made the physical change, or took a permit limit within 30 days of the change. The notification must identify:

(1) The name of the owner or operator of the affected source, the location of the source, the boiler(s) that have switched fuels, were physically changed, or took a permit limit, and the date of the notice.

(2) The date upon which the fuel switch, physical change, or permit limit occurred.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7511, Feb. 1, 2013] .

§ 63.11226 Affirmative defense for violation of emission standards during malfunction.

In response to an action to enforce the standards set forth in § 63.11201 you may assert an affirmative defense to a claim for civil penalties for violations of such standards that are caused by malfunction, as defined at 40 CFR 63.2. Appropriate penalties may be assessed if you fail to meet your burden of proving all of the requirements in the affirmative defense. The affirmative defense shall not be available for claims for injunctive relief.

(a) Assertion of affirmative defense. To establish the affirmative defense in any action to enforce such a standard, you must timely meet the reporting requirements in paragraph (b) of this section, and must prove by a preponderance of evidence that:

(1) The violation:

(i) Was caused by a sudden, infrequent, and unavoidable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner; and

(ii) Could not have been prevented through careful planning, proper design or better operation and maintenance practices; and

(iii) Did not stem from any activity or event that could have been foreseen and avoided, or planned for; and

(iv) Was not part of a recurring pattern indicative of inadequate design, operation, or maintenance; and

(2) Repairs were made as expeditiously as possible when a violation occurred; and

(3) The frequency, amount, and duration of the violation (including any bypass) were minimized to the maximum extent practicable; and

(4) If the violation resulted from a bypass of control equipment or a process, then the bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

(5) All possible steps were taken to minimize the impact of the violation on ambient air quality, the environment, and human health; and

(6) All emissions monitoring and control systems were kept in operation if at all possible, consistent with safety and good air pollution control practices; and

(7) All of the actions in response to the violation were documented by properly signed, contemporaneous operating logs; and

(8) At all times, the affected source was operated in a manner consistent with good practices for minimizing emissions; and

(9) A written root cause analysis has been prepared, the purpose of which is to determine, correct, and eliminate the primary causes of the malfunction and the violation resulting from the malfunction event at issue. The analysis shall also specify, using best monitoring methods and engineering judgment, the amount of any emissions that were the result of the malfunction.

(b) Report. The owner or operator seeking to assert an affirmative defense shall submit a written report to the Administrator with all necessary supporting documentation, that it has met the requirements set forth in paragraph (a) of this section. This affirmative defense report shall be included in the first periodic compliance, deviation report or excess emission report otherwise required after the initial occurrence of the violation of the relevant standard (which may be the end of any applicable averaging period). If such compliance, deviation report or excess emission report is due less than 45 days after the initial occurrence of the violation, the affirmative defense report may be included in the second compliance, deviation report or excess emission report due after the initial occurrence of the violation of the relevant standard.

[78 FR 7513, Feb. 1, 2013]

Other Requirements and Information

§ 63.11235 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.11236 Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by EPA or an administrator such as your state, local, or tribal agency. If the EPA Administrator has delegated authority to your state, local, or tribal agency, then that agency has the authority to implement and enforce this subpart. You should contact your EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your state, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a state, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraphs (c) of this section are retained by the EPA Administrator and are not transferred to the state, local, or tribal agency.

(c) The authorities that cannot be delegated to state, local, or tribal agencies are specified in paragraphs (c)(1) through (5) of this section.

(1) Approval of an alternative non-opacity emission standard and work practice standards in § 63.11223(a).

(2) Approval of alternative opacity emission standard under § 63.6(h)(9).

(3) Approval of major change to test methods under § 63.7(e)(2)(ii) and (f). A “major change to test method” is defined in § 63.90.

(4) Approval of a major change to monitoring under § 63.8(f). A “major change to monitoring” is defined in § 63.90.

(5) Approval of major change to recordkeeping and reporting under § 63.10(f). A “major change to recordkeeping/reporting” is defined in § 63.90.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7513, Feb. 1, 2013]

§ 63.11237 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, in § 63.2 (the General Provisions), and in this section as follows:

10-day rolling average means the arithmetic mean of all valid hours of data from 10 successive operating days, except for periods of startup and shutdown and periods when the unit is not operating.

30-day rolling average means the arithmetic mean of all valid hours of data from 30 successive operating days, except for periods of startup and shutdown and periods when the unit is not operating.

Affirmative defense means, in the context of an enforcement proceeding, a response or defense put forward by a defendant, regarding which the defendant has the burden of proof, and the merits of which are independently and objectively evaluated in a judicial or administrative proceeding.

Annual heat input means the heat input for the 12 months preceding the compliance demonstration.

Bag leak detection system means a group of instruments that are capable of monitoring particulate matter loadings in the exhaust of a fabric filter (i.e., baghouse) in order to detect bag failures. A bag leak detection system includes, but is not limited to, an instrument that operates on electrodynamic, triboelectric, light scattering, light transmittance, or other principle to monitor relative particulate matter loadings.

Biodiesel means a mono-alkyl ester derived from biomass and conforming to ASTM D6751-11b, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels (incorporated by reference, see § 63.14).

Biomass means any biomass-based solid fuel that is not a solid waste. This includes, but is not limited to, wood residue and wood products (e.g., trees, tree stumps, tree limbs, bark, lumber, sawdust, sander dust, chips, scraps, slabs, millings, and shavings); animal manure, including litter and other bedding materials; vegetative agricultural and silvicultural materials, such as logging residues (slash), nut and grain hulls and chaff (e.g., almond, walnut, peanut, rice, and wheat), bagasse, orchard prunings, corn stalks, coffee bean hulls and grounds. This definition of biomass is not intended to suggest that these materials are or are not solid waste.

Biomass subcategory includes any boiler that burns any biomass and is not in the coal subcategory.

Boiler means an enclosed device using controlled flame combustion in which water is heated to recover thermal energy in the form of steam and/or hot water. Controlled flame combustion refers to a steady-state, or near steady-state, process wherein fuel and/or oxidizer feed rates are controlled. A device combusting solid waste, as defined in § 241.3 of this chapter, is not a boiler unless the device is exempt from the definition of a solid waste incineration unit as provided in section 129(g)(1) of the Clean Air Act. Waste heat boilers, process heaters, and autoclaves are excluded from the definition of Boiler .

Boiler system means the boiler and associated components, such as, feedwater systems, combustion air systems, fuel systems (including burners), blowdown systems, combustion control systems, steam systems, and condensate return systems, directly connected to and serving the energy use systems.

Calendar year means the period between January 1 and December 31, inclusive, for a given year.

Coal means all solid fuels classifiable as anthracite, bituminous, sub-bituminous, or lignite by the American Society for Testing and Materials in ASTM D388 (incorporated by reference, see § 63.14), coal refuse, and petroleum coke. For the purposes of this subpart, this definition of "coal" includes synthetic fuels derived from coal including, but not limited to, solvent-refined coal, coal-oil mixtures, and coal-water mixtures. Coal derived gases are excluded from this definition.

Coal subcategory includes any boiler that burns any solid fossil fuel and no more than 15 percent biomass on an annual heat input basis.

Commercial boiler means a boiler used in commercial establishments such as hotels, restaurants, and laundries to provide electricity, steam, and/or hot water.

Common stack means the exhaust of emissions from two or more affected units through a single flue. Affected units with a common stack may each have separate air pollution control systems located before the common stack, or may have a single air pollution control system located after the exhausts come together in a single flue.

Daily block average means the arithmetic mean of all valid emission concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown and periods when the unit is not operating.

Deviation (1) Means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(i) Fails to meet any applicable requirement or obligation established by this subpart including, but not limited to, any emission limit, operating limit, or work practice standard; or

(ii) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit.

(2) A deviation is not always a violation.

Distillate oil means fuel oils that contain 0.05 weight percent nitrogen or less and comply with the specifications for fuel oil numbers 1 and 2, as defined by the American Society of Testing and Materials in ASTM D396 (incorporated by reference, see § 63.14) or diesel fuel oil numbers 1 and 2, as defined by the American Society for Testing and Materials in ASTM D975 (incorporated by reference, see § 63.14), kerosene, and biodiesel as defined by the American Society of Testing and Materials in ASTM D6751-11b (incorporated by reference, see § 63.14).

Dry scrubber means an add-on air pollution control system that injects dry alkaline sorbent (dry injection) or sprays an alkaline sorbent (spray dryer) to react with and neutralize acid gas in the exhaust stream forming a dry powder material. Sorbent injection systems used as control devices in fluidized bed boilers and process heaters are included in this definition. A dry scrubber is a dry control system.

Electric boiler means a boiler in which electric heating serves as the source of heat. Electric boilers that burn gaseous or liquid fuel during periods of electrical power curtailment or failure are included in this definition.

Electric utility steam generating unit (EGU) means a fossil fuel-fired combustion unit of more than 25 megawatts that serves a generator that produces electricity for sale. A fossil fuel-fired unit that cogenerates steam and electricity and supplies more than one-third of its potential electric output capacity and more than 25 megawatts electrical output to any utility power distribution system for sale is considered an electric utility steam generating unit. To be “capable of combusting” fossil fuels, an EGU would need to have these fuels allowed in their operating permits and have the appropriate fuel handling facilities on-site or otherwise available (e.g., coal handling equipment, including coal storage area, belts and conveyers, pulverizers, etc.; oil storage facilities). In addition, fossil fuel-fired EGU means any EGU that fired fossil fuel for more than 10.0 percent of the average annual heat input in any 3 consecutive calendar years or for more than 15.0 percent of the annual heat input during any one calendar year after April 16, 2015.

Electrostatic precipitator (ESP) means an add-on air pollution control device used to capture particulate matter by charging the particles using an electrostatic field, collecting the particles using a grounded collecting surface, and transporting the particles into a hopper. An electrostatic precipitator is usually a dry control system.

Energy assessment means the following for the emission units covered by this subpart:

(1) The energy assessment for facilities with affected boilers with less than 0.3 trillion Btu per year (TBtu/year) heat input capacity will be 8 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s) accounting for at least 50 percent of the affected boiler(s) energy (e.g., steam, hot water, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing an 8-hour energy assessment.

(2) The energy assessment for facilities with affected boilers with 0.3 to 1.0 TBtu/year heat input capacity will be 24 on-site technical labor hours in length maximum, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s)

accounting for at least 33 percent of the affected boiler(s) energy (e.g., steam, hot water, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities, within the limit of performing a 24-hour energy assessment.

(3) The energy assessment for facilities with affected boilers with greater than 1.0 TBtu/year heat input capacity will be up to 24 on-site technical labor hours in length for the first TBtu/year plus 8 on-site technical labor hours for every additional 1.0 TBtu/year not to exceed 160 on-site technical hours, but may be longer at the discretion of the owner or operator of the affected source. The boiler system(s) and any on-site energy use system(s) accounting for at least 20 percent of the affected boiler(s) energy (e.g., steam, hot water, or electricity) production, as applicable, will be evaluated to identify energy savings opportunities.

(4) The on-site energy use system(s) serving as the basis for the percent of affected boiler(s) energy production, as applicable, in paragraphs (1), (2), and (3) of this definition may be segmented by production area or energy use area as most logical and applicable to the specific facility being assessed (e.g., product X manufacturing area; product Y drying area; Building Z).

Energy management program means a program that includes a set of practices and procedures designed to manage energy use that are demonstrated by the facility's energy policies, a facility energy manager and other staffing responsibilities, energy performance measurement and tracking methods, an energy saving goal, action plans, operating procedures, internal reporting requirements, and periodic review intervals used at the facility. Facilities may establish their program through energy management systems compatible with ISO 50001.

Energy use system (1) Includes the following systems located on the site of the affected boiler that use energy provided by the boiler:

(i) Process heating; compressed air systems; machine drive (motors, pumps, fans); process cooling; facility heating, ventilation, and air conditioning systems; hot water systems; building envelop; and lighting; or

(ii) Other systems that use steam, hot water, process heat, or electricity, provided by the affected boiler.

(2) Energy use systems are only those systems using energy clearly produced by affected boilers.

Equivalent means the following only as this term is used in Table 5 to this subpart:

(1) An equivalent sample collection procedure means a published voluntary consensus standard or practice (VCS) or

EPA method that includes collection of a minimum of three composite fuel samples, with each composite consisting of a minimum of three increments collected at approximately equal intervals over the test period.

(2) An equivalent sample compositing procedure means a published VCS or EPA method to systematically mix and obtain a representative subsample (part) of the composite sample.

(3) An equivalent sample preparation procedure means a published VCS or EPA method that: Clearly states that the standard, practice or method is appropriate for the pollutant and the fuel matrix; or is cited as an appropriate sample preparation standard, practice or method for the pollutant in the chosen VCS or EPA determinative or analytical method.

(4) An equivalent procedure for determining heat content means a published VCS or EPA method to obtain gross calorific (or higher heating) value.

(5) An equivalent procedure for determining fuel moisture content means a published VCS or EPA method to obtain moisture content. If the sample analysis plan calls for determining mercury using an aliquot of the dried sample, then the drying temperature must be modified to prevent vaporizing this metal. On the other hand, if metals analysis is done on an “as received” basis, a separate aliquot can be dried to determine moisture content and the mercury concentration mathematically adjusted to a dry basis.

(6) An equivalent mercury determinative or analytical procedure means a published VCS or EPA method that clearly states that the standard, practice, or method is appropriate for mercury and the fuel matrix and has a published detection limit equal or lower than the methods listed in Table 5 to this subpart for the same purpose.

Fabric filter means an add-on air pollution control device used to capture particulate matter by filtering gas streams through filter media, also known as a baghouse. A fabric filter is a dry control system.

Federally enforceable means all limitations and conditions that are enforceable by the EPA Administrator, including, but not limited to, the requirements of 40 CFR parts 60, 61, 63, and 65, requirements within any applicable state implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 40 CFR 51.24.

Fluidized bed boiler means a boiler utilizing a fluidized bed combustion process that is not a pulverized coal boiler.

Fluidized bed combustion means a process where a fuel is burned in a bed of granulated particles, which are maintained in a mobile suspension by the forward flow of air and combustion products.

Fuel type means each category of fuels that share a common name or classification. Examples include, but are not limited to, bituminous coal, sub-bituminous coal, lignite, anthracite, biomass, distillate oil, residual oil. Individual fuel types received from different suppliers are not considered new fuel types.

Gaseous fuels includes, but is not limited to, natural gas, process gas, landfill gas, coal derived gas, refinery gas, hydrogen, and biogas.

Gas-fired boiler includes any boiler that burns gaseous fuels not combined with any solid fuels and burns liquid fuel only during periods of gas curtailment, gas supply interruption, startups, or periodic testing on liquid fuel. Periodic testing of liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

Heat input means heat derived from combustion of fuel in a boiler and does not include the heat input from preheated combustion air, recirculated flue gases, returned condensate, or exhaust gases from other sources such as gas turbines, internal combustion engines, kilns.

Hot water heater means a closed vessel with a capacity of no more than 120 U.S. gallons in which water is heated by combustion of gaseous, liquid, or biomass fuel and hot water is withdrawn for use external to the vessel. Hot water boilers (i.e., not generating steam) combusting gaseous, liquid, or biomass fuel with a heat input capacity of less than 1.6 million Btu per hour are included in this definition. The 120 U.S. gallon capacity threshold to be considered a hot water heater is independent of the 1.6 million Btu per hour heat input capacity threshold for hot water boilers. Hot water heater also means a tankless unit that provides on-demand hot water.

Hourly average means the arithmetic average of at least four CMS data values representing the four 15-minute periods in an hour, or at least two 15-minute data values during an hour when CMS calibration, quality assurance, or maintenance activities are being performed.

Industrial boiler means a boiler used in manufacturing, processing, mining, and refining or any other industry to provide steam, hot water, and/or electricity.

Institutional boiler means a boiler used in institutional establishments such as, but not limited to, medical centers, nursing homes, research centers, institutions of higher education, elementary and secondary schools, libraries, religious establishments, and governmental buildings to provide electricity, steam, and/or hot water.

Limited-use boiler means any boiler that burns any amount of solid or liquid fuels and has a federally enforceable average annual capacity factor of no more than 10 percent.

Liquid fuel includes, but is not limited to, distillate oil, residual oil, any form of liquid fuel derived from petroleum, used oil meeting the specification in 40 CFR 279.11, liquid biofuels, biodiesel, and vegetable oil, and comparable fuels as defined under 40 CFR 261.38.

Load fraction means the actual heat input of a boiler divided by heat input during the performance test that established the minimum sorbent injection rate or minimum activated carbon injection rate, expressed as a fraction (e.g., for 50 percent load the load fraction is 0.5).

Minimum activated carbon injection rate means load fraction multiplied by the lowest hourly average activated carbon injection rate measured according to Table 6 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limit.

Minimum oxygen level means the lowest hourly average oxygen level measured according to Table 6 to this subpart during the most recent performance stack test demonstrating compliance with the applicable carbon monoxide emission limit.

Minimum scrubber liquid flow rate means the lowest hourly average scrubber liquid flow rate (e.g., to the particulate matter scrubber) measured according to Table 6 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limit.

Minimum scrubber pressure drop means the lowest hourly average scrubber pressure drop measured according to Table 6 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limit.

Minimum total secondary electric power means the lowest hourly average total secondary electric power determined from the values of secondary voltage and secondary current to the electrostatic precipitator measured according to Table 6 to this subpart during the most recent performance stack test demonstrating compliance with the applicable emission limits.

Natural gas means:

(1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or

(2) Liquefied petroleum gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see § 63.14); or

(3) A mixture of hydrocarbons that maintains a gaseous state at ISO conditions (i.e., a temperature of 288 Kelvin, a relative humidity of 60 percent, and a pressure of 101.3 kilopascals). Additionally, natural gas must either be composed of at least 70 percent methane by volume or have a gross calorific value between 35 and 41 megajoules (MJ) per dry standard cubic meter (950 and 1,100 Btu per dry standard cubic foot); or

(4) Propane or propane-derived synthetic natural gas. Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure $C_3 H_8$.

Oil subcategory includes any boiler that burns any liquid fuel and is not in either the biomass or coal subcategories. Gas-fired boilers that burn liquid fuel only during periods of gas curtailment, gas supply interruptions, startups, or for periodic testing are not included in this definition. Periodic testing on liquid fuel shall not exceed a combined total of 48 hours during any calendar year.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Operating day means a 24-hour period between 12 midnight and the following midnight during which any fuel is combusted at any time in the boiler unit. It is not necessary for fuel to be combusted for the entire 24-hour period.

Oxygen analyzer system means all equipment required to determine the oxygen content of a gas stream and used to monitor oxygen in the boiler flue gas, boiler firebox, or other appropriate intermediate location. This definition includes oxygen trim systems.

Oxygen trim system means a system of monitors that is used to maintain excess air at the desired level in a combustion device. A typical system consists of a flue gas oxygen and/or carbon monoxide monitor that automatically provides a feedback signal to the combustion air controller.

Particulate matter (PM) means any finely divided solid or liquid material, other than uncombined water, as measured by the test methods specified under this subpart, or an approved alternative method.

Performance testing means the collection of data resulting from the execution of a test method used (either by stack testing or fuel analysis) to demonstrate compliance with a relevant emission standard.

Period of gas curtailment or supply interruption means a period of time during which the supply of gaseous fuel to an affected boiler is restricted or halted for reasons beyond the control of the facility. The act of entering into a contractual agreement with a supplier of natural gas established for curtailment purposes does not constitute a reason that is under the control of a facility for the purposes of this definition. An increase in the cost or unit price of natural gas due to normal market fluctuations not during periods of supplier delivery restriction does not constitute a period of natural gas curtailment or supply interruption. On-site gaseous fuel system emergencies or equipment failures qualify as periods of supply interruption when the emergency or failure is beyond the control of the facility.

Process heater means an enclosed device using controlled flame, and the unit's primary purpose is to transfer heat indirectly to a process material (liquid, gas, or solid) or to a heat transfer material (e.g., glycol or a mixture of glycol and water) for use in a process unit, instead of generating steam. Process heaters are devices in which the combustion gases do not come into direct contact with process materials. Process heaters include units that heat water/water mixtures for pool heating, sidewalk heating, cooling tower water heating, power washing, or oil heating.

Qualified energy assessor means:

(1) Someone who has demonstrated capabilities to evaluate energy savings opportunities for steam generation and major energy using systems, including, but not limited to:

(i) Boiler combustion management.

(ii) Boiler thermal energy recovery, including

(A) Conventional feed water economizer,

(B) Conventional combustion air preheater, and

(C) Condensing economizer.

(iii) Boiler blowdown thermal energy recovery.

(iv) Primary energy resource selection, including

(A) Fuel (primary energy source) switching, and

(B) Applied steam energy versus direct-fired energy versus electricity.

(v) Insulation issues.

(vi) Steam trap and steam leak management.

(vii) Condensate recovery.

(viii) Steam end-use management.

(2) Capabilities and knowledge includes, but is not limited to:

(i) Background, experience, and recognized abilities to perform the assessment activities, data analysis, and report preparation.

(ii) Familiarity with operating and maintenance practices for steam or process heating systems.

(iii) Additional potential steam system improvement opportunities including improving steam turbine operations and reducing steam demand.

(iv) Additional process heating system opportunities including effective utilization of waste heat and use of proper process heating methods.

(v) Boiler-steam turbine cogeneration systems.

(vi) Industry specific steam end-use systems.

Regulated gas stream means an offgas stream that is routed to a boiler for the purpose of achieving compliance with a standard under another subpart of this part or part 60, part 61, or part 65 of this chapter.

Residential boiler means a boiler used to provide heat and/or hot water and/or as part of a residential combined heat and power system. This definition includes boilers located at an institutional facility (e.g., university campus, military base, church grounds) or commercial/industrial facility (e.g., farm) used primarily to provide heat and/or hot water for:

(1) A dwelling containing four or fewer families, or

(2) A single unit residence dwelling that has since been converted or subdivided into condominiums or apartments.

Residual oil means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society of Testing and Materials in ASTM D396-10 (incorporated by reference, see § 63.14(b)).

Responsible official means responsible official as defined in § 70.2.

Seasonal boiler means a boiler that undergoes a shutdown for a period of at least 7 consecutive months (or 210 consecutive days) each 12-month period due to seasonal conditions, except for periodic testing. Periodic testing shall not exceed a combined total of 15 days during the 7-month shutdown. This definition only applies to boilers that would otherwise be included in the biomass subcategory or the oil subcategory.

Shutdown means the cessation of operation of a boiler for any purpose. Shutdown begins either when none of the steam or heat from the boiler is supplied for heating and/or producing electricity, or for any other purpose, or at the point of no fuel being fired in the boiler, whichever is earlier. Shutdown ends when there is no steam and no heat being supplied and no fuel being fired in the boiler.

Solid fossil fuel includes, but is not limited to, coal, coke, petroleum coke, and tire-derived fuel.

Solid fuel means any solid fossil fuel or biomass or bio-based solid fuel.

Startup means either the first-ever firing of fuel in a boiler for the purpose of supplying steam or heat for heating and/or producing electricity, or for any other purpose, or the firing of fuel in a boiler after a shutdown event for any purpose. Startup ends when any of the steam or heat from the boiler is supplied for heating and/or producing electricity, or for any other purpose.

Temporary boiler means any gaseous or liquid fuel boiler that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler is not a temporary boiler if any one of the following conditions exists:

(1) The equipment is attached to a foundation.

(2) The boiler or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by the owner or operator of a unit specifying the basis for such a request. Any temporary boiler that replaces a temporary boiler at a location within the facility and performs the same or similar function will be included in calculating the consecutive time period unless there is a gap in operation of 12 months or more.

(3) The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

(4) The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.

Tune-up means adjustments made to a boiler in accordance with the procedures outlined in § 63.11223(b).

Vegetable oil means oils extracted from vegetation.

Voluntary Consensus Standards (VCS) mean technical standards (e.g., materials specifications, test methods, sampling procedures, business practices) developed or adopted by one or more voluntary consensus bodies. EPA/Office of Air Quality Planning and Standards, by precedent, has only used VCS that are written in English. Examples of VCS bodies are: American Society of Testing and Materials (ASTM 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428-B2959, (800) 262-1373, http://www.astm.org), American Society of Mechanical Engineers (ASME ASME, Three Park Avenue, New York, NY 10016-5990, (800) 843-2763, http://www.asme.org), International Standards Organization (ISO 1, ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, http://www.iso.org/iso/home.htm), Standards Australia (AS Level 10, The Exchange Centre, 20 Bridge Street, Sydney, GPO Box 476, Sydney NSW 2001, + 61 2 9237 6171 http://www.stadards.org.au), British Standards Institution (BSI, 389 Chiswick High Road, London, W4 4AL, United Kingdom, +44 (0)20 8996 9001, http://www.bsigroup.com), Canadian Standards Association (CSA 5060 Spectrum Way, Suite 100, Mississauga, Ontario L4W 5N6, Canada, 800-463-6727, http://www.csa.ca), European Committee for Standardization (CEN CENELEC Management Centre Avenue Marnix 17 B-1000 Brussels, Belgium +32 2 550 08 11, http://www.cen.eu/cen), and German Engineering Standards (VDI VDI Guidelines Department, P.O. Box 10 11 39 40002, Duesseldorf, Germany, +49 211 6214-230, http://www.vdi.eu). The types of standards that are not considered VCS are standards developed by: the United States, e.g., California (CARB) and Texas (TCEQ); industry groups, such as American Petroleum Institute (API), Gas Processors Association (GPA), and Gas Research Institute (GRI); and other branches of the U.S. government, e.g., Department of Defense (DOD) and Department of Transportation (DOT). This does not preclude EPA from using standards developed by groups that are not VCS bodies within their rule. When this occurs, EPA has done searches and reviews for VCS equivalent to these non-EPA methods.

Waste heat boiler means a device that recovers normally unused energy (i.e., hot exhaust gas) and converts it to usable heat. Waste heat boilers are also referred to as heat recovery steam generators. Waste heat boilers are heat exchangers generating steam from incoming hot exhaust gas from an industrial (e.g., thermal oxidizer, kiln, furnace) or power (e.g., combustion turbine, engine) equipment. Duct burners are sometimes used to increase the temperature of the incoming hot exhaust gas.

Wet scrubber means any add-on air pollution control device that mixes an aqueous stream or slurry with the exhaust gases from a boiler to control emissions of particulate matter or to absorb and neutralize acid gases, such as hydrogen chloride. A wet scrubber creates an aqueous stream or slurry as a byproduct of the emissions control process.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, which is promulgated pursuant to section 112(h) of the Clean Air Act.

[76 FR 15591, Mar. 21, 2011, as amended at 78 FR 7513, Feb. 1, 2013]

Table 1 to Subpart JJJJJJ of Part 63—Emission Limits

As stated in § 63.11201, you must comply with the following applicable emission limits:

If your boiler is in this subcategory . . .	For the following pollutants . . .	You must achieve less than or equal to the following emission limits, except during periods of startup and shutdown . . .
1. New coal-fired boilers with heat input capacity of 30 million British thermal units per hour (MMBtu/hr) or greater that do not meet the definition of limited-use boiler	a. PM (Filterable) b. Mercury c. CO	3.0E-02 pounds(lb) per million British thermal units (MMBtu) of heat input. 2.2E-05 lb per MMBtu of heat input. 420 parts per million (ppm) by volume on a dry basis corrected to 3 percent oxygen (3-run average or 10-day rolling average).
2. New coal-fired boilers with heat input capacity of between 10 and 30 MMBtu/hr that do not meet the definition of limited-use boiler	a. PM (Filterable) b. Mercury c. CO	4.2E-01 lb per MMBtu of heat input. 2.2E-05 lb per MMBtu of heat input. 420 ppm by volume on a dry basis corrected to 3 percent oxygen (3-run average or 10-day rolling average).
3. New biomass-fired boilers with heat input capacity of 30 MMBtu/hr or greater that do not meet the definition of seasonal boiler or limited-use boiler	PM (Filterable)	3.0E-02 lb per MMBtu of heat input.
4. New biomass fired boilers with heat input capacity of between 10 and 30 MMBtu/hr that do not meet the definition of seasonal boiler or limited-use boiler	PM (Filterable)	7.0E-02 lb per MMBtu of heat input.
5. New oil-fired boilers with heat input capacity of 10 MMBtu/hr or greater that do not meet the definition of seasonal boiler or limited-use boiler	PM (Filterable)	3.0E-02 lb per MMBtu of heat input.
6. Existing coal-fired boilers with heat input capacity of 10 MMBtu/hr or greater that do not meet the definition of limited-use boiler	a. Mercury b. CO	2.2E-05 lb per MMBtu of heat input. 420 ppm by volume on a dry basis corrected to 3 percent oxygen.

[78 FR 7517, Feb. 1, 2013]

Table 2 to Subpart JJJJJJ of Part 63—Work Practice Standards, Emission Reduction Measures, and Management Practices

As stated in § 63.11201, you must comply with the following applicable work practice standards, emission reduction measures, and management practices:

If your boiler is in this subcategory . . .	**You must meet the following . . .**
1. Existing or new coal-fired, new biomass-fired, or new oil-fired boilers (units with heat input capacity of 10 MMBtu/hr or greater)	Minimize the boiler's startup and shutdown periods and conduct startups and shutdowns according to the manufacturer's recommended procedures. If manufacturer's recommended procedures are not available, you must follow recommended procedures for a unit of similar design for which manufacturer's recommended procedures are available.
2. Existing coal-fired boilers with heat input capacity of less than 10 MMBtu/hr that do not meet the definition of limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio	Conduct an initial tune-up as specified in § 63.11214, and conduct a tune-up of the boiler biennially as specified in § 63.11223.
3. New coal-fired boilers with heat input capacity of less than 10 MMBtu/hr that do not meet the definition of limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio	Conduct a tune-up of the boiler biennially as specified in § 63.11223.
4. Existing oil-fired boilers with heat input capacity greater than 5 MMBtu/hr that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio	Conduct an initial tune-up as specified in § 63.11214, and conduct a tune-up of the boiler biennially as specified in § 63.11223.
5. New oil-fired boilers with heat input capacity greater than 5 MMBtu/hr that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio	Conduct a tune-up of the boiler biennially as specified in § 63.11223.
6. Existing biomass-fired boilers that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio	Conduct an initial tune-up as specified in § 63.11214, and conduct a tune-up of the boiler biennially as specified in § 63.11223.

If your boiler is in this subcategory . . .	**You must meet the following . . .**
7. New biomass-fired boilers that do not meet the definition of seasonal boiler or limited-use boiler, or use an oxygen trim system that maintains an optimum air-to-fuel ratio	Conduct a tune-up of the boiler biennially as specified in § 63.11223.
8. Existing seasonal boilers	Conduct an initial tune-up as specified in § 63.11214, and conduct a tune-up of the boiler every 5 years as specified in § 63.11223.
9. New seasonal boilers	Conduct a tune-up of the boiler every 5 years as specified in § 63.11223.
10. Existing limited-use boilers	Conduct an initial tune-up as specified in § 63.11214, and conduct a tune-up of the boiler every 5 years as specified in § 63.11223.
11. New limited-use boilers	Conduct a tune-up of the boiler every 5 years as specified in § 63.11223.
12. Existing oil-fired boilers with heat input capacity of equal to or less than 5 MMBtu/hr	Conduct an initial tune-up as specified in § 63.11214, and conduct a tune-up of the boiler every 5 years as specified in § 63.11223.
13. New oil-fired boilers with heat input capacity of equal to or less than 5 MMBtu/hr	Conduct a tune-up of the boiler every 5 years as specified in § 63.11223.
14. Existing coal-fired, biomass-fired, or oil-fired boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up	Conduct an initial tune-up as specified in § 63.11214, and conduct a tune-up of the boiler every 5 years as specified in § 63.11223.
15. New coal-fired, biomass-fired, or oil-fired boilers with an oxygen trim system that maintains an optimum air-to-fuel ratio that would otherwise be subject to a biennial tune-up	Conduct a tune-up of the boiler every 5 years as specified in § 63.11223.

If your boiler is in this subcategory . . .	You must meet the following . . .
16. Existing coal-fired, biomass-fired, or oil-fired boilers (units with heat input capacity of 10 MMBtu/hr and greater), not including limited-use boilers	Must have a one-time energy assessment performed by a qualified energy assessor. An energy assessment completed on or after January 1, 2008, that meets or is amended to meet the energy assessment requirements in this table satisfies the energy assessment requirement. Energy assessor approval and qualification requirements are waived in instances where past or amended energy assessments are used to meet the energy assessment requirements. A facility that operates under an energy management program compatible with ISO 50001 that includes the affected units also satisfies the energy assessment requirement. The energy assessment must include the following with extent of the evaluation for items (1) to (4) appropriate for the on-site technical hours listed in § 63.11237:
	(1) A visual inspection of the boiler system,
	(2) An evaluation of operating characteristics of the affected boiler systems, specifications of energy use systems, operating and maintenance procedures, and unusual operating constraints,
	(3) An inventory of major energy use systems consuming energy from affected boiler(s) and which are under control of the boiler owner or operator,
	(4) A review of available architectural and engineering plans, facility operation and maintenance procedures and logs, and fuel usage,
	(5) A list of major energy conservation measures that are within the facility's control,
	(6) A list of the energy savings potential of the energy conservation measures identified, and
	(7) A comprehensive report detailing the ways to improve efficiency, the cost of specific improvements, benefits, and the time frame for recouping those investments.

[78 FR 7518, Feb. 1, 2013]

Table 3 to Subpart JJJJJJ of Part 63—Operating Limits for Boilers With Emission Limits

As stated in § 63.11201, you must comply with the applicable operating limits:

If you demonstrate compliance with applicable emission limits using . . .	You must meet these operating limits except during periods of startup and shutdown . . .
1. Fabric filter control	a. Maintain opacity to less than or equal to 10 percent opacity (daily block average); OR b. Install and operate a bag leak detection system according to § 63.11224 and operate the fabric filter such that the bag leak detection system alarm does not sound more than 5 percent of the operating time during each 6-month period.
2. Electrostatic precipitator control	a. Maintain opacity to less than or equal to 10 percent opacity (daily block average); OR b. Maintain the 30-day rolling average total secondary electric power of the electrostatic precipitator at or above the minimum total secondary electric power as defined in § 63.11237.
3. Wet scrubber control	Maintain the 30-day rolling average pressure drop across the wet scrubber at or above the minimum scrubber pressure drop as defined in § 63.11237 and the 30-day rolling average liquid flow rate at or above the minimum scrubber liquid flow rate as defined in § 63.11237.
4. Dry sorbent or activated carbon injection control	Maintain the 30-day rolling average sorbent or activated carbon injection rate at or above the minimum sorbent injection rate or minimum activated carbon injection rate as defined in § 63.11237. When your boiler operates at lower loads, multiply your sorbent or activated carbon injection rate by the load fraction (e.g.,actual heat input divided by the heat input during the performance stack test; for 50 percent load, multiply the injection rate operating limit by 0.5).
5. Any other add-on air pollution control type.	This option is for boilers that operate dry control systems. Boilers must maintain opacity to less than or equal to 10 percent opacity (daily block average).
6. Fuel analysis	Maintain the fuel type or fuel mixture (annual average) such that the mercury emission rate calculated according to § 63.11211(c) are less than the applicable emission limit for mercury.
7. Performance stack testing	For boilers that demonstrate compliance with a performance stack test, maintain the operating load of each unit such that it does not exceed 110 percent of the average operating load recorded during the most recent performance stack test.

If you demonstrate compliance with applicable emission limits using . . .	You must meet these operating limits except during periods of startup and shutdown . . .
8. Oxygen analyzer system	For boilers subject to a CO emission limit that demonstrate compliance with an oxygen analyzer system as specified in § 63.11224(a), maintain the 30-day rolling average oxygen level at or above the minimum oxygen level as defined in § 63.11237. This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.11224(a)(7).

[78 FR 7519, Feb. 1, 2013]

Table 4 to Subpart JJJJJJ of Part 63—Performance (Stack) Testing Requirements

As stated in § 63.11212, you must comply with the following requirements for performance (stack) test for affected sources:

To conduct a performance test for the following pollutant. . .	You must. . .	Using. . .
1. Particulate Matter	a. Select sampling ports location and the number of traverse points	Method 1 in appendix A-1 to part 60 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G in appendix A-2 to part 60 of this chapter.
	c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B in appendix A-2 to part 60 of this chapter, or ASTM D6522-00 (Reapproved 2005),[a] or ANSI/ASME PTC 19.10-1981. [a]
	d. Measure the moisture content of the stack gas	Method 4 in appendix A-3 to part 60 of this chapter.

To conduct a performance test for the following pollutant. . .	**You must. . .**	**Using. . .**
	e. Measure the particulate matter emission concentration	Method 5 or 17 (positive pressure fabric filters must use Method 5D) in appendix A-3 and A-6 to part 60 of this chapter and a minimum 1 dscm of sample volume per run.
	f. Convert emissions concentration to lb/MMBtu emission rates	Method 19 F-factor methodology in appendix A-7 to part 60 of this chapter.
2. Mercury	a. Select sampling ports location and the number of traverse points	Method 1 in appendix A-1 to part 60 of this chapter.
	b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2F, or 2G in appendix A-2 to part 60 of this chapter.
	c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B in appendix A-2 to part 60 of this chapter, or ASTM D6522-00 (Reapproved 2005) ,[a]or ANSI/ASME PTC 19.10-1981. [a]
	d. Measure the moisture content of the stack gas	Method 4 in appendix A-3 to part 60 of this chapter.
	e. Measure the mercury emission concentration	Method 29, 30A, or 30B in appendix A-8 to part 60 of this chapter or Method 101A in appendix B to part 61 of this chapter or ASTM Method D6784-02.[a]Collect a minimum 2 dscm of sample volume with Method 29 of 101A per run. Use a minimum run time of 2 hours with Method 30A.
	f. Convert emissions concentration to lb/MMBtu emission rates	Method 19 F-factor methodology in appendix A-7 to part 60 of this chapter.

To conduct a performance test for the following pollutant. . .	**You must. . .**	**Using. . .**
3. Carbon Monoxide	a. Select the sampling ports location and the number of traverse points	Method 1 in appendix A-1 to part 60 of this chapter.
	b. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B in appendix A-2 to part 60 of this chapter, or ASTM D6522-00 (Reapproved 2005),[a]or ANSI/ASME PTC 19.10-1981.[a]
	c. Measure the moisture content of the stack gas	Method 4 in appendix A-3 to part 60 of this chapter.
	d. Measure the carbon monoxide emission concentration	Method 10, 10A, or 10B in appendix A-4 to part 60 of this chapter or ASTM D6522-00 (Reapproved 2005) [a]and a minimum 1 hour sampling time per run.

[a] Incorporated by reference, see § 63.14.

Table 5 to Subpart JJJJJJ of Part 63—Fuel Analysis Requirements

As stated in § 63.11213, you must comply with the following requirements for fuel analysis testing for affected sources:

To conduct a fuel analysis for the following pollutant . . .	**You must. . .**	**Using . . .**
1. Mercury	a. Collect fuel samples	Procedure in § 63.11213(b) or ASTM D2234/D2234M [a](for coal) or ASTM D6323 [a](for biomass) or equivalent.
	b. Compose fuel samples	Procedure in § 63.11213(b) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B [a](for solid samples) or EPA SW-846-3020A [a](for liquid samples) or ASTM D2013/D2013M [a](for coal) or ASTM D5198 [a](for biomass) or equivalent.

	d. Determine heat content of the fuel type	ASTM D5865 [a](for coal) or ASTM E711 [a](for biomass) or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 [a]or ASTM E871 [a]or equivalent.
	f. Measure mercury concentration in fuel sample	ASTM D6722 [a](for coal) or EPA SW-846-7471B [a](for solid samples) or EPA SW-846-7470A [a](for liquid samples) or equivalent.
	g. Convert concentrations into units of lb/MMBtu of heat content	

[a] Incorporated by reference, see § 63.14.

Table 6 to Subpart JJJJJJ of Part 63—Establishing Operating Limits

As stated in § 63.11211, you must comply with the following requirements for establishing operating limits:

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
1. PM or mercury	a. Wet scrubber operating parameters	Establish site-specific minimum scrubber pressure drop and minimum scrubber liquid flow rate operating limits according to § 63.11211(b)	Data from the pressure drop and liquid flow rate monitors and the PM or mercury performance stack tests	(a) You must collect pressure drop and liquid flow rate data every 15 minutes during the entire period of the performance stack tests;
				(b) Determine the average pressure drop and liquid flow rate for each individual test run in the three-run performance stack test by computing the average of all the 15-minute readings taken during each test run.
	b. Electrostatic precipitator operating parameters	Establish a site-specific minimum total secondary electric power operating limit according to § 63.11211(b)	Data from the secondary electric power monitors and the PM or mercury performance stack tests	(a) You must collect secondary electric power data every 15 minutes during the entire period of the performance stack tests;
				(b) Determine the average total secondary electric power for each individual test run in the three-run performance stack test by computing the average of all the 15-minute readings taken during each test run.

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
2. Mercury	Dry sorbent or activated carbon injection rate operating parameters	Establish a site-specific minimum sorbent or activated carbon injection rate operating limit according to § 63.11211(b)	Data from the sorbent or activated carbon injection rate monitors and the mercury performance stack tests	(a) You must collect sorbent or activated carbon injection rate data every 15 minutes during the entire period of the performance stack tests;
				(b) Determine the average sorbent or activated carbon injection rate for each individual test run in the three-run performance stack test by computing the average of all the 15-minute readings taken during each test run.
				(c) When your unit operates at lower loads, multiply your sorbent or activated carbon injection rate by the load fraction (e.g., actual heat input divided by heat input during performance stack test, for 50 percent load, multiply the injection rate operating limit by 0.5) to determine the required injection rate.
3. CO	Oxygen	Establish a unit-specific limit for minimum oxygen level	Data from the oxygen analyzer system specified in § 63.11224(a)	(a) You must collect oxygen data every 15 minutes during the entire period of the performance stack tests;

If you have an applicable emission limit for . . .	And your operating limits are based on . . .	You must . . .	Using . . .	According to the following requirements
				(b) Determine the average hourly oxygen concentration for each individual test run in the three-run performance stack test by computing the average of all the 15-minute readings taken during each test run.
4. Any pollutant for which compliance is demonstrated by a performance stack test	Boiler operating load	Establish a unit-specific limit for maximum operating load according to § 63.11212(c)	Data from the operating load monitors (fuel feed monitors or steam generation monitors)	(a) You must collect operating load data (fuel feed rate or steam generation data) every 15 minutes during the entire period of the performance test.
				(b) Determine the average operating load by computing the hourly averages using all of the 15-minute readings taken during each performance test.
				(c) Determine the average of the three test run averages during the performance test, and multiply this by 1.1 (110 percent) as your operating limit.

[78 FR 7520, Feb. 1, 2013]

Table 7 to Subpart JJJJJJ of Part 63—Demonstrating Continuous Compliance

As stated in § 63.11222, you must show continuous compliance with the emission limitations for affected sources according to the following:

If you must meet the following operating limits . . .	You must demonstrate continuous compliance by . . .

If you must meet the following operating limits . . .	**You must demonstrate continuous compliance by . . .**
1. Opacity	a. Collecting the opacity monitoring system data according to § 63.11224(e) and § 63.11221; and
	b. Reducing the opacity monitoring data to 6-minute averages; and
	c. Maintaining opacity to less than or equal to 10 percent (daily block average).
2. Fabric Filter Bag Leak Detection Operation	Installing and operating a bag leak detection system according to § 63.11224(f) and operating the fabric filter such that the requirements in § 63.11222(a)(4) are met.
3. Wet Scrubber Pressure Drop and Liquid Flow Rate	a. Collecting the pressure drop and liquid flow rate monitoring system data according to §§ 63.11224 and 63.11221; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average pressure drop and liquid flow rate at or above the minimum pressure drop and minimum liquid flow rate according to § 63.11211.
4. Dry Scrubber Sorbent or Activated Carbon Injection Rate	a. Collecting the sorbent or activated carbon injection rate monitoring system data for the dry scrubber according to §§ 63.11224 and 63.11221; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average sorbent or activated carbon injection rate at or above the minimum sorbent or activated carbon injection rate according to § 63.11211.
5. Electrostatic Precipitator Total Secondary Electric Power	a. Collecting the total secondary electric power monitoring system data for the electrostatic precipitator according to §§ 63.11224 and 63.11221; and
	b. Reducing the data to 30-day rolling averages; and

If you must meet the following operating limits . . .	You must demonstrate continuous compliance by . . .
	c. Maintaining the 30-day rolling average total secondary electric power at or above the minimum total secondary electric power according to § 63.11211.
6. Fuel Pollutant Content	a. Only burning the fuel types and fuel mixtures used to demonstrate compliance with the applicable emission limit according to § 63.11213 as applicable; and
	b. Keeping monthly records of fuel use according to §§ 63.11222(a)(2) and 63.11225(b)(4).
7. Oxygen content	a. Continuously monitoring the oxygen content of flue gas according to § 63.11224 (This requirement does not apply to units that install an oxygen trim system since these units will set the trim system to the level specified in § 63.11224(a)(7)); and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average oxygen content at or above the minimum oxygen level established during the most recent CO performance test.
8. CO emissions	a. Continuously monitoring the CO concentration in the combustion exhaust according to §§ 63.11224 and 63.11221; and
	b. Correcting the data to 3 percent oxygen, and reducing the data to 1-hour averages; and
	c. Reducing the data from the hourly averages to 10-day rolling averages; and
	d. Maintaining the 10-day rolling average CO concentration at or below the applicable emission limit in Table 1 to this subpart.
9. Boiler operating load	a. Collecting operating load data (fuel feed rate or steam generation data) every 15 minutes; and
	b. Reducing the data to 30-day rolling averages; and
	c. Maintaining the 30-day rolling average at or below the operating limit established during the performance test according to § 63.11212(c) and Table 6 to this subpart.

[78 FR 7521, Feb. 1, 2013]

Table 8 to Subpart JJJJJJ of Part 63—Applicability of General Provisions to Subpart JJJJJJ

As stated in § 63.11235, you must comply with the applicable General Provisions according to the following:

General provisions cite	Subject	Does it apply?
§ 63.1	Applicability	Yes.
§ 63.2	Definitions	Yes. Additional terms defined in § 63.11237.
§ 63.3	Units and Abbreviations	Yes.
§ 63.4	Prohibited Activities and Circumvention	Yes.
§ 63.5	Preconstruction Review and Notification Requirements	No
§ 63.6(a), (b)(1)-(b)(5), (b)(7), (c), (f)(2)-(3), (g), (i), (j)	Compliance with Standards and Maintenance Requirements	Yes.
§ 63.6(e)(1)(i)	General Duty to minimize emissions	No.See§ 63.11205 for general duty requirement.
§ 63.6(e)(1)(ii)	Requirement to correct malfunctions ASAP	No.
§ 63.6(e)(3)	SSM Plan	No.
§ 63.6(f)(1)	SSM exemption	No.
§ 63.6(h)(1)	SSM exemption	No.
§ 63.6(h)(2) to (9)	Determining compliance with opacity emission standards	Yes.
§ 63.7(a), (b), (c), (d) , (e)(2)-(e)(9), (f), (g), and (h)	Performance Testing Requirements	Yes.

General provisions cite	Subject	Does it apply?
§ 63.7(e)(1)	Performance testing	No.See§ 63.11210.
§ 63.8(a), (b), (c)(1), (c)(1)(ii), (c)(2) to (c)(9), (d)(1) and (d)(2), (e),(f), and (g)	Monitoring Requirements	Yes.
§ 63.8(c)(1)(i)	General duty to minimize emissions and CMS operation	No.
§ 63.8(c)(1)(iii)	Requirement to develop SSM Plan for CMS	No.
§ 63.8(d)(3)	Written procedures for CMS	Yes, except for the last sentence, which refers to an SSM plan. SSM plans are not required.
§ 63.9	Notification Requirements	Yes, excluding the information required in § 63.9(h)(2)(i)(B), (D), (E) and (F). See § 63.11225.
§ 63.10(a) and (b)(1)	Recordkeeping and Reporting Requirements	Yes.
§ 63.10(b)(2)(i)	Recordkeeping of occurrence and duration of startups or shutdowns	No.
§ 63.10(b)(2)(ii)	Recordkeeping of malfunctions	No.See§ 63.11225 for recordkeeping of (1) occurrence and duration and (2) actions taken during malfunctions.
§ 63.10(b)(2)(iii)	Maintenance records	Yes.
§ 63.10(b)(2)(iv) and (v)	Actions taken to minimize emissions during SSM	No.
§ 63.10(b)(2)(vi)	Recordkeeping for CMS malfunctions	Yes.
§ 63.10(b)(2)(vii) to (xiv)	Other CMS requirements	Yes.

General provisions cite	Subject	Does it apply?
§ 63.10(b)(3)	Recordkeeping requirements for applicability determinations	No.
§ 63.10(c)(1) to (9)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(10)	Recording nature and cause of malfunctions	No.See§ 63.11225 for malfunction recordkeeping requirements.
§ 63.10(c)(11)	Recording corrective actions	No.See§ 63.11225 for malfunction recordkeeping requirements.
§ 63.10(c)(12) and (13)	Recordkeeping for sources with CMS	Yes.
§ 63.10(c)(15)	Allows use of SSM plan	No.
§ 63.10(d)(1) and (2)	General reporting requirements	Yes.
§ 63.10(d)(3)	Reporting opacity or visible emission observation results	No.
§ 63.10(d)(4)	Progress reports under an extension of compliance	Yes.
§ 63.10(d)(5)	SSM reports	No.See§ 63.11225 for malfunction reporting requirements.
§ 63.10(e)	Additional reporting requirements for sources with CMS	Yes.
§ 63.10(f)	Waiver of recordkeeping or reporting requirements	Yes.
§ 63.11	Control Device Requirements	No.

General provisions cite	Subject	Does it apply?
§ 63.12	State Authority and Delegation	Yes.
§ 63.13-63.16	Addresses, Incorporation by Reference, Availability of Information, Performance Track Provisions	Yes.
§ 63.1(a)(5), (a)(7)-(a)(9), (b)(2), (c)(3)-(4), (d), 63.6(b)(6), (c)(3), (c)(4), (d), (e)(2), (e)(3)(ii), (h)(3), (h)(5)(iv), 63.8(a)(3), 63.9(b)(3), (h)(4), 63.10(c)(2)-(4), (c)(9)		

[Downloaded for the eCFR 5/2013]

Attachment E
to MSOP No. M133-33057-00005

Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

SOURCE: 69 FR 33506, June 15, 2004, unless otherwise noted.

What This Subpart Covers

§ 63.6580 What is the purpose of subpart ZZZZ?

Subpart ZZZZ establishes national emission limitations and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines (RICE) located at major and area sources of HAP emissions. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emission limitations and operating limitations.

[73 FR 3603, Jan. 18, 2008]

§ 63.6585 Am I subject to this subpart?

You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand.

(a) A stationary RICE is any internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

(b) A major source of HAP emissions is a plant site that emits or has the potential to emit any single HAP at a rate of 10 tons (9.07 megagrams) or more per year or any combination of HAP at a rate of 25 tons (22.68 megagrams) or more per year, except that for oil and gas production facilities, a major source of HAP emissions is determined for each surface site.

(c) An area source of HAP emissions is a source that is not a major source.

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

(e) If you are an owner or operator of a stationary RICE used for national security purposes, you may be eligible to request an exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C.

(f) The emergency stationary RICE listed in paragraphs (f)(1) through (3) of this section are not subject to this subpart. The stationary RICE must meet the definition of an emergency stationary RICE in § 63.6675, which includes operating according to the provisions specified in § 63.6640(f).

(1) Existing residential emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(2) Existing commercial emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

(3) Existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) and that do not operate for the purpose specified in § 63.6640(f)(4)(ii).

[69 FR 33506, June 15, 2004, as amended at 73 FR 3603, Jan. 18, 2008; 78 FR 6700, Jan. 30, 2013]

§ 63.6590   What parts of my plant does this subpart cover?

This subpart applies to each affected source.

(a) Affected source. An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand.

(1) Existing stationary RICE.

(i) For stationary RICE with a site rating of more than 500 brake horsepower (HP) located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before December 19, 2002.

(ii) For stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iii) For stationary RICE located at an area source of HAP emissions, a stationary RICE is existing if you commenced construction or reconstruction of the stationary RICE before June 12, 2006.

(iv) A change in ownership of an existing stationary RICE does not make that stationary RICE a new or reconstructed stationary RICE.

(2) New stationary RICE. (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is new if you commenced construction of the stationary RICE on or after June 12, 2006.

(3) Reconstructed stationary RICE. (i) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after December 19, 2002.

(ii) A stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(iii) A stationary RICE located at an area source of HAP emissions is reconstructed if you meet the definition of reconstruction in § 63.2 and reconstruction is commenced on or after June 12, 2006.

(b) Stationary RICE subject to limited requirements. (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of this subpart and of subpart A of this part except for the initial notification requirements of § 63.6645(f).

(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(ii) The stationary RICE is a new or reconstructed limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(2) A new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis must meet the initial notification requirements of § 63.6645(f) and the requirements of §§ 63.6625(c), 63.6650(g), and 63.6655(c). These stationary RICE do not have to meet the emission limitations and operating limitations of this subpart.

(3) The following stationary RICE do not have to meet the requirements of this subpart and of subpart A of this part, including initial notification requirements:

(i) Existing spark ignition 2 stroke lean burn (2SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(ii) Existing spark ignition 4 stroke lean burn (4SLB) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(iii) Existing emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(iv) Existing limited use stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions;

(v) Existing stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(c) Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part

60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.

(1) A new or reconstructed stationary RICE located at an area source;

(2) A new or reconstructed 2SLB stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(3) A new or reconstructed 4SLB stationary RICE with a site rating of less than 250 brake HP located at a major source of HAP emissions;

(4) A new or reconstructed spark ignition 4 stroke rich burn (4SRB) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(5) A new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis;

(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;

(7) A new or reconstructed compression ignition (CI) stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9674, Mar. 3, 2010; 75 FR 37733, June 30, 2010; 75 FR 51588, Aug. 20, 2010; 78 FR 6700, Jan. 30, 2013]

§ 63.6595 When do I have to comply with this subpart?

(a) Affected sources. (1) If you have an existing stationary RICE, excluding existing non-emergency CI stationary RICE, with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the applicable emission limitations, operating limitations and other requirements no later than June 15, 2007. If you have an existing non-emergency CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, an existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary CI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than May 3, 2013. If you have an existing stationary SI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions, or an existing stationary SI RICE located at an area source of HAP emissions, you must comply with the applicable emission limitations, operating limitations, and other requirements no later than October 19, 2013.

(2) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart no later than August 16, 2004.

(3) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions after August 16, 2004, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(4) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(5) If you start up your new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(6) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions before January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart no later than January 18, 2008.

(7) If you start up your new or reconstructed stationary RICE located at an area source of HAP emissions after January 18, 2008, you must comply with the applicable emission limitations and operating limitations in this subpart upon startup of your affected source.

(b) Area sources that become major sources. If you have an area source that increases its emissions or its potential to emit such that it becomes a major source of HAP, the compliance dates in paragraphs (b)(1) and (2) of this section apply to you.

(1) Any stationary RICE for which construction or reconstruction is commenced after the date when your area source becomes a major source of HAP must be in compliance with this subpart upon startup of your affected source.

(2) Any stationary RICE for which construction or reconstruction is commenced before your area source becomes a major source of HAP must be in compliance with the provisions of this subpart that are applicable to RICE located at major sources within 3 years after your area source becomes a major source of HAP.

(c) If you own or operate an affected source, you must meet the applicable notification requirements in § 63.6645 and in 40 CFR part 63, subpart A.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3604, Jan. 18, 2008; 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 78 FR 6701, Jan. 30, 2013]

Emission and Operating Limitations

§ 63.6600 What emission limitations and operating limitations must I meet if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing, new, or reconstructed spark ignition 4SRB stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 1a to this subpart and the operating limitations in Table 1b to this subpart which apply to you.

(b) If you own or operate a new or reconstructed 2SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, a new or reconstructed 4SLB stationary RICE with a site rating of more than 500 brake HP located at major source of HAP emissions, or a new or reconstructed CI stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

(c) If you own or operate any of the following stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the emission limitations in Tables 1a, 2a, 2c, and 2d to this subpart or operating limitations in Tables 1b and 2b to this subpart: an existing 2SLB stationary RICE; an existing 4SLB stationary RICE; a stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis; an emergency stationary RICE; or a limited use stationary RICE.

(d) If you own or operate an existing non-emergency stationary CI RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations in Table 2c to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010]

§ 63.6601 What emission limitations must I meet if I own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP and less than or equal to 500 brake HP located at a major source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart. If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at major source of HAP emissions manufactured on or after January 1, 2008, you must comply with the emission limitations in Table 2a to this subpart and the operating limitations in Table 2b to this subpart which apply to you.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 9675, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010]

§ 63.6602 What emission limitations and other requirements must I meet if I own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions, you must comply with the emission limitations and other requirements in Table 2c to this subpart which apply to you. Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

[78 FR 6701, Jan. 30, 2013]

§ 63.6603 What emission limitations, operating limitations, and other requirements must I meet if I own or operate an existing stationary RICE located at an area source of HAP emissions?

Compliance with the numerical emission limitations established in this subpart is based on the results of testing the average of three 1-hour runs using the testing requirements and procedures in § 63.6620 and Table 4 to this subpart.

(a) If you own or operate an existing stationary RICE located at an area source of HAP emissions, you must comply with the requirements in Table 2d to this subpart and the operating limitations in Table 2b to this subpart that apply to you.

(b) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meets either paragraph (b)(1) or (2) of this section, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. Existing stationary non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP that meet either paragraph (b)(1) or (2) of this section must meet the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart.

(1) The area source is located in an area of Alaska that is not accessible by the Federal Aid Highway System (FAHS).

(2) The stationary RICE is located at an area source that meets paragraphs (b)(2)(i), (ii), and (iii) of this section.

(i) The only connection to the FAHS is through the Alaska Marine Highway System (AMHS), or the stationary RICE operation is within an isolated grid in Alaska that is not connected to the statewide electrical grid referred to as the Alaska Railbelt Grid.

(ii) At least 10 percent of the power generated by the stationary RICE on an annual basis is used for residential purposes.

(iii) The generating capacity of the area source is less than 12 megawatts, or the stationary RICE is used exclusively for backup power for renewable energy.

(c) If you own or operate an existing stationary non-emergency CI RICE with a site rating of more than 300 HP located on an offshore vessel that is an area source of HAP and is a nonroad vehicle that is an Outer Continental Shelf (OCS) source as defined in 40 CFR 55.2, you do not have to meet the numerical CO emission limitations specified in Table 2d of this subpart. You must meet all of the following management practices:

(1) Change oil every 1,000 hours of operation or annually, whichever comes first. Sources have the option to utilize an oil analysis program as described in § 63.6625(i) in order to extend the specified oil change requirement.

(2) Inspect and clean air filters every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(3) Inspect fuel filters and belts, if installed, every 750 hours of operation or annually, whichever comes first, and replace as necessary.

(4) Inspect all flexible hoses every 1,000 hours of operation or annually, whichever comes first, and replace as necessary.

(d) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and that is subject to an enforceable state or local standard that requires the engine to be replaced no later than June 1, 2018, you may until January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018, choose to comply with the management practices that are shown for stationary non-emergency CI RICE with a site rating of less than or equal to 300 HP in Table 2d of this subpart instead of the applicable emission limitations in Table 2d, operating limitations in Table 2b, and crankcase ventilation system requirements in § 63.6625(g). You must comply with the emission limitations in Table 2d and operating limitations in Table 2b that apply for non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018. You must also comply with the crankcase ventilation system requirements in

§ 63.6625(g) by January 1, 2015, or 12 years after the installation date of the engine (whichever is later), but not later than June 1, 2018.

(e) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 3 (Tier 2 for engines above 560 kilowatt (kW)) emission standards in Table 1 of 40 CFR 89.112, you may comply with the requirements under this part by meeting the requirements for Tier 3 engines (Tier 2 for engines above 560 kW) in 40 CFR part 60 subpart IIII instead of the emission limitations and other requirements that would otherwise apply under this part for existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions.

(f) An existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP must meet the definition of remote stationary RICE in § 63.6675 on the initial compliance date for the engine, October 19, 2013, in order to be considered a remote stationary RICE under this subpart. Owners and operators of existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that meet the definition of remote stationary RICE in § 63.6675 of this subpart as of October 19, 2013 must evaluate the status of their stationary RICE every 12 months. Owners and operators must keep records of the initial and annual evaluation of the status of the engine. If the evaluation indicates that the stationary RICE no longer meets the definition of remote stationary RICE in § 63.6675 of this subpart, the owner or operator must comply with all of the requirements for existing non-emergency SI 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at area sources of HAP that are not remote stationary RICE within 1 year of the evaluation.

[75 FR 9675, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6701, Jan. 30, 2013]

§ 63.6604 What fuel requirements must I meet if I own or operate a stationary CI RICE?

(a) If you own or operate an existing non-emergency, non-black start CI stationary RICE with a site rating of more than 300 brake HP with a displacement of less than 30 liters per cylinder that uses diesel fuel, you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel.

(b) Beginning January 1, 2015, if you own or operate an existing emergency CI stationary RICE with a site rating of more than 100 brake HP and a displacement of less than 30 liters per cylinder that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(c) Beginning January 1, 2015, if you own or operate a new emergency CI stationary RICE with a site rating of more than 500 brake HP and a displacement of less than 30 liters per cylinder located at a major source of HAP that uses diesel fuel and operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii), you must use diesel fuel that meets the requirements in 40 CFR 80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(d) Existing CI stationary RICE located in Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2), or are on offshore vessels that meet § 63.6603(c) are exempt from the requirements of this section.

[78 FR 6702, Jan. 30, 2013]

General Compliance Requirements

§ 63.6605 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emission limitations, operating limitations, and other requirements in this subpart that apply to you at all times.

(b) At all times you must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require you to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.

[75 FR 9675, Mar. 3, 2010, as amended at 78 FR 6702, Jan. 30, 2013]

Testing and Initial Compliance Requirements

§ 63.6610 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions?

If you own or operate a stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct the initial performance test or other initial compliance demonstrations in Table 4 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you must demonstrate initial compliance with either the proposed emission limitations or the promulgated emission limitations no later than February 10, 2005 or no later than 180 days after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(c) If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004 and own or operate stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, and you chose to comply with the proposed emission limitations when demonstrating initial compliance, you must conduct a second performance test to demonstrate compliance with the promulgated emission limitations by December 13, 2007 or after startup of the source, whichever is later, according to § 63.7(a)(2)(ix).

(d) An owner or operator is not required to conduct an initial performance test on units for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (d)(1) through (5) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

(5) The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3605, Jan. 18, 2008]

§ 63.6611 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate a new or reconstructed 4SLB SI stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions?

If you own or operate a new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must conduct an initial performance test within 240 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions specified in Table 4 to this subpart, as appropriate.

[73 FR 3605, Jan. 18, 2008, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6612 By what date must I conduct the initial performance tests or other initial compliance demonstrations if I own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions?

If you own or operate an existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing stationary RICE located at an area source of HAP emissions you are subject to the requirements of this section.

(a) You must conduct any initial performance test or other initial compliance demonstration according to Tables 4 and 5 to this subpart that apply to you within 180 days after the compliance date that is specified for your stationary RICE in § 63.6595 and according to the provisions in § 63.7(a)(2).

(b) An owner or operator is not required to conduct an initial performance test on a unit for which a performance test has been previously conducted, but the test must meet all of the conditions described in paragraphs (b)(1) through (4) of this section.

(1) The test must have been conducted using the same methods specified in this subpart, and these methods must have been followed correctly.

(2) The test must not be older than 2 years.

(3) The test must be reviewed and accepted by the Administrator.

(4) Either no process or equipment changes must have been made since the test was performed, or the owner or operator must be able to demonstrate that the results of the performance test, with or without adjustments, reliably demonstrate compliance despite process or equipment changes.

[75 FR 9676, Mar. 3, 2010, as amended at 75 FR 51589, Aug. 20, 2010]

§ 63.6615 When must I conduct subsequent performance tests?

If you must comply with the emission limitations and operating limitations, you must conduct subsequent performance tests as specified in Table 3 of this subpart.

§ 63.6620 What performance tests and other procedures must I use?

(a) You must conduct each performance test in Tables 3 and 4 of this subpart that applies to you.

(b) Each performance test must be conducted according to the requirements that this subpart specifies in Table 4 to this subpart. If you own or operate a non-operational stationary RICE that is subject to performance testing, you do not need to start up the engine solely to conduct the performance test. Owners and operators of a non-operational engine can conduct the performance test when the engine is started up again. The test must be conducted at any load condition within plus or minus 10 percent of 100 percent load for the stationary RICE listed in paragraphs (b)(1) through (4) of this section.

(1) Non-emergency 4SRB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(2) New non-emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 brake HP located at a major source of HAP emissions.

(3) New non-emergency 2SLB stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(4) New non-emergency CI stationary RICE with a site rating of greater than 500 brake HP located at a major source of HAP emissions.

(c) [Reserved]

(d) You must conduct three separate test runs for each performance test required in this section, as specified in § 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in this subpart.

(e)(1) You must use Equation 1 of this section to determine compliance with the percent reduction requirement:

$$\frac{C_i - C_o}{C_i} \times 100 = R \quad (Eq.\ 1)$$

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Where:

C_i = concentration of carbon monoxide (CO), total hydrocarbons (THC), or formaldehyde at the control device inlet,

C_o = concentration of CO, THC, or formaldehyde at the control device outlet, and

R = percent reduction of CO, THC, or formaldehyde emissions.

(2) You must normalize the CO, THC, or formaldehyde concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO_2). If pollutant concentrations are to be corrected to 15 percent oxygen and CO_2 concentration is measured in lieu of oxygen concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (e)(2)(i) through (iii) of this section.

(i) Calculate the fuel-specific F_o value for the fuel burned during the test using values obtained from Method 19, Section 5.2, and the following equation:

$$F_o = \frac{0.209 \ F_d}{F_c} \quad (Eq. 2)$$

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Where:

F_o = Fuel factor based on the ratio of oxygen volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is oxygen, percent/100.

F_d = Ratio of the volume of dry effluent gas to the gross calorific value of the fuel from Method 19, dsm^3 /J ($dscf/10^6$ Btu).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3 /J ($dscf/10^6$ Btu)

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{CO2} = \frac{5.9}{F_o} \quad (Eq. 3)$$

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Where:

X_{CO2} = CO_2 correction factor, percent.

5.9 = 20.9 percent O_2 —15 percent O_2 , the defined O_2 correction value, percent.

(iii) Calculate the CO, THC, and formaldehyde gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

$$C_{adj} = C_d \frac{X_{CO2}}{\%CO_2} \quad (Eq. 4)$$

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Where:

C_{adj} = Calculated concentration of CO, THC, or formaldehyde adjusted to 15 percent O_2.

C_d = Measured concentration of CO, THC, or formaldehyde, uncorrected.

X_{CO2} = CO_2 correction factor, percent.

$\%CO_2$ = Measured CO_2 concentration measured, dry basis, percent.

(f) If you comply with the emission limitation to reduce CO and you are not using an oxidation catalyst, if you comply with the emission limitation to reduce formaldehyde and you are not using NSCR, or if you comply with the emission limitation to limit the concentration of formaldehyde in the stationary RICE exhaust and you are not using an oxidation catalyst or NSCR, you must petition the Administrator for operating limitations to be established during the initial performance test and continuously monitored thereafter; or for approval of no operating limitations. You must not conduct the initial performance test until after the petition has been approved by the Administrator.

(g) If you petition the Administrator for approval of operating limitations, your petition must include the information described in paragraphs (g)(1) through (5) of this section.

(1) Identification of the specific parameters you propose to use as operating limitations;

(2) A discussion of the relationship between these parameters and HAP emissions, identifying how HAP emissions change with changes in these parameters, and how limitations on these parameters will serve to limit HAP emissions;

(3) A discussion of how you will establish the upper and/or lower values for these parameters which will establish the limits on these parameters in the operating limitations;

(4) A discussion identifying the methods you will use to measure and the instruments you will use to monitor these parameters, as well as the relative accuracy and precision of these methods and instruments; and

(5) A discussion identifying the frequency and methods for recalibrating the instruments you will use for monitoring these parameters.

(h) If you petition the Administrator for approval of no operating limitations, your petition must include the information described in paragraphs (h)(1) through (7) of this section.

(1) Identification of the parameters associated with operation of the stationary RICE and any emission control device which could change intentionally (e.g., operator adjustment, automatic controller adjustment, etc.) or unintentionally (e.g., wear and tear, error, etc.) on a routine basis or over time;

(2) A discussion of the relationship, if any, between changes in the parameters and changes in HAP emissions;

(3) For the parameters which could change in such a way as to increase HAP emissions, a discussion of whether establishing limitations on the parameters would serve to limit HAP emissions;

(4) For the parameters which could change in such a way as to increase HAP emissions, a discussion of how you could establish upper and/or lower values for the parameters which would establish limits on the parameters in operating limitations;

(5) For the parameters, a discussion identifying the methods you could use to measure them and the instruments you could use to monitor them, as well as the relative accuracy and precision of the methods and instruments;

(6) For the parameters, a discussion identifying the frequency and methods for recalibrating the instruments you could use to monitor them; and

(7) A discussion of why, from your point of view, it is infeasible or unreasonable to adopt the parameters as operating limitations.

(i) The engine percent load during a performance test must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9676, Mar. 3, 2010; 78 FR 6702, Jan. 30, 2013]

§ 63.6625 What are my monitoring, installation, collection, operation, and maintenance requirements?

(a) If you elect to install a CEMS as specified in Table 5 of this subpart, you must install, operate, and maintain a CEMS to monitor CO and either O_2 or CO_2 according to the requirements in paragraphs (a)(1) through (4) of this section. If you are meeting a requirement to reduce CO emissions, the CEMS must be installed at both the inlet and outlet of the control device. If you are meeting a requirement to limit the concentration of CO, the CEMS must be installed at the outlet of the control device.

(1) Each CEMS must be installed, operated, and maintained according to the applicable performance specifications of 40 CFR part 60, appendix B.

(2) You must conduct an initial performance evaluation and an annual relative accuracy test audit (RATA) of each CEMS according to the requirements in § 63.8 and according to the applicable performance specifications of 40 CFR part 60, appendix B as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.

(3) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period. You must have at least two data points, with each representing a different 15-minute period, to have a valid hour of data.

(4) The CEMS data must be reduced as specified in § 63.8(g)(2) and recorded in parts per million or parts per billion (as appropriate for the applicable limitation) at 15 percent oxygen or the equivalent CO_2 concentration.

(b) If you are required to install a continuous parameter monitoring system (CPMS) as specified in Table 5 of this subpart, you must install, operate, and maintain each CPMS according to the requirements in paragraphs (b)(1) through (6) of this section. For an affected source that is complying with the emission limitations and operating limitations on March 9, 2011, the requirements in paragraph (b) of this section are applicable September 6, 2011.

(1) You must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (b)(1)(i) through (v) of this section and in § 63.8(d). As specified in § 63.8(f)(4), you may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in paragraphs (b)(1) through (5) of this section in your site-specific monitoring plan.

(i) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;

(ii) Sampling interface (e.g., thermocouple) location such that the monitoring system will provide representative measurements;

(iii) Equipment performance evaluations, system accuracy audits, or other audit procedures;

(iv) Ongoing operation and maintenance procedures in accordance with provisions in § 63.8(c)(1)(ii) and (c)(3); and

(v) Ongoing reporting and recordkeeping procedures in accordance with provisions in § 63.10(c), (e)(1), and (e)(2)(i).

(2) You must install, operate, and maintain each CPMS in continuous operation according to the procedures in your site-specific monitoring plan.

(3) The CPMS must collect data at least once every 15 minutes (see also § 63.6635).

(4) For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.

(5) You must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in your site-specific monitoring plan at least annually.

(6) You must conduct a performance evaluation of each CPMS in accordance with your site-specific monitoring plan.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must monitor and record your fuel usage daily with separate fuel meters to measure the volumetric flow rate of each fuel. In addition, you must operate your stationary RICE in a manner which reasonably minimizes HAP emissions.

(d) If you are operating a new or reconstructed emergency 4SLB stationary RICE with a site rating of greater than or equal to 250 and less than or equal to 500 brake HP located at a major source of HAP emissions, you must install a non-resettable hour meter prior to the startup of the engine.

(e) If you own or operate any of the following stationary RICE, you must operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions:

(1) An existing stationary RICE with a site rating of less than 100 HP located at a major source of HAP emissions;

(2) An existing emergency or black start stationary RICE with a site rating of less than or equal to 500 HP located at a major source of HAP emissions;

(3) An existing emergency or black start stationary RICE located at an area source of HAP emissions;

(4) An existing non-emergency, non-black start stationary CI RICE with a site rating less than or equal to 300 HP located at an area source of HAP emissions;

(5) An existing non-emergency, non-black start 2SLB stationary RICE located at an area source of HAP emissions;

(6) An existing non-emergency, non-black start stationary RICE located at an area source of HAP emissions which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis.

(7) An existing non-emergency, non-black start 4SLB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(8) An existing non-emergency, non-black start 4SRB stationary RICE with a site rating less than or equal to 500 HP located at an area source of HAP emissions;

(9) An existing, non-emergency, non-black start 4SLB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year; and

(10) An existing, non-emergency, non-black start 4SRB stationary RICE with a site rating greater than 500 HP located at an area source of HAP emissions that is operated 24 hours or less per calendar year.

(f) If you own or operate an existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions or an existing emergency stationary RICE located at an area source of HAP emissions, you must install a non-resettable hour meter if one is not already installed.

(g) If you own or operate an existing non-emergency, non-black start CI engine greater than or equal to 300 HP that is not equipped with a closed crankcase ventilation system, you must comply with either paragraph (g)(1) or paragraph (2) of this section. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements. Existing CI engines located at area sources in areas of Alaska that meet either § 63.6603(b)(1) or § 63.6603(b)(2) do not have to meet the requirements of this paragraph (g). Existing CI engines located on offshore vessels that meet § 63.6603(c) do not have to meet the requirements of this paragraph (g).

(1) Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or

(2) Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(h) If you operate a new, reconstructed, or existing stationary engine, you must minimize the engine's time spent at idle during startup and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the emission standards applicable to all times other than startup in Tables 1a, 2a, 2c, and 2d to this subpart apply.

(i) If you own or operate a stationary CI engine that is subject to the work, operation or management practices in items 1 or 2 of Table 2c to this subpart or in items 1 or 4 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

(j) If you own or operate a stationary SI engine that is subject to the work, operation or management practices in items 6, 7, or 8 of Table 2c to this subpart or in items 5, 6, 7, 9, or 11 of Table 2d to this subpart, you have the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Tables 2c and 2d to this subpart. The oil analysis must be performed at the same frequency specified for changing the oil in Table 2c or 2d to this subpart. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within 2 business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within 2 business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.

[69 FR 33506, June 15, 2004, as amended at 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51589, Aug. 20, 2010; 76 FR 12866, Mar. 9, 2011; 78 FR 6703, Jan. 30, 2013]

§ 63.6630 How do I demonstrate initial compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate initial compliance with each emission limitation, operating limitation, and other requirement that applies to you according to Table 5 of this subpart.

(b) During the initial performance test, you must establish each operating limitation in Tables 1b and 2b of this subpart that applies to you.

(c) You must submit the Notification of Compliance Status containing the results of the initial compliance demonstration according to the requirements in § 63.6645.

(d) Non-emergency 4SRB stationary RICE complying with the requirement to reduce formaldehyde emissions by 76 percent or more can demonstrate initial compliance with the formaldehyde emission limit by testing for THC instead of formaldehyde. The testing must be conducted according to the requirements in Table 4 of this subpart. The average reduction of emissions of THC determined from the performance test must be equal to or greater than 30 percent.

(e) The initial compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least three test runs.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

[69 FR 33506, June 15, 2004, as amended at 78 FR 6704, Jan. 30, 2013]

Continuous Compliance Requirements

§ 63.6635 How do I monitor and collect data to demonstrate continuous compliance?

(a) If you must comply with emission and operating limitations, you must monitor and collect data according to this section.

(b) Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, you must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

(c) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

[69 FR 33506, June 15, 2004, as amended at 76 FR 12867, Mar. 9, 2011]

§ 63.6640 How do I demonstrate continuous compliance with the emission limitations, operating limitations, and other requirements?

(a) You must demonstrate continuous compliance with each emission limitation, operating limitation, and other requirements in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you according to methods specified in Table 6 to this subpart.

(b) You must report each instance in which you did not meet each emission limitation or operating limitation in Tables 1a and 1b, Tables 2a and 2b, Table 2c, and Table 2d to this subpart that apply to you. These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in § 63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.

(c) The annual compliance demonstration required for existing non-emergency 4SLB and 4SRB stationary RICE with a site rating of more than 500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year must be conducted according to the following requirements:

(1) The compliance demonstration must consist of at least one test run.

(2) Each test run must be of at least 15 minute duration, except that each test conducted using the method in appendix A to this subpart must consist of at least one measurement cycle and include at least 2 minutes of test data phase measurement.

(3) If you are demonstrating compliance with the CO concentration or CO percent reduction requirement, you must measure CO emissions using one of the CO measurement methods specified in Table 4 of this subpart, or using appendix A to this subpart.

(4) If you are demonstrating compliance with the THC percent reduction requirement, you must measure THC emissions using Method 25A, reported as propane, of 40 CFR part 60, appendix A.

(5) You must measure O_2 using one of the O_2 measurement methods specified in Table 4 of this subpart. Measurements to determine O_2 concentration must be made at the same time as the measurements for CO or THC concentration.

(6) If you are demonstrating compliance with the CO or THC percent reduction requirement, you must measure CO or THC emissions and O_2 emissions simultaneously at the inlet and outlet of the control device.

(7) If the results of the annual compliance demonstration show that the emissions exceed the levels specified in Table 6 of this subpart, the stationary RICE must be shut down as soon as safely possible, and appropriate corrective action must be taken (e.g., repairs, catalyst cleaning, catalyst replacement). The stationary RICE must be retested within 7 days of being restarted and the emissions must meet the levels specified in Table 6 of this subpart. If the retest shows that the emissions continue to exceed the specified levels, the stationary RICE must again be shut down as soon as safely possible, and the stationary RICE may not operate, except for purposes of startup and testing, until the owner/operator demonstrates through testing that the emissions do not exceed the levels specified in Table 6 of this subpart.

(d) For new, reconstructed, and rebuilt stationary RICE, deviations from the emission or operating limitations that occur during the first 200 hours of operation from engine startup (engine burn-in period) are not violations. Rebuilt stationary RICE means a stationary RICE that has been rebuilt as that term is defined in 40 CFR 94.11(a).

(e) You must also report each instance in which you did not meet the requirements in Table 8 to this subpart that apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following

RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing emergency stationary RICE, an existing limited use stationary RICE, or an existing stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in Table 8 to this subpart, except for the initial notification requirements: a new or reconstructed stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new or reconstructed emergency stationary RICE, or a new or reconstructed limited use stationary RICE.

(f) If you own or operate an emergency stationary RICE, you must operate the emergency stationary RICE according to the requirements in paragraphs (f)(1) through (4) of this section. In order for the engine to be considered an emergency stationary RICE under this subpart, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f)(1) through (4) of this section, is prohibited. If you do not operate the engine according to the requirements in paragraphs (f)(1) through (4) of this section, the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.

(1) There is no time limit on the use of emergency stationary RICE in emergency situations.

(2) You may operate your emergency stationary RICE for any combination of the purposes specified in paragraphs (f)(2)(i) through (iii) of this section for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by paragraphs (f)(3) and (4) of this section counts as part of the 100 hours per calendar year allowed by this paragraph (f)(2).

(i) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

(ii) Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3.

(iii) Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency.

(3) Emergency stationary RICE located at major sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(4) Emergency stationary RICE located at area sources of HAP may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are

counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph (f)(2) of this section. Except as provided in paragraphs (f)(4)(i) and (ii) of this section, the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(i) Prior to May 3, 2014, the 50 hours per year for non-emergency situations can be used for peak shaving or non-emergency demand response to generate income for a facility, or to otherwise supply power as part of a financial arrangement with another entity if the engine is operated as part of a peak shaving (load management program) with the local distribution system operator and the power is provided only to the facility itself or to support the local distribution system.

(ii) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:

(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.

(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.

(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.

(D) The power is provided only to the facility itself or to support the local transmission and distribution system.

(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3606, Jan. 18, 2008; 75 FR 9676, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6704, Jan. 30, 2013]

Notifications, Reports, and Records

§ 63.6645 What notifications must I submit and when?

(a) You must submit all of the notifications in §§ 63.7(b) and (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) through (e), and (g) and (h) that apply to you by the dates specified if you own or operate any of the following;

(1) An existing stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions.

(2) An existing stationary RICE located at an area source of HAP emissions.

(3) A stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.

(4) A new or reconstructed 4SLB stationary RICE with a site rating of greater than or equal to 250 HP located at a major source of HAP emissions.

(5) This requirement does not apply if you own or operate an existing stationary RICE less than 100 HP, an existing stationary emergency RICE, or an existing stationary RICE that is not subject to any numerical emission standards.

(b) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart, you must submit an Initial Notification not later than December 13, 2004.

(c) If you start up your new or reconstructed stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions on or after August 16, 2004, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(d) As specified in § 63.9(b)(2), if you start up your stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions before the effective date of this subpart and you are required to submit an initial notification, you must submit an Initial Notification not later than July 16, 2008.

(e) If you start up your new or reconstructed stationary RICE with a site rating of equal to or less than 500 brake HP located at a major source of HAP emissions on or after March 18, 2008 and you are required to submit an initial notification, you must submit an Initial Notification not later than 120 days after you become subject to this subpart.

(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with § 63.6590(b), your notification should include the information in § 63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).

(g) If you are required to conduct a performance test, you must submit a Notification of Intent to conduct a performance test at least 60 days before the performance test is scheduled to begin as required in § 63.7(b)(1).

(h) If you are required to conduct a performance test or other initial compliance demonstration as specified in Tables 4 and 5 to this subpart, you must submit a Notification of Compliance Status according to § 63.9(h)(2)(ii).

(1) For each initial compliance demonstration required in Table 5 to this subpart that does not include a performance test, you must submit the Notification of Compliance Status before the close of business on the 30th day following the completion of the initial compliance demonstration.

(2) For each initial compliance demonstration required in Table 5 to this subpart that includes a performance test conducted according to the requirements in Table 3 to this subpart, you must submit the Notification of Compliance Status, including the performance test results, before the close of business on the 60th day following the completion of the performance test according to § 63.10(d)(2).

(i) If you own or operate an existing non-emergency CI RICE with a site rating of more than 300 HP located at an area source of HAP emissions that is certified to the Tier 1 or Tier 2 emission standards in Table 1 of 40 CFR 89.112 and subject to an enforceable state or local standard requiring engine replacement and you intend to meet management practices rather than emission limits, as specified in

§ 63.6603(d), you must submit a notification by March 3, 2013, stating that you intend to use the provision in § 63.6603(d) and identifying the state or local regulation that the engine is subject to.

[73 FR 3606, Jan. 18, 2008, as amended at 75 FR 9677, Mar. 3, 2010; 75 FR 51591, Aug. 20, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6650 What reports must I submit and when?

(a) You must submit each report in Table 7 of this subpart that applies to you.

(b) Unless the Administrator has approved a different schedule for submission of reports under § 63.10(a), you must submit each report by the date in Table 7 of this subpart and according to the requirements in paragraphs (b)(1) through (b)(9) of this section.

(1) For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for your source in § 63.6595.

(2) For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for your affected source in § 63.6595.

(3) For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

(4) For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.

(5) For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), you may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in paragraphs (b)(1) through (b)(4) of this section.

(6) For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for your affected source in § 63.6595 and ending on December 31.

(7) For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in § 63.6595.

(8) For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9) For annual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than January 31.

(c) The Compliance report must contain the information in paragraphs (c)(1) through (6) of this section.

(1) Company name and address.

(2) Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with § 63.6605(b), including actions taken to correct a malfunction.

(5) If there are no deviations from any emission or operating limitations that apply to you, a statement that there were no deviations from the emission or operating limitations during the reporting period.

(6) If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(d) For each deviation from an emission or operating limitation that occurs for a stationary RICE where you are not using a CMS to comply with the emission or operating limitations in this subpart, the Compliance report must contain the information in paragraphs (c)(1) through (4) of this section and the information in paragraphs (d)(1) and (2) of this section.

(1) The total operating time of the stationary RICE at which the deviation occurred during the reporting period.

(2) Information on the number, duration, and cause of deviations (including unknown cause, if applicable), as applicable, and the corrective action taken.

(e) For each deviation from an emission or operating limitation occurring for a stationary RICE where you are using a CMS to comply with the emission and operating limitations in this subpart, you must include information in paragraphs (c)(1) through (4) and (e)(1) through (12) of this section.

(1) The date and time that each malfunction started and stopped.

(2) The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.

(3) The date, time, and duration that each CMS was out-of-control, including the information in § 63.8(c)(8).

(4) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.

(5) A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.

(6) A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.

(7) A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.

(8) An identification of each parameter and pollutant (CO or formaldehyde) that was monitored at the stationary RICE.

(9) A brief description of the stationary RICE.

(10) A brief description of the CMS.

(11) The date of the latest CMS certification or audit.

(12) A description of any changes in CMS, processes, or controls since the last reporting period.

(f) Each affected source that has obtained a title V operating permit pursuant to 40 CFR part 70 or 71 must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(g) If you are operating as a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must submit an annual report according to Table 7 of this subpart by the date specified unless the Administrator has approved a different schedule, according to the information described in paragraphs (b)(1) through (b)(5) of this section. You must report the data specified in (g)(1) through (g)(3) of this section.

(1) Fuel flow rate of each fuel and the heating values that were used in your calculations. You must also demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10 percent or more of the total fuel consumption on an annual basis.

(2) The operating limits provided in your federally enforceable permit, and any deviations from these limits.

(3) Any problems or errors suspected with the meters.

(h) If you own or operate an emergency stationary RICE with a site rating of more than 100 brake HP that operates or is contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operates for the purpose specified in § 63.6640(f)(4)(ii), you must submit an annual report according to the requirements in paragraphs (h)(1) through (3) of this section.

(1) The report must contain the following information:

(i) Company name and address where the engine is located.

(ii) Date of the report and beginning and ending dates of the reporting period.

(iii) Engine site rating and model year.

(iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place.

(v) Hours operated for the purposes specified in § 63.6640(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vi) Number of hours the engine is contractually obligated to be available for the purposes specified in § 63.6640(f)(2)(ii) and (iii).

(vii) Hours spent for operation for the purpose specified in § 63.6640(f)(4)(ii), including the date, start time, and end time for engine operation for the purposes specified in § 63.6640(f)(4)(ii). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine.

(viii) If there were no deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), a statement that there were no deviations from the fuel requirements during the reporting period.

(ix) If there were deviations from the fuel requirements in § 63.6604 that apply to the engine (if any), information on the number, duration, and cause of deviations, and the corrective action taken.

(2) The first annual report must cover the calendar year 2015 and must be submitted no later than March 31, 2016. Subsequent annual reports for each calendar year must be submitted no later than March 31 of the following calendar year.

(3) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in § 63.13.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9677, Mar. 3, 2010; 78 FR 6705, Jan. 30, 2013]

§ 63.6655 What records must I keep?

(a) If you must comply with the emission and operating limitations, you must keep the records described in paragraphs (a)(1) through (a)(5), (b)(1) through (b)(3) and (c) of this section.

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv).

(2) Records of the occurrence and duration of each malfunction of operation (i.e., process equipment) or the air pollution control and monitoring equipment.

(3) Records of performance tests and performance evaluations as required in § 63.10(b)(2)(viii).

(4) Records of all required maintenance performed on the air pollution control and monitoring equipment.

(5) Records of actions taken during periods of malfunction to minimize emissions in accordance with § 63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(b) For each CEMS or CPMS, you must keep the records listed in paragraphs (b)(1) through (3) of this section.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (i.e., superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in § 63.8(f)(6)(i), if applicable.

(c) If you are operating a new or reconstructed stationary RICE which fires landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, you must keep the records of your daily fuel usage monitors.

(d) You must keep the records required in Table 6 of this subpart to show continuous compliance with each emission or operating limitation that applies to you.

(e) You must keep records of the maintenance conducted on the stationary RICE in order to demonstrate that you operated and maintained the stationary RICE and after-treatment control device (if any) according to your own maintenance plan if you own or operate any of the following stationary RICE;

(1) An existing stationary RICE with a site rating of less than 100 brake HP located at a major source of HAP emissions.

(2) An existing stationary emergency RICE.

(3) An existing stationary RICE located at an area source of HAP emissions subject to management practices as shown in Table 2d to this subpart.

(f) If you own or operate any of the stationary RICE in paragraphs (f)(1) through (2) of this section, you must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in § 63.6640(f)(2)(ii) or (iii) or § 63.6640(f)(4)(ii), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

(1) An existing emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions that does not meet the standards applicable to non-emergency engines.

(2) An existing emergency stationary RICE located at an area source of HAP emissions that does not meet the standards applicable to non-emergency engines.

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 78 FR 6706, Jan. 30, 2013]

§ 63.6660   In what form and how long must I keep my records?

(a) Your records must be in a form suitable and readily available for expeditious review according to § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record readily accessible in hard copy or electronic form for at least 5 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record, according to § 63.10(b)(1).

[69 FR 33506, June 15, 2004, as amended at 75 FR 9678, Mar. 3, 2010]

Other Requirements and Information

§ 63.6665 What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you. If you own or operate a new or reconstructed stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions (except new or reconstructed 4SLB engines greater than or equal to 250 and less than or equal to 500 brake HP), a new or reconstructed stationary RICE located at an area source of HAP emissions, or any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with any of the requirements of the General Provisions specified in Table 8: An existing 2SLB stationary RICE, an existing 4SLB stationary RICE, an existing stationary RICE that combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, an existing emergency stationary RICE, or an existing limited use stationary RICE. If you own or operate any of the following RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions, you do not need to comply with the requirements in the General Provisions specified in Table 8 except for the initial notification requirements: A new stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, a new emergency stationary RICE, or a new limited use stationary RICE.

[75 FR 9678, Mar. 3, 2010]

§ 63.6670 Who implements and enforces this subpart?

(a) This subpart is implemented and enforced by the U.S. EPA, or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency (as well as the U.S. EPA) has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out whether this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are:

(1) Approval of alternatives to the non-opacity emission limitations and operating limitations in § 63.6600 under § 63.6(g).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

(5) Approval of a performance test which was conducted prior to the effective date of the rule, as specified in § 63.6610(b).

§ 63.6675 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA); in 40 CFR 63.2, the General Provisions of this part; and in this section as follows:

Alaska Railbelt Grid means the service areas of the six regulated public utilities that extend from Fairbanks to Anchorage and the Kenai Peninsula. These utilities are Golden Valley Electric Association; Chugach Electric Association; Matanuska Electric Association; Homer Electric Association; Anchorage Municipal Light & Power; and the City of Seward Electric System.

Area source means any stationary source of HAP that is not a major source as defined in part 63.

Associated equipment as used in this subpart and as referred to in section 112(n)(4) of the CAA, means equipment associated with an oil or natural gas exploration or production well, and includes all equipment from the well bore to the point of custody transfer, except glycol dehydration units, storage vessels with potential for flash emissions, combustion turbines, and stationary RICE.

Backup power for renewable energy means an engine that provides backup power to a facility that generates electricity from renewable energy resources, as that term is defined in Alaska Statute 42.45.045(l)(5) (incorporated by reference, see § 63.14).

Black start engine means an engine whose only purpose is to start up a combustion turbine.

CAA means the Clean Air Act (42 U.S.C. 7401 et seq., as amended by Public Law 101-549, 104 Stat. 2399).

Commercial emergency stationary RICE means an emergency stationary RICE used in commercial establishments such as office buildings, hotels, stores, telecommunications facilities, restaurants, financial institutions such as banks, doctor's offices, and sports and performing arts facilities.

Compression ignition means relating to a type of stationary internal combustion engine that is not a spark ignition engine.

Custody transfer means the transfer of hydrocarbon liquids or natural gas: After processing and/or treatment in the producing operations, or from storage vessels or automatic transfer facilities or other such equipment, including product loading racks, to pipelines or any other forms of transportation. For the purposes of this subpart, the point at which such liquids or natural gas enters a natural gas processing plant is a point of custody transfer.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including but not limited to any emission limitation or operating limitation;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation or operating limitation in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.

(4) Fails to satisfy the general duty to minimize emissions established by § 63.6(e)(1)(i).

Diesel engine means any stationary RICE in which a high boiling point liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition. This process is also known as compression ignition.

Diesel fuel means any liquid obtained from the distillation of petroleum with a boiling point of approximately 150 to 360 degrees Celsius. One commonly used form is fuel oil number 2. Diesel fuel also includes any non-distillate fuel with comparable physical and chemical properties (e.g. biodiesel) that is suitable for use in compression ignition engines.

Digester gas means any gaseous by-product of wastewater treatment typically formed through the anaerobic decomposition of organic waste materials and composed principally of methane and CO_2 .

Dual-fuel engine means any stationary RICE in which a liquid fuel (typically diesel fuel) is used for compression ignition and gaseous fuel (typically natural gas) is used as the primary fuel.

Emergency stationary RICE means any stationary reciprocating internal combustion engine that meets all of the criteria in paragraphs (1) through (3) of this definition. All emergency stationary RICE must comply with the requirements specified in § 63.6640(f) in order to be considered emergency stationary RICE. If the engine does not comply with the requirements specified in § 63.6640(f), then it is not considered to be an emergency stationary RICE under this subpart.

(1) The stationary RICE is operated to provide electrical power or mechanical work during an emergency situation. Examples include stationary RICE used to produce power for critical networks or equipment (including power supplied to portions of a facility) when electric power from the local utility (or the normal power source, if the facility runs on its own power production) is interrupted, or stationary RICE used to pump water in the case of fire or flood, etc.

(2) The stationary RICE is operated under limited circumstances for situations not included in paragraph (1) of this definition, as specified in § 63.6640(f).

(3) The stationary RICE operates as part of a financial arrangement with another entity in situations not included in paragraph (1) of this definition only as allowed in § 63.6640(f)(2)(ii) or (iii) and § 63.6640(f)(4)(i) or (ii).

Engine startup means the time from initial start until applied load and engine and associated equipment reaches steady state or normal operation. For stationary engine with catalytic controls, engine startup means the time from initial start until applied load and engine and associated equipment, including the catalyst, reaches steady state or normal operation.

Four-stroke engine means any type of engine which completes the power cycle in two crankshaft revolutions, with intake and compression strokes in the first revolution and power and exhaust strokes in the second revolution.

Gaseous fuel means a material used for combustion which is in the gaseous state at standard atmospheric temperature and pressure conditions.

Gasoline means any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

Glycol dehydration unit means a device in which a liquid glycol (including, but not limited to, ethylene glycol, diethylene glycol, or triethylene glycol) absorbent directly contacts a natural gas stream and absorbs water in a contact tower or absorption column (absorber). The glycol contacts and absorbs water vapor and other gas stream constituents from the natural gas and becomes “rich” glycol. This glycol is then regenerated in the glycol dehydration unit reboiler. The “lean” glycol is then recycled.

Hazardous air pollutants (HAP) means any air pollutants listed in or pursuant to section 112(b) of the CAA.

Institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations.

ISO standard day conditions means 288 degrees Kelvin (15 degrees Celsius), 60 percent relative humidity and 101.3 kilopascals pressure.

Landfill gas means a gaseous by-product of the land application of municipal refuse typically formed through the anaerobic decomposition of waste materials and composed principally of methane and CO_2 .

Lean burn engine means any two-stroke or four-stroke spark ignited engine that does not meet the definition of a rich burn engine.

Limited use stationary RICE means any stationary RICE that operates less than 100 hours per year.

Liquefied petroleum gas means any liquefied hydrocarbon gas obtained as a by-product in petroleum refining of natural gas production.

Liquid fuel means any fuel in liquid form at standard temperature and pressure, including but not limited to diesel, residual/crude oil, kerosene/naphtha (jet fuel), and gasoline.

Major Source, as used in this subpart, shall have the same meaning as in § 63.2, except that:

(1) Emissions from any oil or gas exploration or production well (with its associated equipment (as defined in this section)) and emissions from any pipeline compressor station or pump station shall not be aggregated with emissions from other similar units, to determine whether such emission points or stations are major sources, even when emission points are in a contiguous area or under common control;

(2) For oil and gas production facilities, emissions from processes, operations, or equipment that are not part of the same oil and gas production facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated;

(3) For production field facilities, only HAP emissions from glycol dehydration units, storage vessel with the potential for flash emissions, combustion turbines and reciprocating internal combustion engines shall be aggregated for a major source determination; and

(4) Emissions from processes, operations, and equipment that are not part of the same natural gas transmission and storage facility, as defined in § 63.1271 of subpart HHH of this part, shall not be aggregated.

Malfunction means any sudden, infrequent, and not reasonably preventable failure of air pollution control equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane. Natural gas may be field or pipeline quality.

Non-selective catalytic reduction (NSCR) means an add-on catalytic nitrogen oxides (NO_X) control device for rich burn engines that, in a two-step reaction, promotes the conversion of excess oxygen, NO_X , CO, and volatile organic compounds (VOC) into CO_2 , nitrogen, and water.

Oil and gas production facility as used in this subpart means any grouping of equipment where hydrocarbon liquids are processed, upgraded (i.e., remove impurities or other constituents to meet contract specifications), or stored prior to the point of custody transfer; or where natural gas is processed, upgraded, or stored prior to entering the natural gas transmission and storage source category. For purposes of a major source determination, facility (including a building, structure, or installation) means oil and natural gas production and processing equipment that is located within the boundaries of an individual surface site as defined in this section. Equipment that is part of a facility will typically be located within close proximity to other equipment located at the same facility. Pieces of production equipment or groupings of equipment located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line or pipeline, shall not be considered part of the same facility. Examples of facilities in the oil and natural gas production source category include, but are not limited to, well sites, satellite tank batteries, central tank batteries, a compressor station that transports natural gas to a natural gas processing plant, and natural gas processing plants.

Oxidation catalyst means an add-on catalytic control device that controls CO and VOC by oxidation.

Peaking unit or engine means any standby engine intended for use during periods of high demand that are not emergencies.

Percent load means the fractional power of an engine compared to its maximum manufacturer's design capacity at engine site conditions. Percent load may range between 0 percent to above 100 percent.

Potential to emit means the maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the stationary source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. For oil and natural gas production facilities subject to subpart HH of this part, the potential to emit provisions in § 63.760(a) may be used. For natural gas transmission and storage facilities subject to subpart HHH of this part, the maximum annual facility gas throughput for storage facilities may be determined according to § 63.1270(a)(1) and the maximum annual throughput for transmission facilities may be determined according to § 63.1270(a)(2).

Production field facility means those oil and gas production facilities located prior to the point of custody transfer.

Production well means any hole drilled in the earth from which crude oil, condensate, or field natural gas is extracted.

Propane means a colorless gas derived from petroleum and natural gas, with the molecular structure C_3H_8.

Remote stationary RICE means stationary RICE meeting any of the following criteria:

(1) Stationary RICE located in an offshore area that is beyond the line of ordinary low water along that portion of the coast of the United States that is in direct contact with the open seas and beyond the line marking the seaward limit of inland waters.

(2) Stationary RICE located on a pipeline segment that meets both of the criteria in paragraphs (2)(i) and (ii) of this definition.

(i) A pipeline segment with 10 or fewer buildings intended for human occupancy and no buildings with four or more stories within 220 yards (200 meters) on either side of the centerline of any continuous 1-mile (1.6 kilometers) length of pipeline. Each separate dwelling unit in a multiple dwelling unit building is counted as a separate building intended for human occupancy.

(ii) The pipeline segment does not lie within 100 yards (91 meters) of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12-month period. The days and weeks need not be consecutive. The building or area is considered occupied for a full day if it is occupied for any portion of the day.

(iii) For purposes of this paragraph (2), the term pipeline segment means all parts of those physical facilities through which gas moves in transportation, including but not limited to pipe, valves, and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies. Stationary RICE located within 50 yards (46 meters) of the pipeline segment providing power for equipment on a pipeline segment are part of the pipeline segment. Transportation of gas means the gathering, transmission, or distribution of gas by pipeline, or the storage of gas. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

(3) Stationary RICE that are not located on gas pipelines and that have 5 or fewer buildings intended for human occupancy and no buildings with four or more stories within a 0.25 mile radius around the engine. A building is intended for human occupancy if its primary use is for a purpose involving the presence of humans.

Residential emergency stationary RICE means an emergency stationary RICE used in residential establishments such as homes or apartment buildings.

Responsible official means responsible official as defined in 40 CFR 70.2.

Rich burn engine means any four-stroke spark ignited engine where the manufacturer's recommended operating air/fuel ratio divided by the stoichiometric air/fuel ratio at full load conditions is less than or equal to 1.1. Engines originally manufactured as rich burn engines, but modified prior to December 19, 2002 with passive emission control technology for NO_X (such as pre-combustion chambers) will be considered lean burn engines. Also, existing engines where there are no manufacturer's recommendations regarding air/fuel ratio will be considered a rich burn engine if the excess oxygen content of the exhaust at full load conditions is less than or equal to 2 percent.

Site-rated HP means the maximum manufacturer's design capacity at engine site conditions.

Spark ignition means relating to either: A gasoline-fueled engine; or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark ignition engines usually use a throttle to regulate intake air flow to control power during normal operation. Dual-fuel engines in which a liquid fuel (typically diesel fuel) is used for CI and gaseous fuel (typically natural gas) is used as the primary fuel at an annual average ratio of less than 2 parts diesel fuel to 100 parts total fuel on an energy equivalent basis are spark ignition engines.

Stationary reciprocating internal combustion engine (RICE) means any reciprocating internal combustion engine which uses reciprocating motion to convert heat energy into mechanical work and which is not mobile. Stationary RICE differ from mobile RICE in that a stationary RICE is not a non-road engine as defined at 40 CFR 1068.30, and is not used to propel a motor vehicle or a vehicle used solely for competition.

Stationary RICE test cell/stand means an engine test cell/stand, as defined in subpart PPPPP of this part, that tests stationary RICE.

Stoichiometric means the theoretical air-to-fuel ratio required for complete combustion.

Storage vessel with the potential for flash emissions means any storage vessel that contains a hydrocarbon liquid with a stock tank gas-to-oil ratio equal to or greater than 0.31 cubic meters per liter and an American Petroleum Institute gravity equal to or greater than 40 degrees and an actual annual average hydrocarbon liquid throughput equal to or greater than 79,500 liters per day. Flash emissions occur when dissolved hydrocarbons in the fluid evolve from solution when the fluid pressure is reduced.

Subpart means 40 CFR part 63, subpart ZZZZ.

Surface site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically affixed.

Two-stroke engine means a type of engine which completes the power cycle in single crankshaft revolution by combining the intake and compression operations into one stroke and the power and exhaust operations into a second stroke. This system requires auxiliary scavenging and inherently runs lean of stoichiometric.

[69 FR 33506, June 15, 2004, as amended at 71 FR 20467, Apr. 20, 2006; 73 FR 3607, Jan. 18, 2008; 75 FR 9679, Mar. 3, 2010; 75 FR 51592, Aug. 20, 2010; 76 FR 12867, Mar. 9, 2011; 78 FR 6706, Jan. 30, 2013]

Table 1 a **to Subpart ZZZZ of Part 63—Emission Limitations for Existing, New, and Reconstructed Spark Ignition, 4SRB Stationary RICE > 500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations at 100 percent load plus or minus 10 percent for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	**You must meet the following emission limitation, except during periods of startup . . .**	**During periods of startup you must . . .**
1. 4SRB stationary RICE	a. Reduce formaldehyde emissions by 76 percent or more. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may reduce formaldehyde emissions by 75 percent or more until June 15, 2007 or	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
	b. Limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2	

[1]Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9679, Mar. 3, 2010, as amended at 75 FR 51592, Aug. 20, 2010]

Table 1 b **to Subpart ZZZZ of Part 63—Operating Limitations for Existing, New, and Reconstructed SI 4SRB Stationary RICE >500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600, 63.6603, 63.6630 and 63.6640, you must comply with the following operating limitations for existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and using NSCR; or existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2 and using NSCR;	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 750 °F and less than or equal to 1250 °F.[1]
2. existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to reduce formaldehyde emissions by 76 percent or more (or by 75 percent or more, if applicable) and not using NSCR; or	Comply with any operating limitations approved by the Administrator.
existing, new and reconstructed 4SRB stationary RICE >500 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust to 350 ppbvd or less at 15 percent O_2 and not using NSCR.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6706, Jan. 30, 2013]

Table 2 a **to Subpart ZZZZ of Part 63—Emission Limitations for New and Reconstructed 2SLB and Compression Ignition Stationary RICE >500 HP and New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600 and 63.6640, you must comply with the following emission limitations for new and reconstructed lean burn and new and reconstructed compression ignition stationary RICE at 100 percent load plus or minus 10 percent:

For each . . .	**You must meet the following emission limitation, except during periods of startup . . .**	**During periods of startup you must . . .**
1. 2SLB stationary RICE	a. Reduce CO emissions by 58 percent or more; or b. Limit concentration of formaldehyde in the stationary RICE exhaust to 12 ppmvd or less at 15 percent O_2. If you commenced construction or reconstruction between December 19, 2002 and June 15, 2004, you may limit concentration of formaldehyde to 17 ppmvd or less at 15 percent O_2until June 15, 2007	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[1]
2. 4SLB stationary RICE	a. Reduce CO emissions by 93 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 14 ppmvd or less at 15 percent O_2	
3. CI stationary RICE	a. Reduce CO emissions by 70 percent or more; or	
	b. Limit concentration of formaldehyde in the stationary RICE exhaust to 580 ppbvd or less at 15 percent O_2	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[75 FR 9680, Mar. 3, 2010]

Table 2 b **to Subpart ZZZZ of Part 63—Operating Limitations for New and Reconstructed 2SLB and CI Stationary RICE >500 HP Located at a Major Source of HAP Emissions, New and Reconstructed 4SLB Stationary RICE ≥250 HP Located at a Major Source of HAP Emissions, Existing CI Stationary RICE >500 HP**

As stated in §§ 63.6600, 63.6601, 63.6603, 63.6630, and 63.6640, you must comply with the following operating limitations for new and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions; new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions; and existing CI stationary RICE >500 HP:

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
1. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and using an oxidation catalyst; and New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and using an oxidation catalyst.	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water at 100 percent load plus or minus 10 percent from the pressure drop across the catalyst that was measured during the initial performance test; and b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
2. Existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst	a. maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
	b. maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1350 °F.[1]
3. New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to reduce CO emissions and not using an oxidation catalyst; and	Comply with any operating limitations approved by the Administrator.

For each . . .	You must meet the following operating limitation, except during periods of startup . . .
New and reconstructed 2SLB and CI stationary RICE >500 HP located at a major source of HAP emissions and new and reconstructed 4SLB stationary RICE ≥250 HP located at a major source of HAP emissions complying with the requirement to limit the concentration of formaldehyde in the stationary RICE exhaust and not using an oxidation catalyst; and	
existing CI stationary RICE >500 HP complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and not using an oxidation catalyst.	

[1] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.8(f) for a different temperature range.

[78 FR 6707, Jan. 30, 2013]

Table 2 c **to Subpart ZZZZ of Part 63—Requirements for Existing Compression Ignition Stationary RICE Located at a Major Source of HAP Emissions and Existing Spark Ignition Stationary RICE ≤500 HP Located at a Major Source of HAP Emissions**

As stated in §§ 63.6600, 63.6602, and 63.6640, you must comply with the following requirements for existing compression ignition stationary RICE located at a major source of HAP emissions and existing spark ignition stationary RICE ≤500 HP located at a major source of HAP emissions:

For each . . .	**You must meet the following requirement, except during periods of startup . . .**	**During periods of startup you must . . .**
1. Emergency stationary CI RICE and black start stationary CI RICE [1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first.[2] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.[3]
2. Non-Emergency, non-black start stationary CI RICE <100 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first.[2] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
3. Non-Emergency, non-black start CI stationary RICE 100≤HP≤300 HP	Limit concentration of CO in the stationary RICE exhaust to 230 ppmvd or less at 15 percent O_2.	
4. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
5. Non-Emergency, non-black start stationary CI RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd or less at 15 percent O_2; or b. Reduce CO emissions by 70 percent or more.	
6. Emergency stationary SI RICE and black start stationary SI RICE.[1]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.[3]	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
7. Non-Emergency, non-black start stationary SI RICE <100 HP that are not 2SLB stationary RICE	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
8. Non-Emergency, non-black start 2SLB stationary SI RICE <100 HP	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[2] b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary;	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.[3]	
9. Non-emergency, non-black start 2SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 225 ppmvd or less at 15 percent O_2.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
10. Non-emergency, non-black start 4SLB stationary RICE 100≤HP≤500	Limit concentration of CO in the stationary RICE exhaust to 47 ppmvd or less at 15 percent O_2.	
11. Non-emergency, non-black start 4SRB stationary RICE 100≤HP≤500	Limit concentration of formaldehyde in the stationary RICE exhaust to 10.3 ppmvd or less at 15 percent O_2.	
12. Non-emergency, non-black start stationary RICE 100≤HP≤500 which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Limit concentration of CO in the stationary RICE exhaust to 177 ppmvd or less at 15 percent O_2.	

[1] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the work practice requirements on the schedule required in Table 2c of this subpart, or if performing the work practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the work practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The work practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the work practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[2] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2c of this subpart.

[3] Sources can petition the Administrator pursuant to the requirements of 40 CFR 63.6(g) for alternative work practices.

[78 FR 6708, Jan. 30, 2013, as amended at 78 FR 14457, Mar. 6, 2013]

Table 2 d **to Subpart ZZZZ of Part 63—Requirements for Existing Stationary RICE Located at Area Sources of HAP Emissions**

As stated in §§ 63.6603 and 63.6640, you must comply with the following requirements for existing stationary RICE located at area sources of HAP emissions:

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
1. Non-Emergency, non-black start CI stationary RICE ≤300 HP	a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first;[1] b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	Minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.
2. Non-Emergency, non-black start CI stationary RICE 300<HP≤500	a. Limit concentration of CO in the stationary RICE exhaust to 49 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	
3. Non-Emergency, non-black start CI stationary RICE >500 HP	a. Limit concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O_2; or	
	b. Reduce CO emissions by 70 percent or more.	

For each . . .	**You must meet the following requirement, except during periods of startup . . .**	**During periods of startup you must . . .**
4. Emergency stationary CI RICE and black start stationary CI RICE.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]	
	b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
5. Emergency stationary SI RICE; black start stationary SI RICE; non-emergency, non-black start 4SLB stationary RICE >500 HP that operate 24 hours or less per calendar year; non-emergency, non-black start 4SRB stationary RICE >500 HP that operate 24 hours or less per calendar year.[2]	a. Change oil and filter every 500 hours of operation or annually, whichever comes first;[1]; b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.	
6. Non-emergency, non-black start 2SLB stationary RICE	a. Change oil and filter every 4,320 hours of operation or annually, whichever comes first;[1]	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	b. Inspect spark plugs every 4,320 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 4,320 hours of operation or annually, whichever comes first, and replace as necessary.	
7. Non-emergency, non-black start 4SLB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	
8. Non-emergency, non-black start 4SLB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
9. Non-emergency, non-black start 4SLB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install an oxidation catalyst to reduce HAP emissions from the stationary RICE.	
10. Non-emergency, non-black start 4SRB stationary RICE ≤500 HP	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
11. Non-emergency, non-black start 4SRB remote stationary RICE >500 HP	a. Change oil and filter every 2,160 hours of operation or annually, whichever comes first;[1]	
	b. Inspect spark plugs every 2,160 hours of operation or annually, whichever comes first, and replace as necessary; and	
	c. Inspect all hoses and belts every 2,160 hours of operation or annually, whichever comes first, and replace as necessary.	
12. Non-emergency, non-black start 4SRB stationary RICE >500 HP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Install NSCR to reduce HAP emissions from the stationary RICE.	
13. Non-emergency, non-black start stationary RICE which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	a. Change oil and filter every 1,440 hours of operation or annually, whichever comes first;[1] b. Inspect spark plugs every 1,440 hours of operation or annually, whichever comes first, and replace as necessary; and	

For each . . .	You must meet the following requirement, except during periods of startup . . .	During periods of startup you must . . .
	c. Inspect all hoses and belts every 1,440 hours of operation or annually, whichever comes first, and replace as necessary.	

[1] Sources have the option to utilize an oil analysis program as described in § 63.6625(i) or (j) in order to extend the specified oil change requirement in Table 2d of this subpart.

[2] If an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

[78 FR 6709, Jan. 30, 2013]

Table 3 to Subpart ZZZZ of Part 63—Subsequent Performance Tests

As stated in §§ 63.6615 and 63.6620, you must comply with the following subsequent performance test requirements:

For each . . .	Complying with the requirement to . . .	You must . . .
1. New or reconstructed 2SLB stationary RICE >500 HP located at major sources; new or reconstructed 4SLB stationary RICE ≥250 HP located at major sources; and new or reconstructed CI stationary RICE >500 HP located at major sources	Reduce CO emissions and not using a CEMS	Conduct subsequent performance tests semiannually.[1]
2. 4SRB stationary RICE ≥5,000 HP located at major sources	Reduce formaldehyde emissions	Conduct subsequent performance tests semiannually.[1]

For each . . .	Complying with the requirement to . . .	You must . . .
3. Stationary RICE >500 HP located at major sources and new or reconstructed 4SLB stationary RICE 250≤HP≤500 located at major sources	Limit the concentration of formaldehyde in the stationary RICE exhaust	Conduct subsequent performance tests semiannually.[1]
4. Existing non-emergency, non-black start CI stationary RICE >500 HP that are not limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 3 years, whichever comes first.
5. Existing non-emergency, non-black start CI stationary RICE >500 HP that are limited use stationary RICE	Limit or reduce CO emissions and not using a CEMS	Conduct subsequent performance tests every 8,760 hours or 5 years, whichever comes first.

[1] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6711, Jan. 30, 2013]

Table 4 to Subpart ZZZZ of Part 63—Requirements for Performance Tests

As stated in §§ 63.6610, 63.6611, 63.6612, 63.6620, and 63.6640, you must comply with the following requirements for performance tests for stationary RICE:

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
1. 2SLB, 4SLB, and CI stationary RICE	a. reduce CO emissions	i. Measure the O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a c]	(a) Measurements to determine O_2 must be made at the same time as the measurements for CO concentration.
		ii. Measure the CO at the inlet and the outlet of the control device	(1) ASTM D6522-00 (Reapproved 2005) [a b c] or Method 10 of 40 CFR part 60, appendix A	(a) The CO concentration must be at 15 percent O_2, dry basis.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
2. 4SRB stationary RICE	a. reduce formaldehyde emissions	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) sampling sites must be located at the inlet and outlet of the control device.
		ii. Measure O_2 at the inlet and outlet of the control device; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2 concentration must be made at the same time as the measurements for formaldehyde or THC concentration.
		iii. Measure moisture content at the inlet and outlet of the control device; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or THC concentration.
		iv. If demonstrating compliance with the formaldehyde percent reduction requirement, measure formaldehyde at the inlet and the outlet of the control device	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a] provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.
		v. If demonstrating compliance with the THC percent reduction requirement, measure THC at the inlet and the outlet of the control device	(1) Method 25A, reported as propane, of 40 CFR part 60, appendix A	(a) THC concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
3. Stationary RICE	a. limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. Select the sampling port location and the number of traverse points; and	(1) Method 1 or 1A of 40 CFR part 60, appendix A § 63.7(d)(1)(i)	(a) if using a control device, the sampling site must be located at the outlet of the control device.
		ii. Determine the O_2concentration of the stationary RICE exhaust at the sampling port location; and	(1) Method 3 or 3A or 3B of 40 CFR part 60, appendix A, or ASTM Method D6522-00 (Reapproved 2005).[a]	(a) measurements to determine O_2concentration must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iii. Measure moisture content of the stationary RICE exhaust at the sampling port location; and	(1) Method 4 of 40 CFR part 60, appendix A, or Test Method 320 of 40 CFR part 63, appendix A, or ASTM D 6348-03.[a]	(a) measurements to determine moisture content must be made at the same time and location as the measurements for formaldehyde or CO concentration.
		iv. Measure formaldehyde at the exhaust of the stationary RICE; or	(1) Method 320 or 323 of 40 CFR part 63, appendix A; or ASTM D6348-03,[a]provided in ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent R must be greater than or equal to 70 and less than or equal to 130	(a) Formaldehyde concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

For each . . .	Complying with the requirement to . . .	You must . . .	Using . . .	According to the following requirements . . .
		v. measure CO at the exhaust of the stationary RICE.	(1) Method 10 of 40 CFR part 60, appendix A, ASTM Method D6522-00 (2005),[a] [c]Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.[a]	(a) CO concentration must be at 15 percent O_2, dry basis. Results of this test consist of the average of the three 1-hour or longer runs.

[a] Incorporated by reference, see 40 CFR 63.14. You may also obtain copies from University Microfilms International, 300 North Zeeb Road, Ann Arbor, MI 48106.

[b] You may also use Method 320 of 40 CFR part 63, appendix A, or ASTM D6348-03.

[c] ASTM-D6522-00 (2005) may be used to test both CI and SI stationary RICE.

[78 FR 6711, Jan. 30, 2013]

Table 5 to Subpart ZZZZ of Part 63—Initial Compliance With Emission Limitations, Operating Limitations, and Other Requirements

As stated in §§ 63.6612, 63.6625 and 63.6630, you must initially comply with the emission and operating limitations as required by the following:

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and using oxidation catalyst, and using a CPMS	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
2. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, using oxidation catalyst, and using a CPMS	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions and not using oxidation catalyst	i. The average reduction of emissions of CO determined from the initial performance test achieves the required CO percent reduction; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and iii. You have recorded the approved operating parameters (if any) during the initial performance test.
4. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and not using oxidation catalyst	i. The average CO concentration determined from the initial performance test is less than or equal to the CO emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.

For each . . .	**Complying with the requirement to . . .**	**You have demonstrated initial compliance if . . .**
5. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Reduce CO emissions, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2 or CO_2 at both the inlet and outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average reduction of CO calculated using § 63.6620 equals or exceeds the required percent reduction. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average percent reduction achieved during the 4-hour period.
6. Non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP located at an area source of HAP	a. Limit the concentration of CO, and using a CEMS	i. You have installed a CEMS to continuously monitor CO and either O_2 or CO_2 at the outlet of the oxidation catalyst according to the requirements in § 63.6625(a); and
		ii. You have conducted a performance evaluation of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B; and
		iii. The average concentration of CO calculated using § 63.6620 is less than or equal to the CO emission limitation. The initial test comprises the first 4-hour period after successful validation of the CEMS. Compliance is based on the average concentration measured during the 4-hour period.

For each . . .	**Complying with the requirement to . . .**	**You have demonstrated initial compliance if . . .**
7. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction, or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
8. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. The average reduction of emissions of formaldehyde determined from the initial performance test is equal to or greater than the required formaldehyde percent reduction or the average reduction of emissions of THC determined from the initial performance test is equal to or greater than 30 percent; and
		ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
9. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b); and
		iii. You have recorded the catalyst pressure drop and catalyst inlet temperature during the initial performance test.
10. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP, and existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. The average formaldehyde concentration, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde emission limitation; and ii. You have installed a CPMS to continuously monitor operating parameters approved by the Administrator (if any) according to the requirements in § 63.6625(b); and
		iii. You have recorded the approved operating parameters (if any) during the initial performance test.
11. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Reduce CO emissions	i. The average reduction of emissions of CO or formaldehyde, as applicable determined from the initial performance test is equal to or greater than the required CO or formaldehyde, as applicable, percent reduction.

For each . . .	Complying with the requirement to . . .	You have demonstrated initial compliance if . . .
12. Existing non-emergency stationary RICE 100≤HP≤500 located at a major source of HAP, and existing non-emergency stationary CI RICE 300<HP≤500 located at an area source of HAP	a. Limit the concentration of formaldehyde or CO in the stationary RICE exhaust	i. The average formaldehyde or CO concentration, as applicable, corrected to 15 percent O_2, dry basis, from the three test runs is less than or equal to the formaldehyde or CO emission limitation, as applicable.
13. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1350 °F.
14. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. You have conducted an initial compliance demonstration as specified in § 63.6630(e) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more;
		ii. You have installed a CPMS to continuously monitor catalyst inlet temperature according to the requirements in § 63.6625(b), or you have installed equipment to automatically shut down the engine if the catalyst inlet temperature exceeds 1250 °F.

[78 FR 6712, Jan. 30, 2013]

Table 6 to Subpart ZZZZ of Part 63—Continuous Compliance With Emission Limitations, and Other Requirements

As stated in § 63.6640, you must continuously comply with the emissions and operating limitations and work or management practices as required by the following:

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
1. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
2. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, and new or reconstructed non-emergency CI stationary RICE >500 HP located at a major source of HAP	a. Reduce CO emissions and not using an oxidation catalyst, and using a CPMS	i. Conducting semiannual performance tests for CO to demonstrate that the required CO percent reduction is achieved [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and iii. Reducing these data to 4-hour rolling averages; and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
3. New or reconstructed non-emergency 2SLB stationary RICE >500 HP located at a major source of HAP, new or reconstructed non-emergency 4SLB stationary RICE ≥250 HP located at a major source of HAP, new or reconstructed non-emergency stationary CI RICE >500 HP located at a major source of HAP, and existing non-emergency stationary CI RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using a CEMS	i. Collecting the monitoring data according to § 63.6625(a), reducing the measurements to 1-hour averages, calculating the percent reduction or concentration of CO emissions according to § 63.6620; and ii. Demonstrating that the catalyst achieves the required percent reduction of CO emissions over the 4-hour averaging period, or that the emission remain at or below the CO concentration limit; and
		iii. Conducting an annual RATA of your CEMS using PS 3 and 4A of 40 CFR part 60, appendix B, as well as daily and periodic data quality checks in accordance with 40 CFR part 60, appendix F, procedure 1.
4. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and using NSCR	i. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and

For each . . .	**Complying with the requirement to . . .**	**You must demonstrate continuous compliance by . . .**
		iv. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
5. Non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP	a. Reduce formaldehyde emissions and not using NSCR	i. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		ii. Reducing these data to 4-hour rolling averages; and
		iii. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
6. Non-emergency 4SRB stationary RICE with a brake HP ≥5,000 located at a major source of HAP	a. Reduce formaldehyde emissions	Conducting semiannual performance tests for formaldehyde to demonstrate that the required formaldehyde percent reduction is achieved, or to demonstrate that the average reduction of emissions of THC determined from the performance test is equal to or greater than 30 percent.[a]
7. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit [a]; and ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
8. New or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	a. Limit the concentration of formaldehyde in the stationary RICE exhaust and not using oxidation catalyst or NSCR	i. Conducting semiannual performance tests for formaldehyde to demonstrate that your emissions remain at or below the formaldehyde concentration limit [a]; and ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
9. Existing emergency and black start stationary RICE ≤500 HP located at a major source of HAP, existing non-emergency stationary RICE <100 HP located at a major source of HAP, existing emergency and black start stationary RICE located at an area source of HAP, existing non-emergency stationary CI RICE ≤300 HP located at an area source of HAP, existing non-emergency 2SLB stationary RICE located at an area source of HAP, existing non-emergency stationary SI RICE located at an area source of HAP which combusts landfill or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis, existing non-emergency 4SLB and 4SRB stationary RICE ≤500 HP located at an area source of HAP, existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that operate 24 hours or less per calendar year, and existing non-emergency 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are remote stationary RICE	a. Work or Management practices	i. Operating and maintaining the stationary RICE according to the manufacturer's emission-related operation and maintenance instructions; or ii. Develop and follow your own maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
10. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
11. Existing stationary CI RICE >500 HP that are not limited use stationary RICE	a. Reduce CO emissions, or limit the concentration of CO in the stationary RICE exhaust, and not using oxidation catalyst	i. Conducting performance tests every 8,760 hours or 3 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
12. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the catalyst inlet temperature data according to § 63.6625(b); and
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
		v. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.
13. Existing limited use CI stationary RICE >500 HP	a. Reduce CO emissions or limit the concentration of CO in the stationary RICE exhaust, and not using an oxidation catalyst	i. Conducting performance tests every 8,760 hours or 5 years, whichever comes first, for CO or formaldehyde, as appropriate, to demonstrate that the required CO or formaldehyde, as appropriate, percent reduction is achieved or that your emissions remain at or below the CO or formaldehyde concentration limit; and
		ii. Collecting the approved operating parameter (if any) data according to § 63.6625(b); and

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
		iii. Reducing these data to 4-hour rolling averages; and
		iv. Maintaining the 4-hour rolling averages within the operating limitations for the operating parameters established during the performance test.
14. Existing non-emergency 4SLB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install an oxidation catalyst	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 93 percent or more, or the average CO concentration is less than or equal to 47 ppmvd at 15 percent O_2; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than 450 °F and less than or equal to 1350 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1350 °F.

For each . . .	Complying with the requirement to . . .	You must demonstrate continuous compliance by . . .
15. Existing non-emergency 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that are operated more than 24 hours per calendar year	a. Install NSCR	i. Conducting annual compliance demonstrations as specified in § 63.6640(c) to show that the average reduction of emissions of CO is 75 percent or more, the average CO concentration is less than or equal to 270 ppmvd at 15 percent O_2, or the average reduction of emissions of THC is 30 percent or more; and either ii. Collecting the catalyst inlet temperature data according to § 63.6625(b), reducing these data to 4-hour rolling averages; and maintaining the 4-hour rolling averages within the limitation of greater than or equal to 750 °F and less than or equal to 1250 °F for the catalyst inlet temperature; or iii. Immediately shutting down the engine if the catalyst inlet temperature exceeds 1250 °F.

[a] After you have demonstrated compliance for two consecutive tests, you may reduce the frequency of subsequent performance tests to annually. If the results of any subsequent annual performance test indicate the stationary RICE is not in compliance with the CO or formaldehyde emission limitation, or you deviate from any of your operating limitations, you must resume semiannual performance tests.

[78 FR 6715, Jan. 30, 2013]

Table 7 to Subpart ZZZZ of Part 63—Requirements for Reports

As stated in § 63.6650, you must comply with the following requirements for reports:

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
1. Existing non-emergency, non-black start stationary RICE 100≤HP≤500 located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >500 HP located at a major source of HAP; existing non-emergency 4SRB stationary RICE >500 HP located at a major source of HAP; existing non-emergency, non-black start stationary CI RICE >300 HP located at an area source of HAP; new or reconstructed non-emergency stationary RICE >500 HP located at a major source of HAP; and new or reconstructed non-emergency 4SLB stationary RICE 250≤HP≤500 located at a major source of HAP	Compliance report	a. If there are no deviations from any emission limitations or operating limitations that apply to you, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5) for engines that are not limited use stationary RICE subject to numerical emission limitations; and ii. Annually according to the requirements in § 63.6650(b)(6)-(9) for engines that are limited use stationary RICE subject to numerical emission limitations.
		b. If you had a deviation from any emission limitation or operating limitation during the reporting period, the information in § 63.6650(d). If there were periods during which the CMS, including CEMS and CPMS, was out-of-control, as specified in § 63.8(c)(7), the information in § 63.6650(e); or	i. Semiannually according to the requirements in § 63.6650(b).
		c. If you had a malfunction during the reporting period, the information in § 63.6650(c)(4).	i. Semiannually according to the requirements in § 63.6650(b).

For each . . .	You must submit a . . .	The report must contain . . .	You must submit the report . . .
2. New or reconstructed non-emergency stationary RICE that combusts landfill gas or digester gas equivalent to 10 percent or more of the gross heat input on an annual basis	Report	a. The fuel flow rate of each fuel and the heating values that were used in your calculations, and you must demonstrate that the percentage of heat input provided by landfill gas or digester gas, is equivalent to 10 percent or more of the gross heat input on an annual basis; and	i. Annually, according to the requirements in § 63.6650.
		b. The operating limits provided in your federally enforceable permit, and any deviations from these limits; and	i. See item 2.a.i.
		c. Any problems or errors suspected with the meters.	i. See item 2.a.i.
3. Existing non-emergency, non-black start 4SLB and 4SRB stationary RICE >500 HP located at an area source of HAP that are not remote stationary RICE and that operate more than 24 hours per calendar year	Compliance report	a. The results of the annual compliance demonstration, if conducted during the reporting period.	i. Semiannually according to the requirements in § 63.6650(b)(1)-(5).
4. Emergency stationary RICE that operate or are contractually obligated to be available for more than 15 hours per year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that operate for the purposes specified in § 63.6640(f)(4)(ii)	Report	a. The information in § 63.6650(h)(1)	i. annually according to the requirements in § 63.6650(h)(2)-(3).

[78 FR 6719, Jan. 30, 2013]

Table 8 to Subpart ZZZZ of Part 63—Applicability of General Provisions to Subpart ZZZZ.

As stated in § 63.6665, you must comply with the following applicable general provisions.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.1	General applicability of the General Provisions	Yes.	
§ 63.2	Definitions	Yes	Additional terms defined in § 63.6675.
§ 63.3	Units and abbreviations	Yes.	
§ 63.4	Prohibited activities and circumvention	Yes.	
§ 63.5	Construction and reconstruction	Yes.	
§ 63.6(a)	Applicability	Yes.	
§ 63.6(b)(1)-(4)	Compliance dates for new and reconstructed sources	Yes.	
§ 63.6(b)(5)	Notification	Yes.	
§ 63.6(b)(6)	[Reserved]		
§ 63.6(b)(7)	Compliance dates for new and reconstructed area sources that become major sources	Yes.	
§ 63.6(c)(1)-(2)	Compliance dates for existing sources	Yes.	
§ 63.6(c)(3)-(4)	[Reserved]		
§ 63.6(c)(5)	Compliance dates for existing area sources that become major sources	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.6(d)	[Reserved]		
§ 63.6(e)	Operation and maintenance	No.	
§ 63.6(f)(1)	Applicability of standards	No.	
§ 63.6(f)(2)	Methods for determining compliance	Yes.	
§ 63.6(f)(3)	Finding of compliance	Yes.	
§ 63.6(g)(1)-(3)	Use of alternate standard	Yes.	
§ 63.6(h)	Opacity and visible emission standards	No	Subpart ZZZZ does not contain opacity or visible emission standards.
§ 63.6(i)	Compliance extension procedures and criteria	Yes.	
§ 63.6(j)	Presidential compliance exemption	Yes.	
§ 63.7(a)(1)-(2)	Performance test dates	Yes	Subpart ZZZZ contains performance test dates at §§ 63.6610, 63.6611, and 63.6612.
§ 63.7(a)(3)	CAA section 114 authority	Yes.	
§ 63.7(b)(1)	Notification of performance test	Yes	Except that § 63.7(b)(1) only applies as specified in § 63.6645.
§ 63.7(b)(2)	Notification of rescheduling	Yes	Except that § 63.7(b)(2) only applies as specified in § 63.6645.
§ 63.7(c)	Quality assurance/test plan	Yes	Except that § 63.7(c) only applies as specified in § 63.6645.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.7(d)	Testing facilities	Yes.	
§ 63.7(e)(1)	Conditions for conducting performance tests	No.	Subpart ZZZZ specifies conditions for conducting performance tests at § 63.6620.
§ 63.7(e)(2)	Conduct of performance tests and reduction of data	Yes	Subpart ZZZZ specifies test methods at § 63.6620.
§ 63.7(e)(3)	Test run duration	Yes.	
§ 63.7(e)(4)	Administrator may require other testing under section 114 of the CAA	Yes.	
§ 63.7(f)	Alternative test method provisions	Yes.	
§ 63.7(g)	Performance test data analysis, recordkeeping, and reporting	Yes.	
§ 63.7(h)	Waiver of tests	Yes.	
§ 63.8(a)(1)	Applicability of monitoring requirements	Yes	Subpart ZZZZ contains specific requirements for monitoring at § 63.6625.
§ 63.8(a)(2)	Performance specifications	Yes.	
§ 63.8(a)(3)	[Reserved]		
§ 63.8(a)(4)	Monitoring for control devices	No.	
§ 63.8(b)(1)	Monitoring	Yes.	
§ 63.8(b)(2)-(3)	Multiple effluents and multiple monitoring systems	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.8(c)(1)	Monitoring system operation and maintenance	Yes.	
§ 63.8(c)(1)(i)	Routine and predictable SSM	No	
§ 63.8(c)(1)(ii)	SSM not in Startup Shutdown Malfunction Plan	Yes.	
§ 63.8(c)(1)(iii)	Compliance with operation and maintenance requirements	No	
§ 63.8(c)(2)-(3)	Monitoring system installation	Yes.	
§ 63.8(c)(4)	Continuous monitoring system (CMS) requirements	Yes	Except that subpart ZZZZ does not require Continuous Opacity Monitoring System (COMS).
§ 63.8(c)(5)	COMS minimum procedures	No	Subpart ZZZZ does not require COMS.
§ 63.8(c)(6)-(8)	CMS requirements	Yes	Except that subpart ZZZZ does not require COMS.
§ 63.8(d)	CMS quality control	Yes.	
§ 63.8(e)	CMS performance evaluation	Yes	Except for § 63.8(e)(5)(ii), which applies to COMS.
		Except that § 63.8(e) only applies as specified in § 63.6645.	
§ 63.8(f)(1)-(5)	Alternative monitoring method	Yes	Except that § 63.8(f)(4) only applies as specified in § 63.6645.
§ 63.8(f)(6)	Alternative to relative accuracy test	Yes	Except that § 63.8(f)(6) only applies as specified in § 63.6645.

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.8(g)	Data reduction	Yes	Except that provisions for COMS are not applicable. Averaging periods for demonstrating compliance are specified at §§ 63.6635 and 63.6640.
§ 63.9(a)	Applicability and State delegation of notification requirements	Yes.	
§ 63.9(b)(1)-(5)	Initial notifications	Yes	Except that § 63.9(b)(3) is reserved.
		Except that § 63.9(b) only applies as specified in § 63.6645.	
§ 63.9(c)	Request for compliance extension	Yes	Except that § 63.9(c) only applies as specified in § 63.6645.
§ 63.9(d)	Notification of special compliance requirements for new sources	Yes	Except that § 63.9(d) only applies as specified in § 63.6645.
§ 63.9(e)	Notification of performance test	Yes	Except that § 63.9(e) only applies as specified in § 63.6645.
§ 63.9(f)	Notification of visible emission (VE)/opacity test	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(1)	Notification of performance evaluation	Yes	Except that § 63.9(g) only applies as specified in § 63.6645.
§ 63.9(g)(2)	Notification of use of COMS data	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.9(g)(3)	Notification that criterion for alternative to RATA is exceeded	Yes	If alternative is in use.

General provisions citation	Subject of citation	Applies to subpart	Explanation
		Except that § 63.9(g) only applies as specified in § 63.6645.	
§ 63.9(h)(1)-(6)	Notification of compliance status	Yes	Except that notifications for sources using a CEMS are due 30 days after completion of performance evaluations. § 63.9(h)(4) is reserved.
			Except that § 63.9(h) only applies as specified in § 63.6645.
§ 63.9(i)	Adjustment of submittal deadlines	Yes.	
§ 63.9(j)	Change in previous information	Yes.	
§ 63.10(a)	Administrative provisions for recordkeeping/reporting	Yes.	
§ 63.10(b)(1)	Record retention	Yes	Except that the most recent 2 years of data do not have to be retained on site.
§ 63.10(b)(2)(i)-(v)	Records related to SSM	No.	
§ 63.10(b)(2)(vi)-(xi)	Records	Yes.	
§ 63.10(b)(2)(xii)	Record when under waiver	Yes.	
§ 63.10(b)(2)(xiii)	Records when using alternative to RATA	Yes	For CO standard if using RATA alternative.
§ 63.10(b)(2)(xiv)	Records of supporting documentation	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.10(b)(3)	Records of applicability determination	Yes.	
§ 63.10(c)	Additional records for sources using CEMS	Yes	Except that § 63.10(c)(2)-(4) and (9) are reserved.
§ 63.10(d)(1)	General reporting requirements	Yes.	
§ 63.10(d)(2)	Report of performance test results	Yes.	
§ 63.10(d)(3)	Reporting opacity or VE observations	No	Subpart ZZZZ does not contain opacity or VE standards.
§ 63.10(d)(4)	Progress reports	Yes.	
§ 63.10(d)(5)	Startup, shutdown, and malfunction reports	No.	
§ 63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§ 63.10(e)(2)(ii)	COMS-related report	No	Subpart ZZZZ does not require COMS.
§ 63.10(e)(3)	Excess emission and parameter exceedances reports	Yes.	Except that § 63.10(e)(3)(i) (C) is reserved.
§ 63.10(e)(4)	Reporting COMS data	No	Subpart ZZZZ does not require COMS.
§ 63.10(f)	Waiver for recordkeeping/reporting	Yes.	
§ 63.11	Flares	No.	
§ 63.12	State authority and delegations	Yes.	

General provisions citation	Subject of citation	Applies to subpart	Explanation
§ 63.13	Addresses	Yes.	
§ 63.14	Incorporation by reference	Yes.	
§ 63.15	Availability of information	Yes.	

[75 FR 9688, Mar. 3, 2010, as amended at 78 FR 6720, Jan. 30, 2013]

Appendix A—Protocol for Using an Electrochemical Analyzer to Determine Oxygen and Carbon Monoxide Concentrations From Certain Engines

1.0 SCOPE AND APPLICATION. WHAT IS THIS PROTOCOL?

This protocol is a procedure for using portable electrochemical (EC) cells for measuring carbon monoxide (CO) and oxygen (O_2) concentrations in controlled and uncontrolled emissions from existing stationary 4-stroke lean burn and 4-stroke rich burn reciprocating internal combustion engines as specified in the applicable rule.

1.1 Analytes. What does this protocol determine?

This protocol measures the engine exhaust gas concentrations of carbon monoxide (CO) and oxygen (O_2).

Analyte	CAS No.	Sensitivity
Carbon monoxide (CO)	630-08-0	Minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.
Oxygen (O_2)	7782-44-7	

1.2 Applicability. When is this protocol acceptable?

This protocol is applicable to 40 CFR part 63, subpart ZZZZ. Because of inherent cross sensitivities of EC cells, you must not apply this protocol to other emissions sources without specific instruction to that effect.

1.3 Data Quality Objectives. How good must my collected data be?

Refer to Section 13 to verify and document acceptable analyzer performance.

1.4 Range. What is the targeted analytical range for this protocol?

The measurement system and EC cell design(s) conforming to this protocol will determine the analytical range for each gas component. The nominal ranges are defined by choosing up-scale calibration gas concentrations near the maximum anticipated flue gas concentrations for CO and O_2 , or no more than twice the permitted CO level.

1.5 Sensitivity. What minimum detectable limit will this protocol yield for a particular gas component?

The minimum detectable limit depends on the nominal range and resolution of the specific EC cell used, and the signal to noise ratio of the measurement system. The minimum detectable limit should be 2 percent of the nominal range or 1 ppm, whichever is less restrictive.

2.0 SUMMARY OF PROTOCOL

In this protocol, a gas sample is extracted from an engine exhaust system and then conveyed to a portable EC analyzer for measurement of CO and O_2 gas concentrations. This method provides measurement system performance specifications and sampling protocols to ensure reliable data. You may use additions to, or modifications of vendor supplied measurement systems (e.g., heated or unheated sample lines, thermocouples, flow meters, selective gas scrubbers, etc.) to meet the design specifications of this protocol. Do not make changes to the measurement system from the as-verified configuration (Section 3.12).

3.0 DEFINITIONS

3.1 Measurement System. The total equipment required for the measurement of CO and O_2 concentrations. The measurement system consists of the following major subsystems:

3.1.1 Data Recorder. A strip chart recorder, computer or digital recorder for logging measurement data from the analyzer output. You may record measurement data from the digital data display manually or electronically.

3.1.2 Electrochemical (EC) Cell. A device, similar to a fuel cell, used to sense the presence of a specific analyte and generate an electrical current output proportional to the analyte concentration.

3.1.3 Interference Gas Scrubber. A device used to remove or neutralize chemical compounds that may interfere with the selective operation of an EC cell.

3.1.4 Moisture Removal System. Any device used to reduce the concentration of moisture in the sample stream so as to protect the EC cells from the damaging effects of condensation and to minimize errors in measurements caused by the scrubbing of soluble gases.

3.1.5 Sample Interface. The portion of the system used for one or more of the following: sample acquisition; sample transport; sample conditioning or protection of the EC cell from any degrading effects of the engine exhaust effluent; removal of particulate matter and condensed moisture.

3.2 Nominal Range. The range of analyte concentrations over which each EC cell is operated (normally 25 percent to 150 percent of up-scale calibration gas value). Several nominal ranges can be used for any given cell so long as the calibration and repeatability checks for that range remain within specifications.

3.3 Calibration Gas. A vendor certified concentration of a specific analyte in an appropriate balance gas.

3.4 Zero Calibration Error. The analyte concentration output exhibited by the EC cell in response to zero-level calibration gas.

3.5 Up-Scale Calibration Error. The mean of the difference between the analyte concentration exhibited by the EC cell and the certified concentration of the up-scale calibration gas.

3.6 Interference Check. A procedure for quantifying analytical interference from components in the engine exhaust gas other than the targeted analytes.

3.7 Repeatability Check. A protocol for demonstrating that an EC cell operated over a given nominal analyte concentration range provides a stable and consistent response and is not significantly affected by repeated exposure to that gas.

3.8 Sample Flow Rate. The flow rate of the gas sample as it passes through the EC cell. In some situations, EC cells can experience drift with changes in flow rate. The flow rate must be monitored and documented during all phases of a sampling run.

3.9 Sampling Run. A timed three-phase event whereby an EC cell's response rises and plateaus in a sample conditioning phase, remains relatively constant during a measurement data phase, then declines during a refresh phase. The sample conditioning phase exposes the EC cell to the gas sample for a length of time sufficient to reach a constant response. The measurement data phase is the time interval during which gas sample measurements can be made that meet the acceptance criteria of this protocol. The refresh phase then purges the EC cells with CO-free air. The refresh phase replenishes requisite O_2 and moisture in the electrolyte reserve and provides a mechanism to de-gas or desorb any interference gas scrubbers or filters so as to enable a stable CO EC cell response. There are four primary types of sampling runs: pre- sampling calibrations; stack gas sampling; post-sampling calibration checks; and measurement system repeatability checks. Stack gas sampling runs can be chained together for extended evaluations, providing all other procedural specifications are met.

3.10 Sampling Day. A time not to exceed twelve hours from the time of the pre-sampling calibration to the post-sampling calibration check. During this time, stack gas sampling runs can be repeated without repeated recalibrations, providing all other sampling specifications have been met.

3.11 Pre-Sampling Calibration/Post-Sampling Calibration Check. The protocols executed at the beginning and end of each sampling day to bracket measurement readings with controlled performance checks.

3.12 Performance-Established Configuration. The EC cell and sampling system configuration that existed at the time that it initially met the performance requirements of this protocol.

4.0 INTERFERENCES.

When present in sufficient concentrations, NO and NO_2 are two gas species that have been reported to interfere with CO concentration measurements. In the likelihood of this occurrence, it is the protocol user's responsibility to employ and properly maintain an appropriate CO EC cell filter or scrubber for removal of these gases, as described in Section 6.2.12.

5.0 SAFETY. [RESERVED]

6.0 EQUIPMENT AND SUPPLIES.

6.1 What equipment do I need for the measurement system?

The system must maintain the gas sample at conditions that will prevent moisture condensation in the sample transport lines, both before and as the sample gas contacts the EC cells. The essential components of the measurement system are described below.

6.2 Measurement System Components.

6.2.1 Sample Probe. A single extraction-point probe constructed of glass, stainless steel or other non-reactive material, and of length sufficient to reach any designated sampling point. The sample probe must be designed to prevent plugging due to condensation or particulate matter.

6.2.2 Sample Line. Non-reactive tubing to transport the effluent from the sample probe to the EC cell.

6.2.3 Calibration Assembly (optional). A three-way valve assembly or equivalent to introduce calibration gases at ambient pressure at the exit end of the sample probe during calibration checks. The assembly must be designed such that only stack gas or calibration gas flows in the sample line and all gases flow through any gas path filters.

6.2.4 Particulate Filter (optional). Filters before the inlet of the EC cell to prevent accumulation of particulate material in the measurement system and extend the useful life of the components. All filters must be fabricated of materials that are non-reactive to the gas mixtures being sampled.

6.2.5 Sample Pump. A leak-free pump to provide undiluted sample gas to the system at a flow rate sufficient to minimize the response time of the measurement system. If located upstream of the EC cells, the pump must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.8 Sample Flow Rate Monitoring. An adjustable rotameter or equivalent device used to adjust and maintain the sample flow rate through the analyzer as prescribed.

6.2.9 Sample Gas Manifold (optional). A manifold to divert a portion of the sample gas stream to the analyzer and the remainder to a by-pass discharge vent. The sample gas manifold may also include provisions for introducing calibration gases directly to the analyzer. The manifold must be constructed of a material that is non-reactive to the gas mixtures being sampled.

6.2.10 EC cell. A device containing one or more EC cells to determine the CO and O_2 concentrations in the sample gas stream. The EC cell(s) must meet the applicable performance specifications of Section 13 of this protocol.

6.2.11 Data Recorder. A strip chart recorder, computer or digital recorder to make a record of analyzer output data. The data recorder resolution (i.e., readability) must be no greater than 1 ppm for CO; 0.1 percent for O_2 ; and one degree (either °C or °F) for temperature. Alternatively, you may use a digital or analog meter having the same resolution to observe and manually record the analyzer responses.

6.2.12 Interference Gas Filter or Scrubber. A device to remove interfering compounds upstream of the CO EC cell. Specific interference gas filters or scrubbers used in the performance-established configuration of the analyzer must continue to be used. Such a filter or scrubber must have a means to determine when the removal agent is exhausted. Periodically replace or replenish it in accordance with the manufacturer's recommendations.

7.0 Reagents and Standards. What calibration gases are needed?

7.1 Calibration Gases. CO calibration gases for the EC cell must be CO in nitrogen or CO in a mixture of nitrogen and O_2. Use CO calibration gases with labeled concentration values certified by the manufacturer to be within ± 5 percent of the label value. Dry ambient air (20.9 percent O_2) is acceptable for calibration of the O_2 cell. If needed, any lower percentage O_2 calibration gas must be a mixture of O_2 in nitrogen.

7.1.1 Up-Scale CO Calibration Gas Concentration. Choose one or more up-scale gas concentrations such that the average of the stack gas measurements for each stack gas sampling run are between 25 and 150 percent of those concentrations. Alternatively, choose an up-scale gas that does not exceed twice the concentration of the applicable outlet standard. If a measured gas value exceeds 150 percent of the up-scale CO calibration gas value at any time during the stack gas sampling run, the run must be discarded and repeated.

7.1.2 Up-Scale O_2 Calibration Gas Concentration.

Select an O_2 gas concentration such that the difference between the gas concentration and the average stack gas measurement or reading for each sample run is less than 15 percent O_2 . When the average exhaust gas O_2 readings are above 6 percent, you may use dry ambient air (20.9 percent O_2) for the up-scale O_2 calibration gas.

7.1.3 Zero Gas. Use an inert gas that contains less than 0.25 percent of the up-scale CO calibration gas concentration. You may use dry air that is free from ambient CO and other combustion gas products (e.g., CO_2).

8.0 SAMPLE COLLECTION AND ANALYSIS

8.1 Selection of Sampling Sites.

8.1.1 Control Device Inlet. Select a sampling site sufficiently downstream of the engine so that the combustion gases should be well mixed. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.1.2 Exhaust Gas Outlet. Select a sampling site located at least two stack diameters downstream of any disturbance (e.g., turbocharger exhaust, crossover junction or recirculation take-off) and at least one-half stack diameter upstream of the gas discharge to the atmosphere. Use a single sampling extraction point near the center of the duct (e.g., within the 10 percent centroidal area), unless instructed otherwise.

8.2 Stack Gas Collection and Analysis. Prior to the first stack gas sampling run, conduct that the pre-sampling calibration in accordance with Section 10.1. Use Figure 1 to record all data. Zero the analyzer with zero gas. Confirm and record that the scrubber media color is correct and not exhausted. Then position the probe at the sampling point and begin the sampling run at the same flow rate used during the up-scale calibration. Record the start time. Record all EC cell output responses and the flow rate during the “sample conditioning phase” once per minute until constant readings are obtained. Then begin the “measurement data phase” and record readings every 15 seconds for at least two minutes (or eight readings), or as otherwise required to achieve two continuous minutes of data that meet the specification given in Section 13.1. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until several minute-to-minute readings of consistent value have been obtained. For each run use the “measurement data phase” readings to calculate the average stack gas CO and O_2 concentrations.

8.3 EC Cell Rate. Maintain the EC cell sample flow rate so that it does not vary by more than ± 10 percent throughout the pre-sampling calibration, stack gas sampling and post-sampling calibration check. Alternatively, the EC cell sample flow rate can be maintained within a tolerance range that does not affect the gas concentration readings by more than ± 3 percent, as instructed by the EC cell manufacturer.

9.0 QUALITY CONTROL (RESERVED)

10.0 CALIBRATION AND STANDARDIZATION

10.1 Pre-Sampling Calibration. Conduct the following protocol once for each nominal range to be used on each EC cell before performing a stack gas sampling run on each field sampling day. Repeat the calibration if you replace an EC cell before completing all of the sampling runs. There is no prescribed order for calibration of the EC cells; however, each cell must complete the measurement data phase during calibration. Assemble the measurement system by following the manufacturer's recommended protocols including for preparing and preconditioning the EC cell. Assure the measurement system has no leaks and verify the gas scrubbing agent is not depleted. Use Figure 1 to record all data.

10.1.1 Zero Calibration. For both the O_2 and CO cells, introduce zero gas to the measurement system (e.g., at the calibration assembly) and record the concentration reading every minute until readings are constant for at least two consecutive minutes. Include the time and sample flow rate. Repeat the steps in this section at least once to verify the zero calibration for each component gas.

10.1.2 Zero Calibration Tolerance. For each zero gas introduction, the zero level output must be less than or equal to ± 3 percent of the up-scale gas value or ± 1 ppm, whichever is less restrictive, for the CO channel and less than or equal to ± 0.3 percent O_2 for the O_2 channel.

10.1.3 Up-Scale Calibration. Individually introduce each calibration gas to the measurement system (e.g., at the calibration assembly) and record the start time. Record all EC cell output responses and the flow rate during this “sample conditioning phase” once per minute until readings are constant for at least two minutes. Then begin the “measurement data phase” and record readings every 15 seconds for a total of two minutes, or as otherwise required. Finally, perform the “refresh phase” by introducing dry air, free from CO and other combustion gases, until readings are constant for at least two consecutive minutes. Then repeat the steps in this section at least once to verify the calibration for each component gas. Introduce all gases to flow through the entire sample handling system (i.e., at the exit end of the sampling probe or the calibration assembly).

10.1.4 Up-Scale Calibration Error. The mean of the difference of the “measurement data phase” readings from the reported standard gas value must be less than or equal to ± 5 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively. The maximum allowable deviation from the mean measured value of any single “measurement data phase” reading must be less than or equal to ± 2 percent or ± 1 ppm for CO or ± 0.5 percent O_2 , whichever is less restrictive, respectively.

10.2 Post-Sampling Calibration Check. Conduct a stack gas post-sampling calibration check after the stack gas sampling run or set of runs and within 12 hours of the initial calibration. Conduct up-scale and zero calibration checks using the protocol in Section 10.1. Make no changes to the sampling system or EC cell calibration until all post-sampling calibration checks have been recorded. If either the zero or up-scale calibration error exceeds the respective specification in Sections 10.1.2 and 10.1.4 then all measurement data collected since the previous successful calibrations are invalid and re-calibration and re-sampling are required. If the sampling system is disassembled or the EC cell calibration is adjusted, repeat the calibration check before conducting the next analyzer sampling run.

11.0 ANALYTICAL PROCEDURE

The analytical procedure is fully discussed in Section 8.

12.0 CALCULATIONS AND DATA ANALYSIS

Determine the CO and O_2 concentrations for each stack gas sampling run by calculating the mean gas concentrations of the data recorded during the “measurement data phase”.

13.0 Protocol Performance

Use the following protocols to verify consistent analyzer performance during each field sampling day.

13.1 Measurement Data Phase Performance Check. Calculate the mean of the readings from the “measurement data phase”. The maximum allowable deviation from the mean for each of the individual readings is ± 2 percent, or ± 1 ppm, whichever is less restrictive. Record the mean value and maximum deviation for each gas monitored. Data must conform to Section 10.1.4. The EC cell flow rate must conform to the specification in Section 8.3.

Example: A measurement data phase is invalid if the maximum deviation of any single reading comprising that mean is greater than ± 2 percent or ± 1 ppm (the default criteria). For example, if the mean = 30 ppm, single readings of below 29 ppm and above 31 ppm are disallowed).

13.2 Interference Check. Before the initial use of the EC cell and interference gas scrubber in the field, and semi-annually thereafter, challenge the interference gas scrubber with NO and NO_2 gas standards that are generally recognized as representative of diesel-fueled engine NO and NO_2 emission values. Record the responses displayed by the CO EC cell and other pertinent data on Figure 1 or a similar form.

13.2.1 Interference Response. The combined NO and NO_2 interference response should be less than or equal to ± 5 percent of the up-scale CO calibration gas concentration.

13.3 Repeatability Check. Conduct the following check once for each nominal range that is to be used on the CO EC cell within 5 days prior to each field sampling program. If a field sampling program lasts longer than 5 days, repeat this check every 5 days. Immediately repeat the check if the EC cell is replaced or if the EC cell is exposed to gas concentrations greater than 150 percent of the highest up-scale gas concentration.

13.3.1 Repeatability Check Procedure. Perform a complete EC cell sampling run (all three phases) by introducing the CO calibration gas to the measurement system and record the response. Follow Section 10.1.3. Use Figure 1 to record all data. Repeat the run three times for a total of four complete runs. During the four repeatability check runs, do not adjust the system except where necessary to achieve the correct calibration gas flow rate at the analyzer.

13.3.2 Repeatability Check Calculations. Determine the highest and lowest average “measurement data phase” CO concentrations from the four repeatability check runs and record the results on Figure 1 or a similar form. The absolute value of the difference between the maximum and minimum average values recorded must not vary more than ± 3 percent or ± 1 ppm of the up-scale gas value, whichever is less restrictive.

14.0 Pollution Prevention (Reserved)

15.0 Waste Management (Reserved)

16.0 Alternative Procedures (Reserved)

17.0 References

(1) “Development of an Electrochemical Cell Emission Analyzer Test Protocol”, Topical Report, Phil Juneau, Emission Monitoring, Inc., July 1997.

(2) “Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Emissions from Natural Gas-Fired Engines, Boilers, and Process Heaters Using Portable Analyzers”, EMC Conditional Test Protocol 30 (CTM-30), Gas Research Institute Protocol GRI-96/0008, Revision 7, October 13, 1997.

(3) “ICAC Test Protocol for Periodic Monitoring”, EMC Conditional Test Protocol 34 (CTM-034), The Institute of Clean Air Companies, September 8, 1999.

(4) “Code of Federal Regulations”, Protection of Environment, 40 CFR, Part 60, Appendix A, Methods 1-4; 10.

Table 1: Appendix A—Sampling Run Data.

Facility___________ Engine I.D.___________ Date______											
Run Type:	(_)		(_)				(_)			(_)	
(X)	Pre-Sample Calibration		Stack Gas Sample				Post-Sample Cal. Check			Repeatability Check	
Run #	1	1	2	2	3	3	4	4	Time	Scrub. OK	Flow- Rate
Gas	O_2	CO	O_2	CO	O_2	CO	O_2	CO			
Sample Cond. Phase											
″											
″											
″											
″											
Measurement Data Phase											
″											
″											
″											

″											
″											
″											
″											
″											
″											
″											
Mean											
Refresh Phase											
″											
″											
″											
″											

[78 FR 6721, Jan. 30, 2013]

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a Minor Source Operating Permit Renewal and Significant Permit Revision

Source Background and Description

Source Name:	**Putnamville Correctional Facility**
Source Location:	**1500 & 1946 W US 40, Greencastle, Indiana 46135**
County:	**Putnam**
SIC Code:	**9223**
Permit Renewal No.:	**M133-33057-00005**
Permit Reviewer:	**Julie Alexander**

On June 29, 2013, the Office of Air Quality (OAQ) had a notice published in the Banner-Graphic, Greencastle, Indiana, stating that Putnamville Correctional Facility had applied for the operation of new equipment at its correctional facility and to renew its operating permit. The notice also stated that the OAQ proposed to issue a MSOP renewal for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

No comments were received during the public notice period.

Additional Changes

IDEM, OAQ has decided to make additional revisions to the permit and calculations as described below, with deleted language as ~~strikeouts~~ and new language **bolded**.

Change No. 1:

The following unit descriptions have been updated to include more information about the units. Changes are shown here for Condition A.2; the same changes have been made in the D and E section description boxes.

A.2 Emission Units and Pollution Control Equipment Summary

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

(a) Two (2) natural gas-fired boilers, identified as Boiler #1 and Boiler #2, constructed in 1972 ~~and permitted in 1994~~, with a heat input **capacity** ~~rating~~ of 42.00 MMBtu per hour each, each using a natural gas-fired ignition burner with a heat input rating of 0.04474 MMBtu per hour each.

(b) One (1) ~~biomass~~ **wood**-fired boiler system including one (1) boiler, identified as Boiler #3, **permitted in 2007,** with a maximum heat input capacity of 14.33 MMBtu per hour, ~~capable of wood pellets~~ with emissions controlled by a cyclone, and exhausting to a stack.

(c) One (1) biomass **(wood)** handling and storage operation, consisting of the following:

(1) One (1) truck unloading operation with a maximum throughput of **9 tons of biomass (wood) per hour** ~~33,000 pounds of biomass per day~~.

(2) One (1) biomass **(wood)** storage silo **(volumetric capacity 10,000 cubic feet)**, with a maximum capacity to receive **4.13 tons** ~~8,250 pounds~~ per hour of biomass **(wood)** ~~(volumetric capacity 10,000 cubic feet)~~, with emissions controlled by a baghouse.

(3) One (1) biomass **(wood)** handling system with a maximum throughput of ~~8,208~~ **2.81** tons per **hour** ~~year~~, with emissions controlled by a baghouse including: **three (3)** ~~five (5)~~ augers, **three (3)** ~~one (1)~~ conveyor, one (1) bucket elevator, one (1) fuel transfer system, and one (1) metering bin.

(4) One (1) biomass **(wood)** ash **removal and** handling system with a maximum throughput of **0.02**~~148.80~~ tons per **hour**~~year~~.

(d) One (1) pallet shop operated by PEN Products **with a maximum sawing throughput rate of 10,000 pounds of lumber per hour**, constructed in 2008 and permitted in 2013, used for building wooden pallets, controlled by a dust collector with an estimated control efficiency of 90% ~~and a collection rate of 2 pounds of sawdust per hour~~.

***

(h) Emergency generators, including:

***

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for **the** High Mast **light**, with a rating of 53.6 hp;

(7) One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for **the maximum security unit (**MSU**)**, with a rating of 107.3 hp;

(8) One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for **the prison dining room (**PDR**)**, with a rating of 402.3 hp;

(9) One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house **(the building housing Boilers 1, 2 and 3)** with a rating of 670.5 hp;

(10) One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house **(the building housing Boilers 1, 2 and 3)** with a rating of 234.7 hp;

***

(i) One (1) electric-powered grizzly wood grinder constructed in 2011 and permitted in 2013, with a maximum raw wood capacity of 4.0 tons per hour, used to grind wood used in the **wood** ~~biomass~~-fired boiler;

***

(l) One (1) carpenter shop used for maintenance carpentry, constructed in 2000 and permitted in 2013, controlled by a baghouse with an estimated control efficiency of 90% ~~and a collection rate of 1 pound of sawdust per hour~~;

(m) One (1) park and patio construction shop operated by PEN Products **with a maximum**

sawing throughput rate of 240 pounds of lumber per hour, constructed in 2008 and permitted in 2013, used for building wooden park and patio furniture~~. The facility weighed the sawdust produced in one hour, and determined that the sawdust production rate is 1 pound per hour~~;

(n) Three (3) parts washers located in ~~vehicle maintenance constructed in 2000~~, auto maintenance education, ~~and~~ Labor 2, **and vehicle maintenance,** constructed in **1980,** 1980 **and 2000, respectively** and ~~all~~ permitted in 2013, using Zep Dyna 143 at a rate of 20.0, 20.0, and 30.0 gallons per year, respectively~~; and~~

Change No. 2:

The 326 IAC 6-2 applicability determination has been revised as follows:

Pursuant to 326 IAC 6-2, the particulate emissions from the Boilers #1, #2, #3 and liquefied petroleum gas-fired boiler shall be limited based on the table below.

Pursuant to 326 IAC 6-2-1(c), indirect heating facilities existing and in operation or which received permits to construct prior to September 21, 1983, and not located in Lake, Porter, Marion, Boone, Hamilton, Hendricks, Johnson, Morgan, Shelby, or Hancock county are subject to the requirements of 326 IAC 6-2-3.

Pursuant to 326 IAC 6-2-3(a), the particulate matter emissions (Pt) shall be limited by the following equation:

$$Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

Where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu).

Q = Total source maximum operating capacity rating in MMBtu/hr heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

C = Maximum ground level concentration with respect to distance from the point source at the "critical" wind speed for level terrain. This shall equal fifty (50) micrograms per cubic meter for a period not to exceed a sixty (60) minute time period.

a = Plume rise factor which is used to make allowance for less than theoretical plume rise. The value sixty-seven tenths (0.67) shall be used for Q less than or equal to one thousand (1,000) million British thermal units per hour heat input.

N = Number of stacks in fuel burning operation.

h = Stack height in feet. If a number of stacks of different heights exist, the average stack height to represent stacks shall be calculated by weighing each stack height with its particulate matter emission rate as follows:

$$h = \frac{\sum_{i=1}^{N} H_i \times pa_i \times Q}{\sum_{i=1}^{N} pa_i \times Q}$$

Where:

H_i = height of facility i stack, ft.

pa_i = actual controlled emission rate of facility i, (lb/MMBtu), using an emission factor from AP-42 or stack test data. Stacks constructed after January 1, 1971, shall be credited with GEP stack height only. GEP stack height shall be calculated as specified in 326 IAC 1-7.

Q = Heat input capacity of facility i, MMBtu/hr

For the liquefied petroleum gas unit:

$$h = \frac{(60 \times 0.0019 \times 84.09) + (45 \times 0.0019 \times 37) + (15 \times 0.0022 \times 0.54)}{(0.0019 \times 84.09) + (0.0019 \times 37) + (0.0022 \times 0.54)}$$

$$h = 55.209 \text{ ft}$$

Pursuant to 326 IAC 6-2-3(e), for any unit which has a rating of 250 MMBtu/hr or less, and which began operation after June 8, 1972, Pt shall not exceed 0.6 lb/MMBtu.

Indirect Heating Units Which Began Operation After June 8, 1972 and Before September 21, 1983							
Facility	Construction Date	Stack Height (feet)	Operating Capacity (MMBtu/hr)	Q (MMBt/hr)	Calculated Pt (lb/MMBtu)	Particulate Limitation, (Pt) (lb/MMBtu)	PM based on AP-42 (lb/MMBtu)
Boiler #1	1972	60	42.045	84.09	0.78	0.6	0.0019
Boiler #2	1972	60	42.045				0.0019
Orig.nat.gas #3 (removed 1983)	Pre-1980	45	37.00	121.09	-	-	-
liquefied petroleum gas-fired boiler	1980	Approx. 15	0.54	121.63	0.47	0.47	0.0022
Where: Q = Includes the capacity (MMBtu/hr) of the new unit(s) and the capacities for those unit(s) which were in operation at the source at the time the new unit(s) was constructed.							

Pursuant to 326 IAC 6-2-1(d), indirect heating facilities which received permit to construct after September 21, 1983 are subject to the requirements of 326 IAC 6-2-4.

Pursuant to 326 IAC 6-2-4(a), the particulate matter emissions (Pt) shall be limited by the following equation:

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

Where:

Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu).

Q = Total source maximum operating capacity rating in MMBtu/hr heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

Indirect Heating Units Which Began Operation After September 21, 1983						
Facility	Construction Date	Operating Capacity (MMBtu/hr)	Q (MMBt/hr)	Calculated Pt (lb/MMBtu)	Particulate Limitation, (Pt) (lb/MMBtu)	PM based on AP-42 (lb/MMBtu)
Boiler #3	2007	14.33	98.96	0.33	0.33	0.30
Where: Q = Includes the capacity (MMBtu/hr) of the new unit(s) and the capacities for those unit(s) which were in operation at the source at the time the new unit(s) was constructed.						

The permit has been updated to the following:

D.1.1 Particulate Matter Limitation (PM) [326 IAC 6-2]

(a) Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from Boiler #3 shall be limited to 0.33 pounds per MMBtu heat input.

(b) Pursuant to 326 IAC 6-2-3 (Particulate Emission Limitations for Sources of Indirect Heating), the PM emissions from the following units shall be limited to Pt pounds per MMBtu heat input, as follows:

Unit ID	**Pt (lb/MMBtu)**
Boiler #1	**0.6**
Boiler #2	**0.6**
liquefied petroleum gas-fired boiler	**0.47**

~~(a) Pursuant to 326 IAC 6-2-4, the biomass-fired boiler, identified as Boiler #3, shall be limited to 0.34 pounds of PM per MMBtu.~~

~~(b) Pursuant to 326 IAC 6-4-3, the natural gas-fired boiler Boiler #1 shall be limited to 0.6 pounds of PM per MMBtu each.~~

~~(c) Pursuant to 326 IAC 6-4-3, the natural gas-fired boiler Boiler #2 shall be limited to 0.6 pounds of PM per MMBtu.~~

~~(d) Pursuant to 326 IAC 6-2-4, the liquefied petroleum gas-fired boiler located in the training building shall be limited to 0.34 pounds of PM per MMBtu.~~

Change No. 3:

Alternative opacity limitations from 326 IAC 5-1-3 have been added to Section D.1 as follows, subsequent D.1 conditions have been renumbered as needed:

D.1.2 Startup, Shutdown, and Other Opacity Limits [326 IAC 5-1-3]

Pursuant to 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), the following applies:

(a) When building a new fire in a boiler, or shutting down a boiler, opacity may exceed the applicable limit established in 326 IAC 5-1-2 and stated in Section C - Opacity. However, opacity levels shall not exceed sixty percent (60%) for any six (6)-minute averaging period. Opacity in excess of the applicable limit established in 326 IAC 5-1-2 shall not continue for more than two (2) six (6)-minute averaging periods in any twenty-four (24) hour period.

(b) When removing ashes from the fuel bed or furnace in a boiler or blowing tubes, opacity may exceed the applicable limit established in 326 IAC 5-1-2 and stated in Section C - Opacity. However, opacity levels shall not exceed sixty percent (60%) for any six (6)-minute averaging period and opacity in excess of the applicable limit shall not continue for more than one (1) six (6)-minute averaging periods in any sixty (60) minute period. The averaging periods shall not be permitted for more than three (3) six (6)-minute averaging periods in a twelve (12) hour period.

(c) If this facility cannot meet the opacity limitations in (a) of this condition, the Permittee may submit a written request to IDEM, OAM, for a temporary alternative opacity limitation in accordance with 326 IAC 5-1-3(d). The Permittee must demonstrate that the alternative limit is needed and justifiable.

D.1.~~2~~**3** Preventive Maintenance Plan

****

D.1.~~3~~**4** Particulate Control

In order to comply with Condition D.1.1(a), the cyclone for particulate control shall be in operation and control emissions from the ~~biomass~~**wood**-fired boiler (Boiler #3) at all times that the ~~biomass~~ **wood**-fired boiler is in operation.

D.1.~~4~~**5** Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. The emissions unit shall be shut down no later than the completion of the **wood**~~biomass~~-fired boiler. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

D.1.~~5~~**6** Visible Emissions Notations

***

D.1.~~6~~**7** Record Keeping Requirements

(a) To document compliance with Condition D.1.6, the Permittee shall maintain a daily record of visible emission notations for ~~Biomass~~ **Wood** Boiler stack exhaust. The Permittee shall include in each daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

(b) ***

Change No. 4:

The grizzly wood grinder has been added to Section D.2 and the 326 IAC 6-3 applicability determination has been revised as follows:

326 IAC 6-3 limits apply to manufacturing processes only, and not to processes that do not involve the production of a product; therefore, the limit does not apply to the carpenter shop which is used only for maintenance.

In October 1993 a Final Order Granting Summary Judgment was signed by Administrative Law Judge (“ALJ”) Garrettson resolving an appeal filed by Kimball Hospitality Furniture Inc. (Cause Nos. 92-A-J-730 and 92-A-J-833) related to the method by which IDEM calculated potential emissions from woodworking operations. In his findings, the ALJ determined that particulate controls are necessary for the facility to produce its normal product and are integral to the normal operation of the facility, and therefore, potential emissions should be calculated after controls. Based on this ruling, potential emissions for particulate matter were calculated after consideration of the controls for purposes of determining operating permit level.

Pursuant to 326 IAC 6-3-1(b)(14), the pallet shop operations, park and patio shop operations are not subject to 326 IAC 6-3 because the after-control potential emissions are less than five hundred fifty-one thousandths (0.551) pound per hour, and the ash handling for the wood boiler is not subject because the uncontrolled emissions are less than this amount.

Each emission unit subject to 326 IAC 6-3 will be able to comply with its respective limit without the use of a control device.

The permit has been updated as the following:

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(c) One (1) biomass **(wood)** handling and storage operation, consisting of the following:

(1) One (1) truck unloading operation with a maximum throughput of **9 tons of biomass (wood) per hour** ~~33,000 pounds of biomass per day~~.

(2) One (1) biomass **(wood)** storage silo **(volumetric capacity 10,000 cubic feet)**, with a maximum capacity to receive **4.13 tons** ~~8,250 pounds~~ per hour of biomass ~~(volumetric capacity 10,000 cubic feet)~~, with emissions controlled by a baghouse.

(3) One (1) biomass **(wood)** handling system with a maximum throughput of ~~8,208~~ **2.81** tons per **hour** ~~year~~, with emissions controlled by a baghouse including: **three (3)** ~~five (5)~~ augers, **three (3)** ~~one (1)~~ conveyor, one (1) bucket elevator, one (1) fuel transfer system, and one (1) metering bin.

(4) One (1) biomass **(wood)** ash **removal and** handling system with a maximum throughput of **0.02**~~148.80~~ tons per **hour**~~year~~.

(i) One (1) electric-powered grizzly wood grinder constructed in 2011 and permitted in 2013, with a maximum raw wood capacity of 4.0 tons per hour, used to grind wood used in the wood-fired boiler;

D.2.1 Particulate [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate emissions from the biomass **(wood)** ~~and ash~~ handling and storage **and grizzly wood grinder** operation**s** shall be limited by the following:

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

$E = 4.10 P^{0.67}$

Where:
E = Rate of emission in pounds per hour; and
P = Process weight rate in tons per hour

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Biomass **(wood)** Storage Silo	4.13	10.60
Truck Unloading Operation	9.00	17.87
Biomass **(wood)** Handling System	2.81	8.20
~~Ash Handling System~~	~~0.02~~	~~0.30~~
Grizzly Wood Grinder	**4.00**	**10.38**

Change No. 5:

A copy of 40 CFR 63 Subpart IIII - National Emission Standards for Hazardous Air Pollutants: Surface Coating of Automobiles and Light-Duty Trucks was inadvertently included in Attachment B of the draft permit. Attachment B has been corrected to include a copy of 40 CFR 60 Subpart IIII - Standard of Performance for Stationary Compression Ignition Internal Combustion Engines.

Rule cites have been corrected in Sections E.1, E.2, E.3, and E.4, and reporting addresses have been added for the NESHAPs.

SECTION E.1 New Source Performance Standards ~~[326 IAC 2-7-5(1)]~~ **[326 IAC 2-6.1 5(a)(1)]** [326 IAC 12-1] [40 CFR 60, Subpart JJJJ]

Facility Description ~~[326 IAC 2-8-4(10)]~~ **[326 IAC 2-6.1-5(a)(1)]**:
***

SECTION E.2 New Source Performance Standards ~~[326 IAC 2-7-5(1)]~~ **[326 IAC 2-6.1-5(a)(1)]** [326 IAC 12-1] [40 CFR 60, Subpart IIII]

Facility Description ~~[326 IAC 2-8-4(10)~~] **[326 IAC 2-6.1-5(a)(1)]**:
***

SECTION E.3 New Source Performance Standards ~~[326 IAC 2-7-5(1)]~~ **[326 IAC 2-6.1-5(a)(1)]** [326 IAC 12-1] [40 CFR 60, Subpart Dc]

Facility Description ~~[326 IAC 2-8-4(10)]~~ **[326 IAC 2-6.1-5(a)(1)]**:
***

SECTION E.4 ~~New Source Performance Standards~~ **National Emission Standards for Hazardous Air Pollutants** ~~[326 IAC 2-7-5(1)]~~ **[326 IAC 2-6.1-5(a)(1)]**[326 IAC ~~12-1~~ **20**] [40 CFR ~~60~~ **63**, Subpart JJJJJJ]

Facility Description ~~[326 IAC 2-8-4(10)]~~ **[326 IAC 2-6.1-5(a)(1)]**:
**

E.4.1 General Provision Relating to ~~New Source Performance Standards~~ **National Emission Standards for Hazardous Air Pollutants** [326 IAC ~~12~~ **20-1**] [40 CFR ~~60~~ **63,** Subpart A]

(a) ~~Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for the biomass-fired boilers except as otherwise specified in 40 CFR Part 60,~~ **The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 63,** Subpart JJJJJJ.

(b) Pursuant to 40 CFR ~~60.10~~ **63.10**, the Permittee shall submit all required notifications and reports to:

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

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

E.4.2 ~~Standard of Performance~~ **National Emission Standards for Hazardous Air Pollutants** for Industrial, Commercial, and Institutional Boilers Area Sources ~~[326 IAC 12]~~ [40 CFR ~~60~~ **63**, Subpart JJJJJJ]

Pursuant to 40 CFR ~~60~~ **63** Subpart JJJJJJ (included as Attachment D of this permit), the Permittee shall comply with the provisions of Standard of Performance for Industrial, Commercial, and Institutional Boilers Area Sources for the natural gas fired boilers as specified as follows:

***

SECTION E.5 ~~New Source Performance~~ Standards **National Emission Standards for Hazardous Air Pollutants** ~~[326 IAC 2-7-5(1)]~~ **[326 IAC 2-6.1-5(a)(1)]** [326 IAC ~~12-1~~ **20**] [40 CFR ~~60~~ **63**, Subpart ZZZZ]

E.5.1 General Provisions Relating to NESHAP ZZZZ [326 IAC 20-1][40 CFR Part 63, Subpart A]

(a) The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

(b) **Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:**

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

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Change No. 6:

The applicability determination for 40 CFR 63 Subpart ZZZZ has been updated in Condition E.5.2 and the wording has been revised to show the source is not a major source of hazardous air pollutants.

This source is subject to the National Emission Standards for Hazardous Air Pollutants for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63.6580, Subpart ZZZZ).

Pursant to 40 CFR 63.6675, an "institutional emergency stationary RICE means an emergency stationary RICE used in institutional establishments such as medical centers, nursing homes, research centers, institutions of higher education, correctional facilities, elementary and secondary schools, libraries, religious establishments, police stations, and fire stations." Since all the generators are for emergencies and located at a correctional facility, they fit under this definition.

Pursuant to 40 CFR 63.6585(f)(3), existing institutional emergency stationary RICE located at an area source of HAP emissions that do not operate or are not contractually obligated to be available for more than 15 hours per calender year are not subject to the requirements of 40 CFR 63, Subpart ZZZZ. Generators 1, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12 are existing emergency generators because they were all installed before June 12, 2006 and are located at an area source of HAPS. Therefore they not subject to the requirements of the NESHAP.

Generator 2 is a new emergency generator because it was installed after June 12, 2006 and is located at an area source of HAPS. Generator 2 is subject to the following requirements of 40 CFR 63, Subpart ZZZZ:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a), (c), (d), (f)(3)
(3) 40 CFR 63.6590(a)(1)(iii), (a)(2)(iii), (c)(1)
(4) 40 CFR 63.6640(f)(1), (2), (4)
(5) 40 CFR 63.6645(a)(5)
(6) 40 CFR 63.6650(a), (b), (h)
(7) 40 CFR 63.6655(f)(2)
(8) 40 CFR 63.6660
(9) 40 CFR 63.6665
(10) 40 CFR 63.6670
(11) 40 CFR 63.6675
(12) Table 7 for Subpart ZZZZ
(13) Table 8 for Subpart ZZZZ

The permit has also been updated to the following:

Emissions Unit Description:

(h) Emergency generators, including:

~~(1) One (1) diesel-fired emergency generator, identified as Generator 1, manufactured February 27, 1987, installed January 8, 1988, and permitted in 2013, providing emergency power for the administrative building, with a rating of 72.4 horsepower (hp);~~

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

~~(3) One (1) diesel-fired emergency generator, identified as Generator 3, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 10, 11, and 12, with a rating of 402.3 hp;~~

~~(4) One (1) diesel-fired emergency generator, identified as Generator 4, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 17 and 18, with a rating of 402.3 hp;~~

~~(5) One (1) diesel-fired emergency generator, identified as Generator 5, manufactured August 1986, and permitted in 2013, providing emergency power for Dorms 13 through 16, with a rating of 368.8 hp;~~

~~(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for high mast light, with a rating of 53.6 hp;~~

~~(7) One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for maximum security unit (MSU), with a rating of 107.3 hp;~~

~~(8) One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for prison dining room (PDR), with a rating of 402.3 hp;~~

~~(9) One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house, the building housing Boilers 1, 2 and 3, with a rating of 670.5 hp;~~

~~(10) One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house, the building housing Boilers 1, 2 and 3, with a rating of 234.7 hp;~~

~~(11) One (1) diesel-fired emergency generator, identified as Generator 11, manufactured February 10, 1989, installed April, 1989, and permitted in 2013, providing emergency power for the store room, with a rating of 268.2 hp;~~

~~(12) One (1) diesel-fired emergency generator, identified as Generator 12, manufactured February 28, 2001 installed March 7, 2001, and permitted in 2013, providing emergency power for the wastewater treatment plant, with a rating of 234.7 hp;~~

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

E.5.2 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-82][40 CFR 63, Subpart ZZZZ]

The Permittee which owns or operates a stationary RICE at a ~~major~~ **minor** source of HAP emissions shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment E of this permit):

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585**(a),** (c)**, (d),** (f)(3)
(3) 40 CFR 63.6590(a)(1)(iii), (a)(2)(iii), (c)(1)
(4) 40 CFR 63.6640(f)**(1),** (2)~~(ii) and (iii)~~**, (4)**

(5) **40 CFR 63.6645(a)(5)**
(6) **40 CFR 63.6650(a), (b), (h)**
(7) **40 CFR 63.6655(f)(2)**
(8) **40 CFR 63.6660**
(9) **40 CFR 63.6665**
(10) 40 CFR 63.6670
(11) 40 CFR 63.6675
(12) **Table 7 for Subpart ZZZZ**
(13) **Table 8 for Subpart ZZZZ**

Change No. 6:

IDEM has clarified Section C - Instrument Specifications to indicate that the analog instrument must be capable of measuring the parameters outside the normal range.

C.12 Instrument Specifications [326 IAC 2-1.1-11]

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

(b) ***

Additional Changes:

On July 12, 2013, the United States Court of Appeals for the District of Columbia Circuit vacated the EPA's 2011 biogenic Deferral Rule, which had deferred regulation of biogenic carbon dioxide (CO2) emissions for three years. Therefore, CO2 emissions have been included in the Greenhouse Gases emissions calculations.

The calculations have also been amended to correct a few errors. See Appendix A to the TSD Addendum for the revisions to the emissions calculations. The <u>PTE of Proposed Revision</u> table is amended as follows:

Proposed Revision

<u>Permit Level Determination – MSOP Revision</u>

The following table is used to determine the appropriate permit level under 326 IAC 2-6.1-6. This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	PTE of Proposed Revision (tons/year)								
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	Total HAPs	GHGs as CO_2e
Ten (10) laundry dryers	0.03	0.13	0.13	0.01	1.70	0.09	1.42	0.03	2,048
Three (3) laundry dryers	4.04E-03	0.02	0.02	1.28E-03	0.21	0.01	0.18	4.01E-03	257
Rotisserie Oven	3.26E-03	0.01	0.01	1.03E-03	0.17	9.45E-03	0.14	3.24E-03	207
Carousel Oven	2.24E-03	8.97E-03	8.97E-03	7.09E-04	0.12	6.49E-03	0.10	2.23E-03	143
Griddles	2.64E-03	0.01	0.01	8.35E-04	0.14	7.65E-03	0.12	2.63E-03	168

Process/ Emission Unit	PTE of Proposed Revision (tons/year)								
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	Total HAPs	GHGs as CO_2e
Tilt Skillet	1.17E-03	4.70E-03	4.70E-03	3.71E-04	0.06	3.40E-03	0.05	1.17E-03	75
Range	8.97E-04	3.59E-03	3.59E-03	2.83E-04	0.05	2.60E-03	0.04	8.91E-04	57
Space Heater	1.22E-03	4.90E-03	4.90E-03	3.86E-04	0.06	3.54E-03	0.05	1.22E-03	78
Space Heaters	5.26E-03	0.02	0.02	1.66E-03	0.28	0.02	0.23	5.23E-03	334
Furnace	1.43E-03	5.71E-03	5.71E-03	4.51E-04	0.08	4.13E-03	0.06	1.42E-03	91
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-
Six (6) Space Heaters	8.57E-03	0.03	0.03	2.71E-03	0.45	0.02	0.38	8.51E-03	544
One (1) Furnace	6.53E-04	2.61E-03	2.61E-03	2.06E-04	0.03	1.89E-03	0.03	6.48E-04	41
Park and Patio Shop	0.18	0.11	0.11	-	-	-	-	-	-
Pallet Shop	0.77	0.44	0.44	-	-	-	-	-	-
Fryer	1.44E-03	5.03E-03	5.03E-03	0.01	0.09	7.18E-03	0.05	-	92
Grill	2.97E-03	0.01	0.01	0.02	0.19	0.01	0.11	-	190
Boiler	5.19E-03	0.02	0.02	0.04	0.34	0.03	0.19	-	332
Furnace	9.81E-03	0.01	0.01	0.35	0.10	1.67E-03	0.02	3.37E-05	2
Space Heater	2.39E-03	8.38E-03	8.38E-03	0.02	0.16	0.01	0.09	-	153
Generator 1	0.04	0.04	0.04	0.04	0.56	0.05	0.12	4.91E-04	21
Generator 2	1.26E-03	2.57E-03	2.57E-03	7.79E-05	0.29	3.92E-03	0.49	4.26E-03	18
Generator 3	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Generator 4	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Generator 5	0.20	0.20	0.20	0.19	2.86	0.23	0.62	2.50E-03	106
Generator 6	0.03	0.03	0.03	0.03	0.42	0.03	0.09	3.64E-04	15
Generator 7	0.06	0.06	0.06	0.05	0.83	0.07	0.18	7.27E-04	31
Generator 8	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Generator 9	0.12	0.07	0.07	0.68	4.02	0.12	0.92	1.85E-03	195
Generator 10	0.13	0.13	0.13	0.12	1.82	0.15	0.39	1.59E-03	68
Generator 11	0.15	0.15	0.15	0.14	2.08	0.17	0.45	1.82E-03	77
Generator 12	0.13	0.13	0.13	0.12	1.82	0.15	0.39	1.59E-03	68
Welding operations	0.02	0.02	0.02	-	-	-	-	2.26E-03	-

Process/ Emission Unit	PTE of Proposed Revision (tons/year)								
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	Total HAPs	GHGs as CO_2e
Grinding and metal cutting operations	5.48E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter shop	0.49	0.49	0.49	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	6.58E-02	-	6.58E-04	-
Paint Shop	-	-	-	-	-	2.25	-	1.18	-
Total PTE of Proposed Revision	9.20	8.97	8.96	2.44	28.28	4.29	8.95	1.27	5,759
negl. = negligible Worst Single HAP is HCL.									

Pursuant to 326 IAC 2-6.1-6(i)(1)(E), this MSOP is revised through Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit Revision and the proposed revision involves the operation of emission units with a potential to emit greater than or equal to twenty-five (25) tons per year of NOx.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this MSOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)									
	PM	PM_{10}*	$PM_{2.5}$**	SO_2	NO_x	VOC	CO	Worst Single HAP	Total HAPs	GHGs as CO_2e
Boiler # 1 and Boiler # 2	6.86E-01	2.74	2.74	2.17E-01	36.11	1.99	30.33	-	6.81E-01	43,595
Boiler #3	25.11	23.66	20.52	1.57	30.76	1.07	37.66	1.19	2.21	13,325
Natural Gas-Fired Combustion Units	6.36E-02	6.36E-02	2.54E-01	2.01E-02	3.35	1.84E-01	2.81	-	6.32E-02	4,043
LP Gas-Fired Combustion Units	1.20E-02	4.20E-02	4.20E-02	8.99E-02	7.79E-01	6.00E-02	4.50E-01	-	-	766
Diesel-Fired Combustion Unit	9.81E-03	1.17E-02	1.04E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	-	3.37E-05	2
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	19.74	1.60	4.25	-	1.73E-02	735
Natural Gas Emergency Generator (G2)	1.26E-03	2.57E-03	2.57E-03	7.79E-05	2.93E-01	3.92E-03	4.93E-01	-	4.26E-03	18
Large Diesel Emergency Generator (G9)	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	-	1.85E-03	195
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-
Biomass (wood) Handling Operations	8.49	3.05	6.78E-01	-	-	-	-	-	-	-

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)									
	PM	PM_{10}*	$PM_{2.5}$**	SO_2	NO_x	VOC	CO	Worst Single HAP	Total HAPs	GHGs as CO_2e
Welding and Plasma Cutting	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	0.49	0.49	0.49	-	-	-	-	-	-	-
Pallet Shop	0.18	0.10	0.10	-	-	-	-	-	-	-
Park & Patio Construction	0.35	0.20	0.20	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	2.36E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	2.75E-01	6.76E-02	-	-	-	-	-	-	-
Total	**44.40**	**38.24**	**32.71**	**4.23**	**95.14**	**7.51**	**76.95**	**1.19**	**4.17**	**62,679**
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA	100,000 CO_2e
Emission Offset/ Nonattainment NSR Major Source Thresholds	100	100	100	100	100	100	100	NA	NA	NA

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

Additional federal rules have been examined for potential applicability as follows:

40 CFR Parts 60 and 241, Commercial and Industrial Solid Waste Incineration Units: Reconsideration and Final Amendments; Non-Hazardous Secondary Materials That Are Solid Waste
Final rule published February 7, 2013

The revised definition of clean cellulosic biomass clarifies that untreated wood pallets are a traditional fuel and not a solid waste unless discarded. Wood pallets that contain treated wood, such as CCA treated wood, would not be considered ‘‘clean’’ under the definition of clean cellulosic biomass. Also, municipal solid waste or municipal-type solid waste is defined as "household, commercial/retail, or institutional waste" which specifically excludes wood pallets and clean wood. Therefore, the following New Source Performance Standards are not applicable to the wood-fired boiler when firing chipped wood pallets or clean wood:

> 40 CFR 60, Subpart AAAA, New Source Performance Standards for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modifications or Reconstruction is Commenced After June 6, 2001
>
> 40 CFR 60, Subpart CCCC, New Source Performance Standards for Commercial and Industrial Solid Waste Incineration Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced After June 1, 2001

40 CFR 60, Subpart EEEE, New Source Performance Standards for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004, or for Which Modification or Reconstruction is Commenced on or After June 16, 2006.

No change will be made to the original TSD. The OAQ prefers that the TSD reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

IDEM Contact

(a) Questions regarding this proposed Minor Source Operating Permit Renewal and Significant Permit Revision can be directed to Julie Alexander at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-1782 or toll free at 1-800-451-6027 extension 3-1782.

(b) A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

1) Uncontrolled Emissions

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Worst Case HAP tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Boiler # 1 and Boiler # 2	6.86E-01	2.74	2.74	2.17E-01	36.11	1.99	30.33	-	6.81E-01	43,595
Boiler #3 (wood-fired)	25.11	23.66	20.52	1.57	30.76	1.07	37.66	1.19	2.21	13,325
Natural Gas-Fired Combustion Units	6.36E-02	6.36E-02	2.54E-01	2.01E-02	3.35	1.84E-01	2.81	-	6.32E-02	4,043
LP Gas-Fired Combustion Units	1.20E-02	4.20E-02	4.20E-02	8.99E-02	7.79E-01	6.00E-02	4.50E-01	-	-	766
Diesel-Fired Combustion Unit	9.81E-03	1.17E-02	1.04E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	-	3.37E-05	2
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	19.74	1.60	4.25	-	1.73E-02	735
Natural Gas Emergency Generator (G2)	1.26E-03	2.57E-03	2.57E-03	7.79E-05	0.29	3.92E-03	4.93E-01	-	4.26E-03	18
Large Diesel Emergency Generator (G9)	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	-	1.85E-03	195
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-
Biomass (Wood) Handling Operations	8.46	3.02	6.49E-01	-	-	-	-	-	-	-
Welding and Plasma Cutting	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	0.49	0.49	0.49	-	-	-	-	-	-	-
Pallet Shop	0.18	0.10	0.10	-	-	-	-	-	-	-
Park & Patio Construction	0.35	0.20	0.20	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	2.36E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	2.75E-01	6.76E-02	-	-	-	-	-	-	-
Total	**44.40**	**38.24**	**32.71**	**4.23**	**95.14**	**7.51**	**76.95**	**1.19**	**4.17**	**62,679**

(1) Worst Case HAP is HCL.

2) Controlled Emissions

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Worst Case HAP tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Boiler # 1 and Boiler # 2	6.86E-01	2.74	2.74	2.17E-01	3.61E+01	1.99	30.33	-	6.81E-01	43,595
Boiler #3 (wood-fired)	18.83	16.95	10.04	1.57	30.76	1.07	37.66	1.19	2.21	13,325
Natural Gas-Fired Combustion Units	6.36E-02	6.36E-02	2.54E-01	2.01E-02	3.35	1.84E-01	2.81	-	6.32E-02	4,043
LP Gas-Fired Combustion Units	1.20E-02	4.20E-02	4.20E-02	8.99E-02	7.79E-01	6.00E-02	4.50E-01	-	-	766
Diesel-Fired Combustion Unit	9.81E-03	1.17E-02	1.04E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	-	3.37E-05	2
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	19.74	1.60	4.25	-	1.73E-02	735
Natural Gas Emergency Generator (G2)	1.26E-03	2.57E-03	2.57E-03	7.79E-05	0.29	3.92E-03	4.93E-01	-	4.26E-03	18
Large Diesel Emergency Generator (G9)	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	-	1.85E-03	195
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-
Biomass (Wood) Handling Operations	7.32	2.52	5.62E-01	-	-	-	-	-	-	-
Welding and Plasma Cutting	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	4.87E-01	4.87E-01	4.87E-01	-	-	-	-	-	-	-
Pallet Shop	0.18	0.10	0.10	-	-	-	-	-	-	-
Park & Patio Construction	0.35	0.20	0.20	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	2.36E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	2.75E-01	6.76E-02	-	-	-	-	-	-	-
Total	**36.99**	**31.01**	**22.14**	**4.23**	**95.14**	**7.51**	**76.95**	**1.19**	**4.17**	**62,679**

(1) Worst Case HAP is HCL.

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

3) Potential to Emit After Issuance

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Worst Case HAP tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Boiler # 1 and Boiler # 2	6.86E-01	2.74	2.74	2.17E-01	36.11	1.99	30.33	-	6.81E-01	43,595
Boiler #3 (wood-fired)	25.11	23.66	20.52	1.57	30.76	1.07	37.66	1.19	2.21	13,325
Natural Gas-Fired Combustion Units	6.36E-02	6.36E-02	2.54E-01	2.01E-02	3.35	1.84E-01	2.81	-	6.32E-02	4,043
LP Gas-Fired Combustion Units	1.20E-02	4.20E-02	4.20E-02	8.99E-02	7.79E-01	6.00E-02	4.50E-01	-	-	766
Diesel-Fired Combustion Unit	9.81E-03	1.17E-02	1.04E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	-	3.37E-05	2
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	19.74	1.60	4.25	-	1.73E-02	735
Natural Gas Emergency Generator (G2)	1.26E-03	2.57E-03	2.57E-03	7.79E-05	2.93E-01	3.92E-03	4.93E-01	-	4.26E-03	18
Large Diesel Emergency Generator (G9)	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	-	1.85E-03	195
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-
Biomass (Wood) Handling Operations	8.46	3.02	6.49E-01	-	-	-	-	-	-	-
Welding and Plasma Cutting	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	0.49	0.49	0.49	-	-	-	-	-	-	-
Pallet Shop	0.18	0.10	0.10	-	-	-	-	-	-	-
Park & Patio Construction	0.35	0.20	0.20	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	2.36E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	2.75E-01	6.76E-02	-	-	-	-	-	-	-
Total	**44.40**	**38.24**	**32.71**	**4.23**	**95.14**	**7.51**	**76.95**	**1.19**	**4.17**	**62,679**

(1) Worst Case HAP is HCL.

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

1) Constructed in 1972

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 10	0.13	0.13	0.13	0.12	1.82	0.15	0.39	1.59E-03	**68**
Total tons/year @ 500 hrs	0.13	0.13	0.13	0.12	1.82	0.15	0.39	1.59E-03	68
Registration or Permit Threshhold	Indiana Regulation APC-1 did not require construction or operation permit for this unit.								

2) Constructed in 1980

Emissions Units	Location	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Space Heater - exempt*	Training Building Garage	1.22E-03	4.90E-03	4.90E-03	3.86E-04	6.44E-02	3.54E-03	5.41E-02	1.22E-03	78
Space Heaters - exempt*	Outside Warehouse	5.26E-03	2.10E-02	2.10E-02	1.66E-03	2.77E-01	1.52E-02	2.33E-01	5.23E-03	334
Furnace - exempt*	Exercise Room	1.43E-03	5.71E-03	5.71E-03	4.51E-04	7.51E-02	4.13E-03	6.31E-02	1.42E-03	91
Fryer - exempt*	Administrative Kitchen	1.44E-03	5.03E-03	5.03E-03	1.08E-02	9.33E-02	7.18E-03	5.39E-02	-	92
Grill - exempt*	Administrative Kitchen	2.97E-03	1.04E-02	1.04E-02	2.23E-02	1.93E-01	1.48E-02	1.11E-01	-	190
Boiler - exempt*	Training Building	5.19E-03	1.82E-02	1.82E-02	3.90E-02	3.38E-01	2.60E-02	1.95E-01	-	332
Furnace - exempt*	Labor 2	9.81E-03	1.17E-02	1.04E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	3.37E-05	2
Parts Washers	Auto Maintenance and Labor 2	-	-	-	-	-	1.65E-01	-	1.70E-03	-
Total, tons/year @ 8,760 hrs		0.03	0.08	0.08	0.42	1.14	0.24	0.73	9.60E-03	1,118
Emissions, lb/hr		3.12E-06	8.78E-06	8.64E-06	4.83E-05	1.30E-04	2.71E-05	8.38E-05	1.10E-06	1.28E-01
Emissions, lbs/day		7.49E-05	2.11E-04	2.07E-04	1.16E-03	3.12E-03	6.50E-04	2.01E-03	2.63E-05	3.06E+00
Registration Threshhold, lbs/hr or lbs/day		5 or 25	n/a	n/a	10 or 50	5 or 25	3 or 15	25 or 125	n/a	n/a

* At the time of installation these units were categorically exempted from air permitting requirements by Indiana's APC-19 Section 4 as promulgated April 16, 1973.

3) Constructed in 1986

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 5	0.20	0.20	0.20	0.19	2.86	0.23	0.62	2.50E-03	106
Total tons/year @ 500 hrs	0.20	0.20	0.20	0.19	2.86	0.23	0.62	2.50E-03	106
Emissions, lb/hr	4.06E-04	4.06E-04	4.06E-04	3.78E-04	5.72E-03	4.64E-04	1.23E-03	5.00E-06	2.13E-01
Emissions, lbs/day	9.74E-03	9.74E-03	9.74E-03	9.07E-03	1.37E-01	1.11E-02	2.96E-02	1.20E-04	5.11E+00
Registration Threshhold, lbs/hr or lbs/day	5 or 25	n/a	n/a	10 or 50	5 or 25	3 or 15	25 or 125	n/a	n/a

4) Constructed in 1988

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 1	0.04	0.04	0.04	0.04	0.56	0.05	0.12	4.91E-04	21
Total tons/year @ 500 hrs	0.04	0.04	0.04	0.04	0.56	0.05	0.12	4.91E-04	21
Emissions, lb/hr	7.97E-05	7.97E-05	7.97E-05	7.42E-05	1.12E-03	9.10E-05	2.42E-04	9.82E-07	4.18E-02
Emissions, lbs/day	1.91E-03	1.91E-03	1.91E-03	1.78E-03	2.69E-02	2.18E-03	5.80E-03	2.36E-05	1.00E+00
Registration Threshhold, lbs/hr or lbs/day	5 or 25	n/a	n/a	10 or 50	5 or 25	3 or 15	25 or 125	n/a	n/a

5) Constructed in 1989

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 11	0.15	0.15	0.15	0.14	2.08	0.17	0.45	1.82E-03	77
Total tons/year @ 500 hrs	0.15	0.15	0.15	0.14	2.08	0.17	0.45	1.82E-03	77
Emissions, lb/hr	2.95E-04	2.95E-04	2.95E-04	2.75E-04	4.16E-03	3.37E-04	8.96E-04	3.64E-06	1.55E-01
Emissions, lbs/day	7.08E-03	7.08E-03	7.08E-03	6.60E-03	9.98E-02	8.09E-03	2.15E-02	8.73E-05	3.71E+00
Registration Threshhold, lbs/hr or lbs/day	5 or 25	n/a	n/a	10 or 50	5 or 25	3 or 15	25 or 125	n/a	n/a

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6) Constructed in 1991

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 3	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Generator 4	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Total tons/year @ 500 hrs	0.44	0.44	0.44	0.41	6.24	0.51	1.34	0.01	232
Emissions, lb/hr	8.85E-04	8.85E-04	8.85E-04	8.25E-04	1.25E-02	1.01E-03	2.69E-03	1.09E-05	4.64E-01
Emissions, lbs/day	2.12E-02	2.12E-02	2.12E-02	1.98E-02	2.99E-01	2.43E-02	6.45E-02	2.62E-04	1.11E+01
Registration Threshhold, lbs/hr or lbs/day	5 or 25	n/a	n/a	10 or 50	5 or 25	3 or 15	25 or 125	n/a	n/a

7) Constructed in 1993

Emissions Units	Location	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Space Heater	Compost & Recycling Building	2.39E-03	8.38E-03	8.38E-03	1.80E-02	1.56E-01	1.20E-02	8.98E-02	-	153
Total tons/year @ 8,760 hrs		2.39E-03	8.38E-03	8.38E-03	1.80E-02	1.56E-01	1.20E-02	8.98E-02	-	1.53E+02
Emissions, lb/hr		2.73E-07	9.56E-07	9.56E-07	2.05E-06	1.78E-05	1.37E-06	1.02E-05	-	1.75E-02
Emissions, lbs/day		6.56E-06	2.30E-05	2.30E-05	4.92E-05	4.26E-04	3.28E-05	2.46E-04	-	4.19E-01
Registration Threshhold, lbs/hr or lbs/day		5 or 25	n/a	n/a	10 or 50	5 or 25	3 or 15	25 or 125	n/a	n/a

8) Constructed in 1997

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Rotisserie Oven	3.26E-03	1.31E-02	1.31E-02	1.03E-03	1.72E-01	9.45E-03	1.44E-01	3.24E-03	207
Carousel Oven	2.24E-03	8.97E-03	8.97E-03	7.09E-04	1.18E-01	6.49E-03	9.92E-02	2.23E-03	143
Griddles	2.64E-03	1.06E-02	1.06E-02	8.35E-04	1.39E-01	7.65E-03	1.17E-01	2.63E-03	168
Tilt Skillet	1.17E-03	4.70E-03	4.70E-03	3.71E-04	6.18E-02	3.40E-03	5.19E-02	1.17E-03	75
Range	8.97E-04	3.59E-03	3.59E-03	2.83E-04	4.72E-02	2.60E-03	3.97E-02	8.91E-04	57
Total	**0.01**	**0.04**	**0.04**	**3.23E-03**	**0.54**	**0.03**	**0.45**	**1.02E-02**	**650**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

9) Constructed in 1999

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 8	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Total	**0.22**	**0.22**	**0.22**	**0.21**	**3.12**	**0.25**	**0.67**	**2.73E-03**	**116**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

10) Constructed in 2000

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Welding operations	0.02	0.02	0.02	-	-	-	-	2.26E-03	-
Grinding and metal cutting operations	5.48E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter shop	0.49	0.49	0.49	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	0.07	-	6.58E-04	-
Paint Shop	-	-	-	-	-	2.25	-	1.18	-
Total	**0.51**	**0.51**	**0.51**	**-**	**-**	**2.32**	**-**	**1.19**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

11) Constructed in 2001

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 12	0.13	0.13	0.13	0.12	1.82	0.15	0.39	1.59E-03	68
Generator 9	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02E+00	1.18E-01	9.22E-01	1.85E-03	195
Generator 7	0.06	0.06	0.06	0.05	0.83	0.07	0.18	7.27E-04	31
Total	**0.31**	**0.26**	**0.26**	**0.85**	**6.67**	**0.33**	**1.49**	**4.16E-03**	**294**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

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12) Constructed in 2004

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Ten (10) laundry dryers	0.03	0.13	0.13	0.01	1.70	0.09	1.42	3.20E-02	2,048
Three (3) laundry dryers	4.04E-03	0.02	0.02	0.00	0.21	0.01	0.18	4.01E-03	257
Total	**0.04**	**0.15**	**0.15**	**0.01**	**1.91**	**0.10**	**1.60**	**3.60E-02**	**2,304**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

13) Constructed in 2006

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 6	0.03	0.03	0.03	0.03	0.42	0.03	0.09	3.64E-04	15
Total	**0.03**	**0.03**	**0.03**	**0.03**	**0.42**	**0.03**	**0.09**	**3.64E-04**	**15**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

14) Constructed in 2007

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Generator 2	1.26E-03	2.57E-03	2.57E-03	7.79E-05	2.93E-01	3.92E-03	4.93E-01	4.26E-03	18
Total	**1.26E-03**	**2.57E-03**	**2.57E-03**	**7.79E-05**	**2.93E-01**	**3.92E-03**	**4.93E-01**	**4.26E-03**	**18**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

15) Constructed in 2008 (Pallet Shop Modification)

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Pallet Shop	0.77	0.44	0.44	-	-	-	-	-	-
Total	**0.77**	**0.44**	**0.44**	**-**	**-**	**-**	**-**	**-**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

16) Constructed in 2008 (Laundry Room Modification)

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Six (6) Space Heaters	8.57E-03	3.43E-02	3.43E-02	2.71E-03	4.51E-01	2.48E-02	3.79E-01	8.51E-03	544
Total	**0.01**	**0.03**	**0.03**	**2.71E-03**	**0.45**	**0.02**	**0.38**	**0.01**	**544**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

17) Constructed in 2008 (Horse Barn Modification)

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
One (1) Furnace	6.53E-04	2.61E-03	2.61E-03	2.06E-04	3.44E-02	1.89E-03	2.89E-02	6.48E-04	41
Total	**6.53E-04**	**2.61E-03**	**2.61E-03**	**2.06E-04**	**3.44E-02**	**1.89E-03**	**2.89E-02**	**6.48E-04**	**41**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

18) Constructed in 2008 (Park and Patio Shop Modification)

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Park and Patio Shop	0.18	0.11	0.11	-	-	-	-	-	-
Total	**0.18**	**0.11**	**0.11**	**-**	**-**	**-**	**-**	**-**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

19) Constructed in 2011

Emissions Units	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-
Total	**6.13**	**6.13**	**6.13**	**-**	**-**	**-**	**-**	**-**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**2.50**	**-**

Notes:

(1) In 2008, four (4) different modifications occurred in four different locations at the source.
The pallet shop was constructed in 2008 and has no effect on any operations outside the pallet shop. The six (6) laundry room space heaters where installed in 2008 and have no effect on any operation outside the laundry room. The one (1) horse barn furnace was installed in 2008 and has no effect on any operations outside the horse barn. The park and patio construction shop was also installed in 2008, but the park and patio shop is housed in a different building and outside of the work force, the shop has no effect on the rest of the operations at the source. These separate modifications are below the exemption level for a minor permit revision.

(2) The grizzly wood grinder constructed in 2011 required a Minor Permit Revision.

(3) All other emission units, installed without notification, are below the exemption level for a Minor Permit Revision

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Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
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Reviewer: Julie Alexander
Date: September 4, 2013

20) Emission units being incorporated as part of this permitting action

Emissions Units	Location	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Ten (10) laundry dryers	-	3.22E-02	1.29E-01	1.29E-01	1.02E-02	1.70	9.33E-02	1.42	3.20E-02	2,048
Three (3) laundry dryers	-	4.04E-03	1.62E-02	1.62E-02	1.28E-03	2.13E-01	1.17E-02	1.79E-01	4.01E-03	257
Rotisserie Oven	-	3.26E-03	1.31E-02	1.31E-02	1.03E-03	1.72E-01	9.45E-03	1.44E-01	3.24E-03	207
Carousel Oven	-	2.24E-03	8.97E-03	8.97E-03	7.09E-04	1.18E-01	6.49E-03	9.92E-02	2.23E-03	143
Griddles	-	2.64E-03	1.06E-02	1.06E-02	8.35E-04	1.39E-01	7.65E-03	1.17E-01	2.63E-03	168
Tilt Skillet	-	1.17E-03	4.70E-03	4.70E-03	3.71E-04	6.18E-02	3.40E-03	5.19E-02	1.17E-03	75
Range	-	8.97E-04	3.59E-03	3.59E-03	2.83E-04	4.72E-02	2.60E-03	3.97E-02	8.91E-04	57
Space Heater	Training Building Garage	1.22E-03	4.90E-03	4.90E-03	3.86E-04	6.44E-02	3.54E-03	5.41E-02	1.22E-03	78
Space Heaters	Outside Warehouse	5.26E-03	2.10E-02	2.10E-02	1.66E-03	2.77E-01	1.52E-02	2.33E-01	5.23E-03	334
Furnace	Exercise Room	1.43E-03	5.71E-03	5.71E-03	4.51E-04	7.51E-02	4.13E-03	6.31E-02	1.42E-03	91
Six (6) Space Heaters	Laundry Room	8.57E-03	3.43E-02	3.43E-02	2.71E-03	4.51E-01	2.48E-02	3.79E-01	8.51E-03	544
One (1) Furnace	Horse Barn	6.53E-04	2.61E-03	2.61E-03	2.06E-04	3.44E-02	1.89E-03	2.89E-02	6.48E-04	41
Fryer	Administrative Kitchen	1.44E-03	5.03E-03	5.03E-03	1.08E-02	9.33E-02	7.18E-03	5.39E-02	-	92
Grill	Administrative Kitchen	2.97E-03	1.04E-02	1.04E-02	2.23E-02	1.93E-01	1.48E-02	1.11E-01	-	190
Boiler	Training Building	5.19E-03	1.82E-02	1.82E-02	3.90E-02	3.38E-01	2.60E-02	1.95E-01	-	332
Furnace	Labor 2	9.81E-03	1.17E-02	1.04E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	3.37E-05	2
Space Heater	Compost & Recycling Building	2.39E-03	8.38E-03	8.38E-03	1.80E-02	1.56E-01	1.20E-02	8.98E-02	-	153
Generator 1	-	3.98E-02	3.98E-02	3.98E-02	3.71E-02	5.61E-01	4.55E-02	1.21E-01	4.91E-04	21
Generator 2	-	1.26E-03	2.57E-03	2.57E-03	7.79E-05	2.93E-01	3.92E-03	4.93E-01	4.26E-03	18
Generator 3	-	2.21E-01	2.21E-01	2.21E-01	2.06E-01	3.12	2.53E-01	6.72E-01	2.73E-03	116
Generator 4	-	2.21E-01	2.21E-01	2.21E-01	2.06E-01	3.12	2.53E-01	6.72E-01	2.73E-03	116
Generator 5	-	2.03E-01	2.03E-01	2.03E-01	1.89E-01	2.86	2.32E-01	6.16E-01	2.50E-03	106
Generator 6	-	2.95E-02	2.95E-02	2.95E-02	2.75E-02	4.16E-01	3.37E-02	8.96E-02	3.64E-04	15
Generator 7	-	5.90E-02	5.90E-02	5.90E-02	5.50E-02	8.31E-01	6.74E-02	1.79E-01	7.27E-04	31
Generator 8	-	2.21E-01	2.21E-01	2.21E-01	2.06E-01	3.12	2.53E-01	6.72E-01	2.73E-03	116
Generator 9	-	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	1.85E-03	195
Generators 10	-	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.82	1.47E-01	3.92E-01	1.59E-03	68
Generator 11	-	1.48E-01	1.48E-01	1.48E-01	1.37E-01	2.08	1.69E-01	4.48E-01	1.82E-03	77
Generator 12	-	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.82	1.47E-01	3.92E-01	1.59E-03	68
Welding operations	-	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	2.26E-03	-
Grinding and metal cutting operations	-	5.48E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter shop	-	0.49	0.49	0.49	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	-	6.58E-02	-	6.58E-04	-
Pallet Shop	-	0.77	0.44	0.44	-	-	-	-	-	-
Paint Shop	-	-	-	-	-	-	2.25	-	1.18	-
Park and Patio Shop	-	0.18	0.11	0.11	-	-	-	-	-	-
Total		**3.07**	**2.83**	**2.83**	**2.44**	**28.28**	**4.29**	**8.95**	**1.27**	**5,759**
Significant Permit Revisions Limits		**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**100.00**	**25.00**	**-**

21) Constructed and/or are operating without a permit

Emissions Units	Location	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Grizzly Wood Grinder	-	6.13	6.13	6.13	-	-	-	-	-	-
Total		**6.13**	**6.13**	**6.13**	**-**	**-**	**-**	**-**	**-**	**-**
Significant Permit Revisions Limits		**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**100.00**	**25.00**	**-**

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

23) Total PTE of Emission Units Added

Emissions Units	Location	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Ten (10) laundry dryers	-	0.03	0.13	0.13	0.01	1.70	0.09	1.42	0.03	2,048
Three (3) laundry dryers	-	4.04E-03	0.02	0.02	1.28E-03	0.21	0.01	0.18	4.01E-03	257
Rotisserie Oven	-	3.26E-03	0.01	0.01	1.03E-03	0.17	9.45E-03	0.14	3.24E-03	207
Carousel Oven	-	2.24E-03	8.97E-03	8.97E-03	7.09E-04	0.12	6.49E-03	0.10	2.23E-03	143
Griddles	-	2.64E-03	0.01	0.01	8.35E-04	0.14	7.65E-03	0.12	2.63E-03	168
Tilt Skillet	-	1.17E-03	4.70E-03	4.70E-03	3.71E-04	0.06	3.40E-03	0.05	1.17E-03	75
Range	-	8.97E-04	3.59E-03	3.59E-03	2.83E-04	0.05	2.60E-03	0.04	8.91E-04	57
Space Heater	Training Building Garage	1.22E-03	4.90E-03	4.90E-03	3.86E-04	0.06	3.54E-03	0.05	1.22E-03	78
Space Heaters	Outside Warehouse	5.26E-03	0.02	0.02	1.66E-03	0.28	0.02	0.23	5.23E-03	334
Furnace	Exercise Room	1.43E-03	5.71E-03	5.71E-03	4.51E-04	0.08	4.13E-03	0.06	1.42E-03	91
Grizzly Wood Grinder	-	6.13	6.13	6.13	-	-	-	-	-	-
Six (6) Space Heaters	Laundry Room	8.57E-03	0.03	0.03	2.71E-03	0.45	0.02	0.38	8.51E-03	544
One (1) Furnace	Horse Barn	6.53E-04	2.61E-03	2.61E-03	2.06E-04	0.03	1.89E-03	0.03	6.48E-04	41
Park and Patio Shop	-	0.18	0.11	0.11	-	-	-	-	-	-
Pallet Shop	-	0.77	0.44	0.44	-	-	-	-	-	-
Fryer	Administrative Kitchen	1.44E-03	5.03E-03	5.03E-03	0.01	0.09	7.18E-03	0.05	-	92
Grill	Administrative Kitchen	2.97E-03	0.01	0.01	0.02	0.19	0.01	0.11	-	190
Boiler	Training Building	5.19E-03	0.02	0.02	0.04	0.34	0.03	0.19	-	332
Furnace	Labor 2	9.81E-03	0.01	0.01	0.35	0.10	1.67E-03	0.02	3.37E-05	2
Space Heater	Compost & Recycling Building	2.39E-03	8.38E-03	8.38E-03	0.02	0.16	0.01	0.09	-	153
Generator 1	-	0.04	0.04	0.04	0.04	0.56	0.05	0.12	4.91E-04	21
Generator 2	-	1.26E-03	2.57E-03	2.57E-03	7.79E-05	0.29	3.92E-03	0.49	4.26E-03	18
Generator 3	-	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Generator 4	-	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Generator 5	-	0.20	0.20	0.20	0.19	2.86	0.23	0.62	2.50E-03	106
Generator 6	-	0.03	0.03	0.03	0.03	0.42	0.03	0.09	3.64E-04	15
Generator 7	-	0.06	0.06	0.06	0.05	0.83	0.07	0.18	7.27E-04	31
Generator 8	-	0.22	0.22	0.22	0.21	3.12	0.25	0.67	2.73E-03	116
Generator 9	-	0.12	0.07	0.07	0.68	4.02	0.12	0.92	1.85E-03	195
Generators 10	-	0.13	0.13	0.13	0.12	1.82	0.15	0.39	1.59E-03	68
Generator 11	-	0.15	0.15	0.15	0.14	2.08	0.17	0.45	1.82E-03	77
Generator 12	-	0.13	0.13	0.13	0.12	1.82	0.15	0.39	1.59E-03	68
Welding operations	-	0.02	0.02	0.02	-	-	-	-	2.26E-03	-
Grinding and metal cutting operations	-	5.48E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter shop	-	0.49	0.49	0.49	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	-	6.58E-02	-	6.58E-04	-
Paint Shop	-	-	-	-	-	-	2.25	-	1.18	-
	Total	9.20	8.97	8.96	2.44	28.28	4.29	8.95	1.27	5,759
	Significant Permit Revisions Limits	25	25	25	25	25	25	100	25	-

Emissions Calculations
Particulates and VOCs Emissions
From Paint Shop Surface Coating Operations

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Material		Weight % Volatile (H20 & Organics)	Density (Lb/Gal)	Weight % Water & Exempt Solvents	Weight % Organics	Volume % Water & Exempt Solvents	Volume % Non-Volatiles (solids)	Max Gal of Mat. (gal/hr)	Pounds VOC per gallon of coating less water & exempt solvents	Pounds VOC per gallon of coating	VOC Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Paint Shop	7-809	39.58%	7.80	0.0%	39.58%	0.0%	52.49%	0.17	3.09	3.09	2.25	0.00	5.88	100%
										State Potential Emissions (tons/yr)	**2.25**	**0.00**		

NOTES
The source provided that the maximum gallons of paint used per day is 1 gallon per day. The paint shop operates 6 hours, so the max gal of material per hour is 0.17 gal/hr.
The paint composition is from the paint with the highest VOC content, Product 7-809.
Transfer efficiency for the paint shop is 100%, based on the transfer efficiency of brush coating.
PM10 & PM2.5 emissions are each assumed equal to PM emissions
Note: The paint shop involves manual brush painting of the facility. Therefore, 326 IAC 6-3-2 particulate limitations do not apply.

METHODOLOGY

Paint Shop
Weight % Volatile (H20 & Organics) = 100% - Weight % Solids
Weight % Water & Exempt Solvents = Weight % Volatile (H20 & Organics) - Weight % Organics
Weight % Organics taken directly from MSDSs supplied by the source. Note that the maximum range % for all organics on the MSDS adds up to greater than 39.58%, so 39.58% was assumed.
Volume % Water & Exempt Solvents = 0.0% (from MSDS)
Volume % Non-Volatiles (solids) = 100% - Volume % Volatiles from the MSDS
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
VOC Potential (tons/yr) = Pounds of VOC per Gallon coating (lb/gal) * Max Gal of Material (gal/yr) * (1 ton/2000 lbs)
Particulate Potential (tons/yr) = (gal/yr) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Emissions Calculations
Hazardous Air Pollutant (HAP) Emissions
From Paint Shop Surface Coating Operations

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Material	Max Gal of Material (gal/hr)	Weight % Xylene	Weight % Cobalt Compounds	Weight % Ethylbenzene	Weight % Glycol Ethers	Xylene Emissions (tons/yr)	Cobalt Emissions (tons/yr)	Ethylbenzene Emissions (tons/yr)	Glycol Ether Emissions (tons/yr)
Paint Shop- See Coatings Below	0.167	5.00%	2.00%	1.00%	10.00%	0.28	0.11	0.06	0.73
				Potential Emissions (tons/yr)	**Single HAP**	**0.28**	**0.11**	**0.06**	**0.73**
					Combined HAPs	**1.183**			

NOTES

Single HAP emissions represent a worst-case composite of the coatings for each coating used at this source. Emissions were calculated for each single HAP using the density and weight % of the worst-case coating for that HAP.

METHODOLOGY

Single HAPS emission rate (tons/yr) = Density of worst-case coating (lb/gal) x Max Gal of Material (gal/hr) x Weight % HAP of worst-case coating x 8,760 hrs/yr x 1 ton/2000 lbs

Worst Case HAPs (from MSDS)

HAP	Coating	Content (%)	Density (lbs/gal)
Xylene	7-809	5%	7.80
Cobalt Compounds	7-809	2%	7.80
Ethylbenzene	7-809	1%	7.80
Glycol Ethers	90-374	10%	9.96

Emissions Calculations
VOCs, HAPs, and Particulates
From Parts Washers

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Location	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Max Gal of Mat. (gal/yr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Vehicle Maintenance	Zep Dyna 143	6.58	100.00%	0.0%	100.0%	0.0%	0.00%	20.00	6.58	6.58	0.07	0.00	-	100%
Auto Maintenance Education	Zep Dyna 143	6.58	100.00%	0.0%	100.0%	0.0%	0.00%	20.00	6.58	6.58	0.07	0.00	-	100%
Labor 2	Zep Dyna 143	6.58	100.00%	0.0%	100.0%	0.0%	0.00%	30.00	6.58	6.58	0.10	0.00	-	100%
									Potential Emissions (tons/yr)		**0.23**	**0.00**		

*Note: The maximum gallons of material is based on the gallons of each solvent tank, assuming that each solvent tank is changed out once per year.

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Max Gal of Material (gal/yr) * (1 ton/2000 lbs)
PM10 and PM2.5 emissions are assumed equal to PM emissions.
PM/PM10 Potential Tons per Year = (gal/yr) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

HAP Emission Calculations

Location	Material	Density (Lb/Gal)	Max Gal of Material (gal/yr)	Weight % Xylene	Xylene Emissions (ton/yr)
Vehicle Maintenance	Zep Dyna 143	6.58	20.00	1.00%	6.58E-04
Auto Maintenance Education	Zep Dyna 143	6.58	20.00	1.00%	6.58E-04
Labor 2	Zep Dyna 143	6.96	30.00	1.00%	1.04E-03
				Potential Emissions (tons/yr)	**2.36E-03**

NOTE

The Zep Dyna 143 consists of light aliphatic naptha (CAS 64742-88-7), aka Mineral Spirits, which contains 1% xylenes. Reference: Table 1. Default Organic HAP Mass Fraction for Solvents and Solvent Blends (Source: 40 CFR 63).
HAPS emission rate (tons/yr) = Density (lb/gal) * Max Gal of Material (gal/yr) * Weight % HAP * 1 ton/2000 lbs

Appendix A: Emissions Calculations

Pallet Shop and Park & Patio Construction Wood Cutting Operations

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP No.: M 133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

		Uncontrolled Emission Factor (lb/ton)		Uncontrolled Emissions (lbs/hr)		Uncontrolled PTE (tons/yr)		Control Efficiency %	Controlled Emissions (lbs/hr)		Controlled PTE (tons/yr)**	
Process	Maximum Throughput (lbs/hr)	PM	PM10/ PM2.5*	PM	PM10/ PM2.5*	PM	PM10/ PM2.5*		PM	PM10/PM2.5*	PM	PM10/ PM2.5*
Pallet Shop	10000	0.35	0.20	1.75	1.00	7.67	4.38	0.90	0.18	0.10	0.77	0.44
Park & Patio Construction	240	0.35	0.20	0.04	0.02	0.18	0.11	0.00	N/A	N/A	N/A	N/A

Compliance with 326 IAC 6-3-2:

Allowable Emissions, E = 4.10 * P^0.67 (for weight rates up to 60,000 lb/hr)
where E = emissions in lbs/hr
P = process weight in tons/hr

Pallet Shop:	P =	10000	lbs/hr
	=	5.00	tons/hr
Allowable PM Emissions,	E =	12.05	lbs/hr
Park & Patio Construction	P =	240	lbs/hr
	=	0.12	tons/hr
Allowable PM Emissions,	E =	0.99	lbs/hr

Methodology

*PM2.5 emissions assumed equal to PM10 emissions.

Emission Factors are from AIRS Facility Subsystem Source Classification Codes and Emission Factor Listing for Criteria Air Pollutants EPA March 1990 for Sawmill Operations (Log Sawing: General) (SCC 3-07-008-02)

Uncontrolled Potential Emissions (lbs/hr) = [Maximum Throughput (lbs/hr)] * [ton/2,000 lbs] * [Uncontrolled Emission Factor (lbs/ton)]

Uncontrolled Potential Emissions (tons/yr) = [Uncontrolled Potential Emissions (lbs/hr)] * [8,760 hrs/yr] * [ton/2,000 lbs]

**In October 1993 a Final Order Granting Summary Judgment was signed by Administrative Law Judge (“ALJ”) Garrettson resolving an appeal filed by Kimball Hospitality Furniture Inc. (Cause Nos. 92-A-J-730 and 92-A-J-833) related to the method by which IDEM calculated potential emissions from woodworking operations. In his findings, the ALJ determined that particulate controls are necessary for the facility to produce its normal product and are integral to the normal operation of the facility, and therefore, potential emissions should be calculated after controls. Based on this ruling, potential emissions for particulate matter were calculated after consideration of the dust collector and baghouse controls for determining operating permit level purposes and 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) applicability

Emission Calculations for
Carpenter Shop
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Information Provided by the Source		
Amount collected: 1 lb	1	lb
Hours collected: 1 hour	1	hr
Baghouse Control Eff (estimated	90%	

Uncontrolled PM/PM10/PM2.5 emissions = Amount of dust collected (lbs/collection) x (1 collection/No. of hours of operation) / Control Efficiency
= 1.1 pounds per hour (lb/hr)

Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr) = Uncontrolled PM/PM10/PM2.5 Emissions (lb/hr) x 8760 hr/yr x 1 ton/2,000 lbs
= 4.87 tons/yr

Controlled PM/PM10/PM2.5 Emissions (tons/yr) = Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr) x (1-Control Efficiency)
= 0.49 tons/yr

Emissions Calculations
Grinding Operations
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

			Particulates				HAPs	
Process:	**Max Throughput Rate***		**Emission Factor ****		**Potential to Emit**		**Lead Content (%) *****	**PTE of Lead (tons/year)**
	(lbs/hr)	**(tons iron/hr)**	**PM (lbs/ton)**	**PM10/PM2.5 (lbs/ton)**	**PM (tons/yr)**	**$PM_{10}/PM_{2.5}$ (tons/yr)**		
3 Grinders	2.50	0.00125	0.01	0.0045	5.48E-05	2.46E-05	7.70%	4.22E-06
1 Metal Saw	0.17	0.00008	0.01	0.0045	4.38E-04	1.64E-06	7.70%	3.37E-05
		Total			**5.48E-05**	**2.46E-05**		**4.22E-06**

*The maximum metal throughput is based on 3 grinders grinding a maximum of 5 lbs/day and 1 metal saw cutting a maximum of 1 lb/day, with a work shift of 6 hours per day.

** Emission factors are from FIRE Volume II, Chapter 14, Grey Iron Foundries - SCC 3-04-003-60 (July, 2001)

*** Lead Emission are based on the lab test conducted by Precision Process Division in Walkerton, Indiana
In the absence of valid PM2.5 Emission Factors, it is assumed that PM2.5 emissions = PM10 emissions.

Methodology

PTE PM/PM-10 (tons/year) = Max. Thorughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs

PTE Lead (tons/year) = Max. Throughput Rate (tons/hour) * PM Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs * Lead Content (%)

Emissions Calculations
Particulate Emissions from the
Biomass (Wood) and Ash Handling Operations
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

	Biomass (Wood) Unloading/Receiving	Biomass (Wood) Headhouse and Internal Handling (legs, belts, distributor, etc)	Ash Internal Handling (auger, container)	Biomass (Wood) Storage Bin (vent)
Throughput (tons/hr)	9.0	2.81	0.02	4.13

Unloading/Receiving								
Straight Truck			Hopper Truck			Railcar		
PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
0.18	0.059	0.01	0.035	0.0078	0.0013	0.032	0.0078	0.0013

Worst-case Emission Factors Representing this source =	PM =	0.18	PM_{10} =	0.059	$PM_{2.5}$ =	0.01

	Biomass (Wood) Unloading/Receiving			Biomass (Wood) Storage bin (vent)			Ash Internal Handling (auger, container)			Biomass (Wood) Headhouse and Internal Handling (legs/belts, distributor, etc)		
	PM	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/ton)	0.18	0.059	0.01	0.025	0.0063	0.0011	2.2	2.2	2.2	0.061	0.034	0.0058
Potential Emissions (tons/yr)	7.10	2.33	0.39	0.45	0.11	0.02	0.16	0.16	0.16	0.75	0.42	0.07
				Baghouse						**Baghouse**		
Controls (overall % efficiency)	0.00%	0.00%	0.00%	95.00%	95.00%	95.00%	0.00%	0.00%	0.00%	95.00%	95.00%	95.00%
Controlled Potential Emissions (tons/yr)	7.10	2.33	0.39	0.02	0.01	9.94E-04	0.16	0.16	0.16	0.04	0.02	3.57E-03

	PM	PM10	PM2.5
Total Uncontrolled Emissions (tons/yr)	**8.46**	**3.02**	**0.65**
Total Controlled Emissions (tons/yr)	**7.32**	**2.52**	**0.56**

Methodology
Emission factors are from AP-42 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators (Supplement D, 5/98)
Potential Emissions (tons/yr) = Throughput (tons/hr) x Emission Factor (lbs/ton) x (8,760 hrs/yr) / (2000 lbs/ton)
Controlled Potential Emissions (tons/yr) = Potential Emissions (tons/yr) * (1-Control Efficiency)

Emissions Calculations
Particulate Emissions from
Grizzly Wood Grinder

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Maximum Raw Wood Capacity (tons/hr)	PM/ PM10/ PM2.5 Emission Factor (lb/ton)	PM/ PM10/ PM2.5 Uncontrolled Emissions (lb/hr)	PM/ PM10/ PM2.5 Uncontrolled Emissions (tons/yr)
4.00	0.350	1.4	6.13

Methodology
The grinder capacity is 4 tons per hour based on information provided by Putnamville.
Emission Factor is from AP-42 Table 10.3-1 Fourth Edition
Uncontrolled emissions (tons/yr) = Maximum Raw Wood Capacity (lbs/hr) / 1 ton/2000 lbs * Emission Factor (lb/ton) * 8760 (hr/yr) / 1 ton/2000 lbs
*Note: The engine powering the wood grinder is electric.

Emissions Calculations
Particulate and Hazardous Air Pollutant Emissions (HAPs)
from the Welding and Thermal Cutting
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)		HAPS (lbs/hr)
WELDING				$PM/PM_{10}/PM_{2.5}$	Mn	Ni	Cr	$PM/PM_{10}/PM_{2.5}$	Mn	
Metal Inert Gas (MIG)(carbon steel)	3	0.33		0.0055	0.0005	-	-	5.50E-03	5.00E-04	5.00E-04
Tungsten Inert Gas (TIG)(carbon steel)	2	0.017		0.0055	0.0005	-	-	1.83E-04	1.67E-05	1.67E-05

	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./hr)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)		HAPS (lbs/hr)
FLAME CUTTING				$PM/PM_{10}/PM_{2.5}$	Mn	Ni	Cr	$PM/PM_{10}/PM_{2.5}$	Mn	
Plasma**	1	1	4.0	0.0039	-	-	-	1.56E-05	-	-

EMISSION TOTALS

Potential Emissions lbs/hr	5.70E-03	5.17E-04	5.17E-04
Potential Emissions lbs/day	1.37E-01	1.24E-02	1.24E-02
Potential Emissions tons/year	2.50E-02	2.26E-03	2.26E-03

Notes:

There are 3 MIG welding stations, 2 TIG welding stations, and 1 plasma cutting torch in the Fabrication Shop. The MIG welding stations cut a maximum of 0.33 lbs/hr and the TIG welding stations cut a maximum of 0.017 lbs/hr. The plasma cutter cuts a maximum of 0.17 lbs/hr of steel (0.60 in^3/hr). The metal sizes vary, so it's estimated that the minimum thickness is 8 mm (0.3 inches), the maximum thickness is 1 inch, and the minimum width is 0.5 inch.

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculting the emissions.

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

PM=PM10=PM2.5

Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

ID	Location	kW	hp
Generator 9	Power House	500	670.5

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	670.5
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	335,250

Maximum Diesel Fuel Usage (gal/yr)	17,126
Sulfur Content (S) of Fuel (% by weight)	0.50

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-03	2.40E-02	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.12	0.07	0.07	0.68	4.02	0.12	0.92

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).
**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr
Maximum Diesel Fuel Usage (gal/yr) = [Potential Throughput (hp-hr/yr) * (average brake specific fuel consumption of 7,000 Btu / hp-hr) * 1/(diesel heating value of 19,300 Btu/lb) * 1/(diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1))]

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	9.11E-04	3.30E-04	2.26E-04	9.26E-05	2.96E-05	9.25E-06	2.49E-04

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**1.85E-03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16E+00	6.35E-05	9.30E-06
Potential Emission in tons/yr	1.94E+02	1.06E-02	1.56E-03

Summed Potential Emissions in tons/yr	**194.46**
CO2e Total in tons/yr	**195.15**

Methodology
Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Potential NOx Emissions = (335,250 hp-hr/yr) * (2.40 E-02 lb/hp-hr) / (2,000 lbs/ton) = 4.02 tons/yr
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).

Emission Calculations
Fugitive Dust Emissions - Paved Roads
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Paved Roads

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Tractor Trailers (entering facility) (one-way tri	3.0	1.0	3.0	30.0	90.0	2600	0.492	1.5	539.2
Tractor Trailers (leaving facility) (one-way trip	3.0	1.0	3.0	30.0	90.0	2600	0.492	1.5	539.2
		Totals	**6.0**		**180.0**			**3.0**	**1078.4**

Average Vehicle Weight Per Trip =	30.0	tons/trip
Average Miles Per Trip =	0.49	miles/trip

The following calculations determine the amount of emissions created by paved roads, based on AP-42, Ch 13.2.1 (1/2011)

Parameter		PM	PM10	PM2.5	Source/Method
Ef =	particulate emission factor (lb/VMT)	2.79	0.56	0.14	= k*(sL^0.91)*(W^1.02), Ch. 13.2.1, eqn
k =	particle size multiplier (lb/VMT)	1.10E-02	2.20E-03	5.40E-04	Table 13.2.1-1
sL =	road surface silt loading (g/m2)	9.70	9.70	9.70	See Table 13.2.1-3 or 13.2.1-2
W =	average weight of vehicles traveling the road (tons)	30.00	30.00	30.00	Provided by the source
VMT/yr =	vehicle miles traveled per year	1078.41	1078.41	1078.41	Provided by the source
PTE =	Potential to Emit (ton/yr)	1.51	0.30	0.07	= Ef (lb/VMT) x VMT/yr x (1 ton/2000 lb)

Taking natural mitigation due to precipitation into consideration:

Parameter		PM	PM10	PM2.5	Source/Method
Eext =	particulate emission factor extrapolated for natural mitigation (lb/VMT)	2.55	0.51	0.13	= Ef*[1 - (P/4N)], Ch. 13.2.1, eqn (2)
P =	number of days in a year with at least 0.01 in of precipitation	125	125	125	Based on Figure 13.2.1-2
N =	number of days in a year	365	365	365	
PTE =	Potential to Emit (ton/yr)	1.38	0.28	0.07	= Eext (lb/VMT) x VMT/yr x (1 ton/2000

Criteria Pollutant and Hazardous Air Pollutant Emissions From Fuel Combustion with Maximum Capacity < 100 MMBtu/hr for Boilers #1 and #2

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Heat Input Capacity =	84.09	MMBtu/hr
Potential Throughput =	722.18	MMCF/yr

Location	Unit	MMBtu/hr
Power House	Boiler 1	42.00
Power House	Boiler 2	42.00
Power House	Boiler 1 Burner	0.045
Power House	Boiler 2 Burner	0.045
	Total	**84.09**

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.69	2.74	2.74	0.22	36.11	1.99	30.33

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

PM2.5 emission factor is filterable and condensable PM2.5 combined.

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

<u>HAPS Calculations</u>

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	7.58E-04	4.33E-04	2.71E-02	6.50E-01	1.23E-03	6.79E-01

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.81E-04	3.97E-04	5.06E-04	1.37E-04	7.58E-04	1.98E-03
					Total HAPs	**6.81E-01**
					Worst HAP	**6.50E-01**

The five highest organic and metal HAPs emission factors are provided above.

<u>Greenhouse Gas Calculations</u>

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	43,331	1	1
Summed Potential Emissions in tons/yr	43,332		
CO2e Total in tons/yr	43,595		

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu

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

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.

Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

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

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Criteria Pollutant and Hazardous Air Pollutant Emissions From
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
for Wood-fired Boiler #3
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

The following calculations determine the uncontrolled and controlled emissions created from the combustion of Dry Wood and Wet Wood in Boiler #3.

Maximum Fuel Input Rate =	14.33	MMBtu/hr	HHV =	15.38	MMBtu/ton
Dry Wood Usage =	8,162	tons/yr			
Wet Wood Usage =	8,162	tons/yr			

Unlimited/Uncontrolled Emissions

	Uncontrolled PTE					Controlled PTE[1]				
Criteria Pollutant	Dry Wood Emission Factor (lb/MMBtu)	Wet wood Emission Factor (lb/MMBtu)	Dry Wood PTE (tons/yr)	Wet Wood PTE (tons/yr)	**Worse Case Fuel (tons/yr)**	Dry Wood Emission Factor (lb/MMBtu)	Wet wood Emission Factor (lb/MMBtu)	Dry Wood PTE (tons/yr)	Wet Wood PTE (tons/yr)	**Worse Case Fuel (tons/yr)**
PM	0.40	0.33	25.11	20.71	**25.11**	0.30	0.22	18.83	13.81	**18.83**
PM10	0.36	0.29	22.60	18.20	**22.60**	0.27	0.2	16.95	12.55	**16.95**
PM2.5	0.31	0.25	19.46	15.69	**19.46**	0.16	0.12	10.04	7.53	**10.04**
CPM[2]	0.017	0.017	1.07	1.07	**1.07**	0.017	0.017	1.07	1.07	**1.07**
SO2	0.025	0.025	1.57	1.57	**1.57**	0.025	0.025	1.57	1.57	**1.57**
NOx	0.49	0.22	30.76	13.81	**30.76**	0.49	0.22	30.76	13.81	**30.76**
VOC	0.017	0.017	1.07	1.07	**1.07**	0.017	0.017	1.07	1.07	**1.07**
CO **	0.60	0.60	37.66	37.66	**37.66**	0.60	0.60	37.66	37.66	**37.66**

Hazardous Air Pollutant					
Criteria Pollutant	Dry Wood (lb/MMBtu)	Wet wood (lb/MMBtu)	Dry Wood (tons/yr)	Wet wood (tons/yr)	**Worse Case Fuel (tons/yr)**
Acetaldehyde	8.3E-04	8.30E-04	5.2E-02	5.95E-09	**5.2E-02**
Acrolein	4.0E-03	4.00E-03	2.5E-01	2.87E-08	**0.25**
Benzene	4.2E-03	4.20E-03	2.6E-01	3.01E-08	**0.26**
Formaldehyde	4.4E-03	4.40E-03	2.8E-01	3.15E-08	**0.28**
HCL	1.9E-02	1.90E-02	1.2E+00	1.36E-07	**1.19**
Styrene	1.9E-03	1.90E-03	1.2E-01	1.36E-08	**0.12**
Toluene	9.2E-04	9.20E-04	5.8E-02	6.59E-09	**5.8E-02**
		Total HAPs =	**2.212**	**2.53E-07**	**2.212**
		Worst Single HAP =	**1.193 (HCl)**	**1.36E-07**	**1.193 (HCl)**

Greenhouse Gases			
	CO2	CH4	N2O
Emission Factor in kg/mmBtu from 40 CFR 98	93.8	0.03	
Emission Factor in lb/mmBtu from AP-42			0.013
Potential Emission in tons/yr	12979.5	4.4	0.8
Summed Potential Emissions in tons/yr	12,985		
CO2e Total in tons/yr	13,325		

Methodology

MMBtu = 1,000,000 Btu

HHV = Higher Heating Value of wood fuel (MMBtu/ton). Fuel Heating Values from 40 CFR Part 98 Subpart C, Tables C-1 and 2.

(1) Emission Factors are from AP-42 Chapter 1.6 (revised 9/03). Controlled factors are for a mechanical collector such as a multiclone. AP-42 states that a control efficiency of 25 to 65 percent can be expected for the use of two multiclones in series. However, the DOC wood-fired boiler has only a single multiclone.

(2) CPM = Condensible Particulate Matter = PM captured and measured in an EPA Method 202 (or equivalent) sampling train.

Wet wood is considered to be greater than or equal to 20% moisture content. Dry wood is considered to be less than 20% moisture content.

**The CO emission factor is for stokers and dutch ovens/fuel cells. Change the emission factor to 0.17 lb/MMBtu if the calculations are for a fluidized bed combustor.

To convert from Maximum Fuel Input Rate (MMBtu/hr) to Maximum Wood Usage (tons/hr):

Equivalent Material Usage (tons/yr) = Maximum Fuel Input Rate (MMBtu/hr) * 1/Higher Heating Value (HHV) of wood fuel (MMBtu/ton) * 8760 hrs/yr

Uncontrolled Emissions (tons/yr) = Maximum Fuel Input Rate (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760hrs/yr x 1ton/2000lbs

Uncontrolled NOx Emissions = (14.33 MMBtu/hr) x (0.49 lb/MMBtu) x (8760 hrs/yr) / (2000 lbs/ton) = 30.76 tons/yr

To convert from tons/hr capacity to MMBtu/hr capacity:

Heat Input Capacity (MMBtu/hr) = Capacity (tons/hr) x Higher Heating Value of wood fuel (Btu/lb) x (1 MMBtu/10^6 Btu/) x 2000 lbs/1 ton

CO2 and CH4 Emission Factors from Tables C-1 and 2 of 40 CFR Part 98 Subpart C. N2O emission factor from AP-43 Chapter 1.6 (revised 3/02).

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (kg/mmBtu) x 2.20462 lb/kg x 8760 hrs/yr /2,000 lb/ton

Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (lb/mmBtu) x 8760 hrs/yr /2,000 lb/ton

CO2e (tons/yr) = CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).**

On July 12, 2013, the United States Court of Appeals for the District of Columbia Circuit vacated the EPA's 2011 biogenic Deferral Rule, which had deferred regulation of biogenic carbon dioxide (CO2) emissions for three years. Therefore, CO2 emissions have been included in the Greenhouse Gases emisssions calculations.

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Natural Gas-Fired Combustion Equipment
MMBtu/hr <100

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

				Pollutant						
			Emission Factor in lb/MMCF	**PM***	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
				1.9	7.6	7.6	0.6	100.0	5.5	84.0
								**see below		
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr							
Laundry	6 Space Heaters	1.05	9.02	8.57E-03	3.43E-02	3.43E-02	2.71E-03	4.51E-01	2.48E-02	3.79E-01
Laundry	10 Laundry Dryers	3.95	33.92	3.22E-02	1.29E-01	1.29E-01	1.02E-02	1.70E+00	9.33E-02	1.42E+00
Laundry	3 Laundry Dryers	0.50	4.25	4.04E-03	1.62E-02	1.62E-02	1.28E-03	2.13E-01	1.17E-02	1.79E-01
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	3.26E-03	1.31E-02	1.31E-02	1.03E-03	1.72E-01	9.45E-03	1.44E-01
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	2.24E-03	8.97E-03	8.97E-03	7.09E-04	1.18E-01	6.49E-03	9.92E-02
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	2.64E-03	1.06E-02	1.06E-02	8.35E-04	1.39E-01	7.65E-03	1.17E-01
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	1.17E-03	4.70E-03	4.70E-03	3.71E-04	6.18E-02	3.40E-03	5.19E-02
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	8.97E-04	3.59E-03	3.59E-03	2.83E-04	4.72E-02	2.60E-03	3.97E-02
Training Building Garage	1 Space Heater	0.15	1.29	1.22E-03	4.90E-03	4.90E-03	3.86E-04	6.44E-02	3.54E-03	5.41E-02
Outside Warehouse	15 Space Heaters	0.65	5.54	5.26E-03	2.10E-02	2.10E-02	1.66E-03	2.77E-01	1.52E-02	2.33E-01
Exercise Room	1 Luxaire Furnace	0.18	1.50	1.43E-03	5.71E-03	5.71E-03	4.51E-04	7.51E-02	4.13E-03	6.31E-02
Horse Barn	1 Dayton Furnace	0.08	0.69	6.53E-04	2.61E-03	2.61E-03	2.06E-04	3.44E-02	1.89E-03	2.89E-02
	Potential Emission in tons/yr	7.80	66.97	0.06	0.25	0.25	0.02	3.35	0.18	2.81

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

				HAPs - Organics					
			Emission Factor in lb/MMcf	**Benzene**	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**	**Total - Organics**
				2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr						
Laundry	6 Space Heaters	1.05	9.02	9.47E-06	5.41E-06	3.38E-04	8.12E-03	1.53E-05	8.48E-03
Laundry	10 Laundry Dryers	3.95	33.92	3.56E-05	2.04E-05	1.27E-03	3.05E-02	5.77E-05	3.19E-02
Laundry	3 Laundry Dryers	0.50	4.25	4.46E-06	2.55E-06	1.59E-04	3.83E-03	7.23E-06	4.00E-03
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	3.61E-06	2.06E-06	1.29E-04	3.09E-03	5.84E-06	3.23E-03
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	2.48E-06	1.42E-06	8.86E-05	2.13E-03	4.02E-06	2.22E-03
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	2.92E-06	1.67E-06	1.04E-04	2.50E-03	4.73E-06	2.62E-03
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	1.30E-06	7.42E-07	4.64E-05	1.11E-03	2.10E-06	1.16E-03
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	9.92E-07	5.67E-07	3.54E-05	8.50E-04	1.61E-06	8.89E-04
Training Building Garage	1 Space Heater	0.15	1.29	1.35E-06	7.73E-07	4.83E-05	1.16E-03	2.19E-06	1.21E-03
Outside Warehouse	15 Space Heaters	0.65	5.54	5.82E-06	3.32E-06	2.08E-04	4.99E-03	9.42E-06	5.21E-03
Exercise Room	1 Luxaire Furnace	0.18	1.50	1.58E-06	9.02E-07	5.64E-05	1.35E-03	2.56E-06	1.41E-03
Horse Barn	1 Dayton Furnace	0.08	0.69	7.21E-07	4.12E-07	2.58E-05	6.18E-04	1.17E-06	6.46E-04
	Potential Emission in tons/yr	7.80	66.97	7.03E-05	4.02E-05	2.51E-03	6.03E-02	1.14E-04	**6.301E-02**

					HAPs - Metals				
			Emission Factor in lb/MMcf	**Lead**	**Cadmium**	**Chromium**	**Manganese**	**Nickel**	**Total - Metals**
				5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr						
Laundry	6 Space Heaters	1.05	9.02	2.25E-06	4.96E-06	6.31E-06	1.71E-06	9.47E-06	2.47E-05
Laundry	10 Laundry Dryers	3.95	33.92	8.48E-06	1.87E-05	2.37E-05	6.45E-06	3.56E-05	9.30E-05
Laundry	3 Laundry Dryers	0.50	4.25	1.06E-06	2.34E-06	2.98E-06	8.08E-07	4.46E-06	1.16E-05
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	8.59E-07	1.89E-06	2.40E-06	6.53E-07	3.61E-06	9.41E-06
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	5.90E-07	1.30E-06	1.65E-06	4.49E-07	2.48E-06	6.47E-06
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	6.96E-07	1.53E-06	1.95E-06	5.29E-07	2.92E-06	7.62E-06
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	3.09E-07	6.80E-07	8.66E-07	2.35E-07	1.30E-06	3.39E-06
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	2.36E-07	5.20E-07	6.61E-07	1.79E-07	9.92E-07	2.59E-06
Training Building Garage	1 Space Heater	0.15	1.29	3.22E-07	7.09E-07	9.02E-07	2.45E-07	1.35E-06	3.53E-06
Outside Warehouse	15 Space Heaters	0.65	5.54	1.38E-06	3.05E-06	3.88E-06	1.05E-06	5.82E-06	1.52E-05
Exercise Room	1 Luxaire Furnace	0.18	1.50	3.76E-07	8.27E-07	1.05E-06	2.86E-07	1.58E-06	4.12E-06
Horse Barn	1 Dayton Furnace	0.08	0.69	1.72E-07	3.78E-07	4.81E-07	1.31E-07	7.21E-07	1.88E-06
	Potential Emission in tons/yr	7.80	66.97	1.67E-05	3.68E-05	4.69E-05	1.27E-05	7.03E-05	**1.84E-04**

The five highest organic and metal HAPs emission factors are provided above.

Total HAPs	**6.32E-02**
Worst HAP	**6.03E-02**

			Greenhouse Gas					
			Emission Factor in lb/MMCF	CO2	CH4	N2O	Potential Emissions in tons/yr	CO2e Total in tons/yr
				120,000	2.3	2.2		
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr					
Laundry	6 Space Heaters	1.05	9.02	541	1.04E-02	9.92E-03	5.41E+02	544
Laundry	10 Laundry Dryers	3.95	33.92	2,035	3.90E-02	3.73E-02	2.04E+03	2,048
Laundry	3 Laundry Dryers	0.50	4.25	255	4.89E-03	4.68E-03	2.55E+02	257
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	206	3.95E-03	3.78E-03	2.06E+02	207
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	142	2.72E-03	2.60E-03	1.42E+02	143
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	167	3.20E-03	3.06E-03	1.67E+02	168
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	74	1.42E-03	1.36E-03	7.42E+01	75
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	57	1.09E-03	1.04E-03	5.67E+01	57
Training Building Garage	1 Space Heater	0.15	1.29	77	1.48E-03	1.42E-03	7.73E+01	78
Outside Warehouse	15 Space Heaters	0.65	5.54	332	6.37E-03	6.09E-03	3.32E+02	334
Exercise Room	1 Luxaire Furnace	0.18	1.50	90	1.73E-03	1.65E-03	9.02E+01	91
Horse Barn	1 Dayton Furnace	0.08	0.69	41	7.90E-04	7.56E-04	4.12E+01	41
	Potential Emission in tons/yr	7.80	66.97	4018.26	0.08	0.07	4,018	4,043

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Potential NOx Emissions = (68.31 MMCF/yr) * (100 lbs/MMCF) / (2000 tons/yr) = 3.42 tons/yr
CO2 eq (tons/yr) = (CO2 eq factor) x Emissions (tons/yr)

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Propane-Fired Combustion Equipment
MMBtu/hr <100

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

SO2 Emission factor = 0.10 x S
S = Sulfur Content = 15.00 grains/100ft^3

				Pollutant						
			Emission Factor in lb/kgal	**PM***	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
				0.2	0.7	0.7	1.50	13.0	1.0	7.5
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput kgal/yr							
Admin Kitchen	1 Pitco Frialater	0.150	14.36	1.44E-03	5.03E-03	5.03E-03	1.08E-02	9.33E-02	7.18E-03	5.39E-02
Admin Kitchen	1 Garland Grill	0.310	29.68	2.97E-03	1.04E-02	1.04E-02	2.23E-02	1.93E-01	1.48E-02	1.11E-01
Training Building	1 Weil McLain boiler	0.5426	51.95	5.19E-03	1.82E-02	1.82E-02	3.90E-02	3.38E-01	2.60E-02	1.95E-01
Compost & Recycling Building	1 Space Heater	0.250	23.93	2.39E-03	8.38E-03	8.38E-03	1.80E-02	1.56E-01	1.20E-02	8.98E-02
	Potential Emission in tons/yr	1.253	119.92	0.01	0.04	0.04	0.09	0.78	0.06	0.45

*PM emission factor is filterable PM only. PM emissions are stated to be all less than 10 microns in aerodynamic equivalent diameter, footnote in Table 1.5-1, therefore PM10 is based on the filterable and condensable PM emission

** No direct PM2.5 emission factor was given. Direct PM2.5 is a subset of PM10. If one assumes all PM10 to be all direct PM2.5, then a worst case assumption of direct PM2.5 can be made.

**The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

Greenhouse Gas

			Emission Factor in lb/kgal	CO2	CH4	N2O	Summed Potential Emissions in	CO2e Total in tons/yr
				12,500	0.2	0.9		
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput kgal/yr					
Admin Kitchen	1 Pitco Frialater	0.150	14.36	90	1.44E-03	6.46E-03	90	92
Admin Kitchen	1 Garland Grill	0.310	29.68	185	2.97E-03	1.34E-02	186	190
Training Building	1 Weil McLain boiler	0.5426	51.95	325	5.19E-03	2.34E-02	325	332
Compost & Recycling Building	1 Space Heater	0.250	23.93	150	2.39E-03	1.08E-02	150	153
	Potential Emission in tons/yr	1.253	119.92	750	1.20E-02	5.40E-02	750	766

Methodology
For propane, heat content = 91.5x10^6 Btu/10^3 gallon; Source: AP-42 Chapter 1.5
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0905 MMBtu
Emission Factors are from AP-42 Chapter 1.5, Table 1.5-1.
Potential Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton
Potential NOx Emissions = (121.25 kgal/yr) * (13.0 lbs/kgal) / (2000 lbs/ton) = 0.79 tons/yr
CO2 eq (tons/yr) = (CO2 eq factor) x Emissions (tons/yr)

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Diesel-Fired Combustion Equipment
MMBtu/hr <100
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

Location	Equipment Name	gal/hr
Labor 2	1 Diesel Furnace @ 1.12 gal/hr	1.120
	Total	1.120

Potential Throughput gal/hr	Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
1.120	0.1568	9.8112	0.5

	Pollutant						
	PM*	PM10*	PM2.5**	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.0	2.4	2.1	71 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	9.81E-03	1.17E-02	1.04E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	2.75E-06	2.06E-06	2.06E-06	2.06E-06	6.18E-06

	HAPs - Metals (continued)			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/mmBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential Emission in tons/yr	2.06E-06	4.12E-06	2.06E-06	1.03E-05
			Total HAPs:	3.37E-05

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/kgal	22,300	0.22	0.26
Potential Emission in tons/yr	2	0	0
Summed Potential Emissions in tons/yr	2		
CO2e Total in tons/yr	2		

Methodology
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Heat Input Capacity (MMBtu/hr) = Potential Throughput (gal/hr) x 0.140 MMBtu per gal
Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, and 1.3-12 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)
*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal. PM10 is based on the filterable and condensable PM emission factors.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
Potential NOx Emissions (tons/yr) = (9.8112 kgal/yr) * (20.0 lbs/kgal) / (2,000 lbs/ton) = 0.10 tons/yr
CO2 eq (tons/yr) = (CO2 eq factor) x Emissions (tons/yr)
No data was available in AP-42 for organic HAPs.
Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton
The CO2 Emission Factor for #1 Fuel Oil is 21500. The CO2 Emission Factor for #2 Fuel Oil is 22300.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Emission Calculations
Internal Combustion Engines - Natural Gas Fuel
4 - Stroke Rich-Burn Engine
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

ID	Location	kW	hp
Generator 2	Building Maintenance	50	67.1

Emissions calculated based on output rating (hp)

Maximum Output Horsepower Rating (hp)	67.10
Brake Specific Fuel Consumption (BSFC) (Btu/hp-hr)	7900
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	265.045
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.26

	Pollutant						
	PM*	**PM10***	**direct PM2.5***	**SO2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMBtu	9.50E-03	1.94E-02	1.94E-02	5.88E-04	2.21E+00	2.96E-02	3.72E+00
Potential Emission in tons/yr	1.26E-03	2.57E-03	2.57E-03	7.79E-05	2.93E-01	3.92E-03	4.93E-01

* PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM. PM2.5 emission factor is filterable PM2.5 + condensable PM.
Heat Input Capacity (MMBtu/hr) = Rating (kW) * (3.413*10^3 Btu/kW) / (10^6 Btu/MMBtu)
For rich-burn natural gas-fired engine sized 60 to 79 hp with unknown unit-specific BSFC, a represantive BSFC is 7900 Btu/hp-hr
Heat Input Capacity (MMBtu/hr) = Rating (hp) * (7900 Btu/hp) / (10^6 Btu/MMBtu)

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor	Potential
Acetaldehyde	2.79E-03	3.70E-04
Acrolein	2.63E-03	3.49E-04
Benzene	1.58E-03	2.09E-04
1,3-Butadiene	6.63E-04	8.79E-05
Formaldehyde	2.05E-02	2.72E-03
Methanol	3.06E-03	4.06E-04
Total PAH**	1.41E-04	1.87E-05
Toluene	5.58E-04	7.39E-05
Xylene	1.95E-04	2.58E-05
	Total	**4.26E-03**

HAP pollutants consist of the nine highest HAPs included in AP-42 Table 3.2-3.
**PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110	1.25	
Emission Factor in lb/MMcf**			2.2
Potential Emission in tons/yr	15	2E-01	3E-04
Summed Potential Emissions in tons/yr	15		
CO2e Total in tons/yr	18		

Methodology
Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-3
Potential Fuel Usage (MMBtu/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operating per Year (hr/yr)]
Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]
*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
**The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (3

Small Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: September 4, 2013

	Maximum Hours Operated per Year		500	Pollutant						
		Emission Factor in lb/hp-hr		PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
				2.20E-03	2.20E-03	2.20E-03	2.05E-03	3.10E-02	2.51E-03	6.68E-03
ID	**Location**	**kW**	**hp**							
Generator 1	Admin Building	54	72.4	3.98E-02	3.98E-02	3.98E-02	3.71E-02	5.61E-01	4.55E-02	1.21E-01
Generator 3	Dorm 10, 11, 12	300	402.3	2.21E-01	2.21E-01	2.21E-01	2.06E-01	3.12E+00	2.53E-01	6.72E-01
Generator 4	Dorm 17,18	300	402.3	2.21E-01	2.21E-01	2.21E-01	2.06E-01	3.12E+00	2.53E-01	6.72E-01
Generator 5	Dorm 13-16	275	368.8	2.03E-01	2.03E-01	2.03E-01	1.89E-01	2.86E+00	2.32E-01	6.16E-01
Generator 6	High Mast	40	53.6	2.95E-02	2.95E-02	2.95E-02	2.75E-02	4.16E-01	3.37E-02	8.96E-02
Generator 7	MSU	80	107.3	5.90E-02	5.90E-02	5.90E-02	5.50E-02	8.31E-01	6.74E-02	1.79E-01
Generator 8	PDR	300	402.3	2.21E-01	2.21E-01	2.21E-01	2.06E-01	3.12E+00	2.53E-01	6.72E-01
Generator 10	Power House	175	234.7	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.82E+00	1.47E-01	3.92E-01
Generator 11	Store Room	200	268.2	1.48E-01	1.48E-01	1.48E-01	1.37E-01	2.08E+00	1.69E-01	4.48E-01
Generator 12	WWTP	175	234.7	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.82E+00	1.47E-01	3.92E-01
		Potential Emission in tons/yr		1.40	1.40	1.40	1.31	19.74	1.60	4.25

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Hazardous Air Pollutants (HAPs)

				Pollutant								
			Emission Factor in lb/hp-hr****	**Benzene**	**Toluene**	**Xylene**	**1,3-Butadiene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**Total PAH HAPs*** **	**Potential Emission of Total HAPs (tons/yr)**
				6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06	
ID	**Location**	**kW**	**hp**									
Generator 1	Admin Building	54	72.4	1.18E-04	5.18E-05	3.61E-05	4.95E-06	1.50E-04	9.72E-05	1.17E-05	2.13E-05	4.91E-04
Generator 3	Dorm 10, 11, 12	300	402.3	6.57E-04	2.88E-04	2.01E-04	2.75E-05	8.31E-04	5.40E-04	6.51E-05	1.18E-04	2.73E-03
Generator 4	Dorm 17,18	300	402.3	6.57E-04	2.88E-04	2.01E-04	2.75E-05	8.31E-04	5.40E-04	6.51E-05	1.18E-04	2.73E-03
Generator 5	Dorm 13-16	275	368.8	6.02E-04	2.64E-04	1.84E-04	2.52E-05	7.62E-04	4.95E-04	5.97E-05	1.08E-04	2.50E-03
Generator 6	High Mast	40	53.6	8.76E-05	3.84E-05	2.68E-05	3.67E-06	1.11E-04	7.20E-05	8.68E-06	1.58E-05	3.64E-04
Generator 7	MSU	80	107.3	1.75E-04	7.68E-05	5.35E-05	7.34E-06	2.22E-04	1.44E-04	1.74E-05	3.15E-05	7.27E-04
Generator 8	PDR	300	402.3	6.57E-04	2.88E-04	2.01E-04	2.75E-05	8.31E-04	5.40E-04	6.51E-05	1.18E-04	2.73E-03
Generator 10	Power House	175	234.7	3.83E-04	1.68E-04	1.17E-04	1.61E-05	4.85E-04	3.15E-04	3.80E-05	6.90E-05	1.59E-03
Generator 11	Store Room	200	268.2	4.38E-04	1.92E-04	1.34E-04	1.84E-05	5.54E-04	3.60E-04	4.34E-05	7.89E-05	1.82E-03
Generator 12	WWTP	175	234.7	3.83E-04	1.68E-04	1.17E-04	1.61E-05	4.85E-04	3.15E-04	3.80E-05	6.90E-05	1.59E-03
		Potential Emission in tons/yr		4.16E-03	1.82E-03	1.27E-03	1.74E-04	5.26E-03	3.42E-03	4.12E-04	7.49E-04	**0.02**

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)
****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Green House Gas Emissions (GHG)

				Pollutant			**Summed Potential Emissions in tons/yr**	**CO2e Total in tons/yr**
			Emission Factor in lb/hp-hr	**CO2**	**CH4**	**N2O**		
				1.15E+00	4.63E-05	9.26E-06		
ID	**Location**	**kW**	**hp**					
Generator 1	Admin Building	54	72.4	21	8.38E-04	1.68E-04	21	21
Generator 3	Dorm 10, 11, 12	300	402.3	116	4.66E-03	9.31E-04	116	116
Generator 4	Dorm 17,18	300	402.3	116	4.66E-03	9.31E-04	116	116
Generator 5	Dorm 13-16	275	368.8	106	4.27E-03	8.54E-04	106	106
Generator 6	High Mast	40	53.6	15	6.21E-04	1.24E-04	15	15
Generator 7	MSU	80	107.3	31	1.24E-03	2.48E-04	31	31
Generator 8	PDR	300	402.3	116	4.66E-03	9.31E-04	116	116
Generator 10	Power House	175	234.7	67	2.72E-03	5.43E-04	67	68
Generator 11	Store Room	200	268.2	77	3.10E-03	6.21E-04	77	77
Generator 12	WWTP	175	234.7	67	2.72E-03	5.43E-04	67	68
		Potential Emission in tons/yr		732	2.95E-02	5.89E-03	**732**	**735**

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Potential NOx Emissions = (1,273,280 hp-hr/yr) * (0.0310 lb/hp-hr) / (2,000 lbs/ton) = 19.74 tons/yr
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).
CO2eq = (7.32E+02 tons/yr * 1) + (2.95E-02 tons/yr * 21) + (5.89E-03 tons/yr * 310) = 734.58 tons/yr

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Minor Source Operating Permit Renewal and Significant Permit Revision

Source Background and Description

Source Name:	Putnamville Correctional Facility
Source Location:	1500 & 1946 W US 40, Greencastle, Indiana 46135
County:	Putnam
SIC Code:	9223
Permit Renewal No.:	M133-33057-00005
Permit Reviewer:	Julie Alexander

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Putnamville Correctional Facility relating to the operation of a correctional facility. On April 9, 2013, Putnamville Correctional Facility submitted an application to the OAQ requesting to renew its operating permit. Putnamville Correctional Facility was issued a MSOP No. 0133-26521-00005 on August 05, 2008.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units:

(a) Two (2) natural gas-fired boilers, identified as Boiler #1 and Boiler #2, constructed in 1972 and permitted in 1994, with a heat input rating of 42.00 MMBtu per hour each, each using a natural gas-fired ignition burner with a heat input rating of 0.04474 MMBtu per hour each.

(b) One (1) biomass-fired boiler system including one (1) boiler, identified as Boiler #3, with a maximum heat input capacity of 14.33 MMBtu per hour, capable of wood pellets with emissions controlled by a cyclone, and exhausting to a stack.

(c) One (1) biomass handling and storage operation, consisting of the following:

(1) One (1) truck unloading operation with a maximum throughput of 33,000 pounds of biomass per day.

(2) One (1) biomass storage silo, with a maximum capacity to receive 8,250 pounds per hour of biomass (volumetric capacity 10,000 cubic feet), with emissions controlled by a baghouse.

(3) One (1) biomass handling system with a maximum throughput of 8,208 tons per year, with emissions controlled by a baghouse including: five (5) augers, one (1) conveyor, one (1) bucket elevator, one (1) fuel transfer system, and one (1) metering bin.

(4) One (1) biomass ash handling system with a maximum throughput of 148.80 tons per year.

The source also consists of the following emission units that were not specifically listed in MSOP 133-26521-00005; however, the supporting calculations document that the emissions were properly accounted for. The following emission units will be specifically identified as part of this MSOP Renewal:

(d) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows**:**

(1) Ten (10) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.395 MMBtu per hour, each;

(2) Three (3) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.165 MMBtu per hour, each;

(3) One (1) rotisserie oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.40 MMBtu per hour;

(4) One (1) carousel oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.275 MMBtu per hour;

(5) Two (2) griddles located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.162 MMBtu per hour, each;

(6) One (1) tilt skillet located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.144 MMBtu per hour;

(7) One (1) range located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.110 MMBtu per hour;

(8) One (1) space heater located in the training building garage, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(9) Fifteen (15) space heaters located in the outside warehouse, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.043 MMBtu per hour, each;

(10) One (1) furnace located in the exercise room, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.175 MMBtu per hour;

Since the issued of MSOP 133-26521-00005 on August 5, 2008, the source has added emission units with the potential to emit (PTE) less than the levels specified at 326 IAC 2-1.1-3(e)(1). Pursuant to 326 IAC 2-1.1-3(e) modifications with a PTE less than the specified levels are exempt from the permit revision requirements under 326 IAC 2-6.1-6. The following emission units will be incorporated as part of this permitting action:

(e) One (1) electric-powered grizzly wood grinder constructed in 2011 and permitted in 2013, with a maximum raw wood capacity of 4.0 tons per hour, used to grind wood used in the biomass-fired boiler;

(f) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows**:**

(1) Six (6) space heaters located in laundry, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.175 million British thermal units (MMBtu) per hour, each;

(2) One (1) furnace located in the horse barn, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.080 MMBtu per hour.

(g) One (1) park and patio construction shop operated by PEN Products, constructed in 2008 and permitted in 2013, used for building wooden park and patio furniture. The facility weighed the sawdust produced in one hour, and determined that the sawdust production rate is 1 pound per hour;

Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit

The source also consists of the following emission units that were constructed and/or are operating without a permit:

(a) One (1) pallet shop operated by PEN Products, constructed in 2008 and permitted in 2013, used for building wooden pallets, controlled by a dust collector with an estimated control efficiency of 90% and a collection rate of 2 pounds of sawdust per hour.

Although emission units with the potential to emit (PTE) less than the levels specified at 326 IAC 2-1.1-3(e)(1) are exempt from the permit revision requirements under 326 IAC 2-6.1-6. Pursuant to 326 IAC 2-6.1-4(a)(2)(C), the source is required to provide a description of the emissions unit that comprise the source. The source was required to inform IDEM of the installation of the following units as part of the MSOP No. M133-26521-00005 issued on August 5, 2008.

(b) Liquefied petroleum (LP) gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(1) One (1) fryer located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(2) One (1) grill located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.310 MMBtu per hour;

(3) One (1) boiler located in the training building, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.5426 MMBtu per hour;

(4) One (1) space heater located in compost and recycling, constructed in 1993 and permitted in 2013, with a heat input capacity of 0.250 MMBtu per hour;

(c) One (1) diesel-fired furnace located in Labor 2, constructed in 1980 and permitted in 2013, with a capacity of 1.12 gallons per hour of diesel fuel;

(d) Emergency generators, including:

(1) One (1) diesel-fired emergency generator, identified as Generator 1, manufactured February 27, 1987, installed January 8, 1988, and permitted in 2013, providing emergency power for the administrative building, with a rating of 72.4 horsepower (hp);

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

(3) One (1) diesel-fired emergency generator, identified as Generator 3, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 10, 11, and 12, with a rating of 402.3 hp;

(4) One (1) diesel-fired emergency generator, identified as Generator 4, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 17 and 18, with a rating of 402.3 hp;

(5) One (1) diesel-fired emergency generator, identified as Generator 5, manufactured August 1986, and permitted in 2013, providing emergency power for Dorms 13 through 16, with a rating of 368.8 hp;

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for High Mast, with a rating of 53.6 hp;

(7) One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for MSU, with a rating of 107.3 hp;

(8) One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for PDR, with a rating of 402.3 hp;

(9) One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house, with a rating of 670.5 hp;

(10) One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house, with a rating of 234.7 hp;

(11) One (1) diesel-fired emergency generator, identified as Generator 11, manufactured February 10, 1989, installed April, 1989, and permitted in 2013, providing emergency power for the store room, with a rating of 268.2 hp;

(12) One (1) diesel-fired emergency generator, identified as Generator 12, manufactured February 28, 2001 installed March 7, 2001, and permitted in 2013, providing emergency power for the wastewater treatment plant, with a rating of 234.7 hp;

(e) Welding operations, constructed in 2000 and permitted in 2013, including three (3) MIG stations with a maximum electrode consumption of 0.33 pounds per hour each, two (2) TIG stations with a maximum electrode consumption of 0.017 pounds per hour each, and one (1) plasma cutter with a maximum metal cutting rate of 4.0 inches per hour.

(f) Grinding and metal cutting operations, constructed in 2000 and permitted in 2013, including three (3) grinders with a maximum throughput rate of 0.83 pounds of metal per hour each, and one (1) metal saw with a maximum throughput rate of 0.17 pounds of metal per hour.

(g) One (1) carpenter shop used for maintenance carpentry, constructed in 2000 and permitted in 2013, controlled by a baghouse with an estimated control efficiency of 90% and a collection rate of 1 pound of sawdust per hour;

(h) Three (3) parts washers located in vehicle maintenance constructed in 2000, auto maintenance education, and Labor 2, constructed in 1980 and all permitted in 2013, using Zep Dyna 143 at a rate of 20.0, 20.0, and 30.0 gallons per year, respectively; and

(i) One (1) paint shop, constructed in 2000 and permitted in 2013, used for maintenance painting, using both water-based and solvent-based paints at a rate of 0.167 gallons per hour.

Emission Units and Pollution Control Equipment Removed From the Source

The source has removed the following emission units:

(a) Two (2) natural gas-fired boilers, identified as Boiler #3 and Boiler #4, constructed in 1980 and 1986, respectively, both modified to burn natural gas in 1995, with a heat input rating of 38 million British thermal units (MMBtu) per hour each.

Existing Approvals

Since the issuance of the MSOP No. 0133-26521-00005 on August 05, 2008, the source has not been issued any additional approvals.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the State Implementation Plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

Enforcement Issue

IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled “Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit”.

IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Emission Calculations

See Appendix A of this document for detailed emission calculations.

County Attainment Status

The source is located in Putnam County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.

[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.
Unclassifiable or attainment effective April 5, 2005, for PM2.5.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient

Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Putnam County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Putnam County has been classified as attainment for $PM_{2.5}$. On May 8, 2008, U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011.. Therefore, direct $PM_{2.5}$, SO_2, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants
Putnam County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

(a) The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-6.1 (Minor Source Operating Permits) applicability.

(b) Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source.

Unrestricted Potential Emissions	
Pollutant	Tons/year
PM	Less than 100
PM_{10}	Less than 100
$PM_{2.5}$	Less than 100
SO_2	Less than 100
VOC	Less than 100
CO	Less than 100
NO_x	Less than 100
GHGs as CO_2e	Less than 100,000
Single HAP	Less than 10
Total HAP	Less than 25

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

(a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all regulated pollutants, excluding GHGs, is less than 100 tons per year. However, PM, PM10, PM2.5 NOx, and CO is equal to or greater than twenty-five (25) tons per year. The source is not subject to the provisions of 326 IAC 2-7. Therefore, the source will be issued an MSOP Renewal.

(b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of GHGs is less than one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year.

(c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source will be issued an MSOP Renewal.

Proposed Revision

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Putnamville Correctional Facility on April 8, 2013, relating to the renewal of its MSOP and the incorporation of a number of emission units.

The following is a list of the emission units:

(a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(1) Ten (10) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.395 MMBtu per hour, each;

(2) Three (3) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.165 MMBtu per hour, each;

(3) One (1) rotisserie oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.40 MMBtu per hour;

(4) One (1) carousel oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.275 MMBtu per hour;

(5) Two (2) griddles located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.162 MMBtu per hour, each;

(6) One (1) tilt skillet located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.144 MMBtu per hour;

(7) One (1) range located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.110 MMBtu per hour;

(8) One (1) space heater located in the training building garage, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(9) Fifteen (15) space heaters located in the outside warehouse, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.043 MMBtu per hour, each;

(10) One (1) furnace located in the exercise room, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.175 MMBtu per hour;

(b) One (1) electric-powered grizzly wood grinder constructed in 2011 and permitted in 2013, with a maximum raw wood capacity of 4.0 tons per hour, used to grind wood used in the biomass-fired boiler;

(c) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows**:**

(1) Six (6) space heaters located in laundry, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.175 million British thermal units (MMBtu) per hour, each;

(2) One (1) furnace located in the horse barn, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.080 MMBtu per hour.

(d) One (1) park and patio construction shop operated by PEN Products, constructed in 2008 and permitted in 2013, used for building wooden park and patio furniture. The facility weighed the sawdust produced in one hour, and determined that the sawdust production rate is 1 pound per hour;

(e) One (1) pallet shop operated by PEN Products, constructed in 2008 and permitted in 2013, used for building wooden pallets, controlled by a dust collector with an estimated control efficiency of 90% and a collection rate of 2 pounds of sawdust per hour.

(f) Liquefied petroleum (LP) gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(1) One (1) fryer located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(2) One (1) grill located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.310 MMBtu per hour;

(3) One (1) boiler located in the training building, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.5426 MMBtu per hour;

(4) One (1) space heater located in compost and recycling, constructed in 1993 and permitted in 2013, with a heat input capacity of 0.250 MMBtu per hour;

(g) One (1) diesel-fired furnace located in Labor 2, constructed in 1980 and permitted in 2013, with a capacity of 1.12 gallons per hour of diesel fuel;

(h) Emergency generators, including:

(1) One (1) diesel-fired emergency generator, identified as Generator 1, manufactured February 27, 1987, installed January 8, 1988, and permitted in 2013, providing emergency power for the administrative building, with a rating of 72.4 horsepower (hp);

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

(3) One (1) diesel-fired emergency generator, identified as Generator 3, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 10, 11, and 12, with a rating of 402.3 hp;

(4) One (1) diesel-fired emergency generator, identified as Generator 4, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 17 and 18, with a rating of 402.3 hp;

(5) One (1) diesel-fired emergency generator, identified as Generator 5, manufactured August 1986, and permitted in 2013, providing emergency power for Dorms 13 through 16, with a rating of 368.8 hp;

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for High Mast, with a rating of 53.6 hp;

(7) One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for MSU, with a rating of 107.3 hp;

(8) One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for PDR, with a rating of 402.3 hp;

(9) One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house, with a rating of 670.5 hp;

(10) One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house, with a rating of 234.7 hp;

(11) One (1) diesel-fired emergency generator, identified as Generator 11, manufactured February 10, 1989, installed April, 1989, and permitted in 2013, providing emergency power for the store room, with a rating of 268.2 hp;

(12) One (1) diesel-fired emergency generator, identified as Generator 12, manufactured February 28, 2001 installed March 7, 2001, and permitted in 2013, providing emergency power for the wastewater treatment plant, with a rating of 234.7 hp;

(i) Welding operations, constructed in 2000 and permitted in 2013, including three (3) MIG stations with a maximum electrode consumption of 0.33 pounds per hour each, two (2) TIG stations with a maximum electrode consumption of 0.017 pounds per hour each, and one (1) plasma cutter with a maximum metal cutting rate of 4.0 inches per hour.

(j) Grinding and metal cutting operations, constructed in 2000 and permitted in 2013, including three (3) grinders with a maximum throughput rate of 0.83 pounds of metal per hour each, and one (1) metal saw with a maximum throughput rate of 0.17 pounds of metal per hour.

(k) One (1) carpenter shop used for maintenance carpentry, constructed in 2000 and permitted in 2013, controlled by a baghouse with an estimated control efficiency of 90% and a collection rate of 1 pound of sawdust per hour;

(l) Three (3) parts washers located in vehicle maintenance constructed in 2000, auto maintenance education, and Labor 2, constructed in 1980 and all permitted in 2013, using Zep Dyna 143 at a rate of 20.0, 20.0, and 30.0 gallons per year, respectively; and

(m) One (1) paint shop, constructed in 2000 and permitted in 2013, used for maintenance painting, using both water-based and solvent-based paints at a rate of 0.167 gallons per hour.

Source Status Prior to the Modification

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

Process/ Emission Unit	Potential To Emit of the Entire Source Prior to Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Boiler # 1 and Boiler # 2	0.69	2.74	2.74	0.22	36.11	1.99	30.33	43,595	0.68	-
Boiler #3	25.11	23.66	20.52	1.57	30.76	0.82	37.66	346	2.21	1.19
Biomass Handling Operations	8.49	3.05	0.68	-	-	-	-	-	-	-
Paved Roads	1.38	0.28	0.07	-	-	-	-	-	-	-
Total PTE of Entire Source	35.66	29.73	24.01	1.79	66.86	2.80	67.99	43,940	2.89	1.19
Title V Major Source Thresholds**	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds**	250	250	250	250	250	250	250	100,000	NA	NA

negl. = negligible
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.
(1) Worst Case HAP is HCL.

Permit Level Determination – MSOP Revision

The following table is used to determine the appropriate permit level under 326 IAC 2-6.1-6. This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e	Total HAPs	Worst Single HAP
Ten (10) laundry dryers	0.03	0.13	0.13	0.01	1.70	9.33E-02	1.42	2,048	0.03	-
Three (3) laundry dryers	4.04E-03	0.02	0.02	1.28E-03	0.21	0.01	0.18	257	4.01E-03	-
Rotisserie Oven	3.26E-03	0.01	0.01	1.03E-03	0.17	9.45E-03	0.14	207	3.24E-03	-
Carousel Oven	2.24E-03	8.97E-03	8.97E-03	7.09E-04	0.12	6.49E-03	0.10	143	2.23E-03	-

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e	Total HAPs	Worst Single HAP
Griddles	2.64E-03	0.01	0.01	8.35E-04	0.14	7.65E-03	0.12	168	2.63E-03	-
Tilt Skillet	1.17E-03	4.70E-03	4.70E-03	3.71E-04	0.06	3.40E-03	0.05	75	1.17E-03	-
Range	8.97E-04	3.59E-03	3.59E-03	2.83E-04	0.05	2.60E-03	0.04	57	8.91E-04	-
Space Heater	1.22E-03	4.90E-03	4.90E-03	3.86E-04	0.06	3.54E-03	0.05	78	1.22E-03	-
Space Heaters	5.26E-03	0.02	0.02	1.66E-03	0.28	0.02	0.23	334	5.23E-03	-
Furnace	1.43E-03	5.71E-03	5.71E-03	4.51E-04	0.08	4.13E-03	0.06	91	1.42E-03	-
Grizzly Wood Grinder	0.42	0.42	0.42	-	-	-	-	-	-	-
Six (6) Space Heaters	8.57E-03	0.03	0.03	2.71E-03	0.45	0.02	0.38	544	8.51E-03	-
One (1) Furnace	6.53E-04	2.61E-03	2.61E-03	2.06E-04	0.03	1.89E-03	0.03	41	6.48E-04	-
Park and Patio Shop	4.38	4.38	4.38	-	-	-	-	-	-	-
Pallet Shop	14.60	14.60	14.60	-	-	-	-	-	-	-
Fryer	1.45E-03	5.08E-03	5.08E-03	0.01	0.09	7.26E-03	5.44E-02	93	-	-
Grill	3.00E-03	0.01	0.01	0.02	0.20	0.02	0.11	192	-	-
Boiler	5.25E-03	0.02	0.02	0.04	0.34	0.03	0.20	336	-	-
Furnace	9.81E-03	0.01	0.01	0.35	0.10	1.67E-03	0.02	2	3.37E-05	-
Space Heater	2.42E-03	0.01	0.01	0.02	0.16	0.01	0.09	155	-	-
Generator 1	0.04	0.04	0.04	0.04	0.43	0.05	0.12	21	4.91E-04	-
Generator 2	4.05E-04	8.28E-04	8.28E-04	2.51E-05	0.09	1.26E-03	0.16	6	1.37E-03	-
Generator 3	0.22	0.22	0.22	0.21	2.41	0.25	0.67	116	2.73E-03	-
Generator 4	0.22	0.22	0.22	0.21	2.41	0.25	0.67	116	2.73E-03	-
Generator 5	0.20	0.20	0.20	0.19	2.21	0.23	0.62	106	2.50E-03	-
Generator 6	0.03	0.03	0.03	0.03	3.22E-01	0.03	0.09	15	3.64E-04	-
Generator 7	0.06	0.06	0.06	0.05	6.44E-01	0.07	0.18	31	7.27E-04	-
Generator 8	0.22	0.22	0.22	0.21	2.41	0.25	0.67	116	2.73E-03	-
Generator 9	0.12	0.07	0.07	0.68	4.02	0.12	0.92	195	1.85E-03	-
Generators 10	0.13	0.13	0.13	0.12	1.41	0.15	0.39	68	1.59E-03	-
Generator 11	0.15	0.15	0.15	0.14	1.61	0.17	0.45	77	1.82E-03	-
Generator 12	0.13	0.13	0.13	0.12	1.41	0.15	0.39	68	1.59E-03	-

Process/ Emission Unit	PTE of Proposed Revision (tons/year)									
	PM	PM10	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e	Total HAPs	Worst Single HAP
Welding operations	0.02	0.02	0.02	-	-	-	-	-	2.26E-03	-
Grinding and metal cutting operations	5.48E-05	2.46E-05	-	-	-	-	-	-	4.22E-06	-
Carpenter shop	4.87	4.87	4.87	-	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	0.07	-	-	6.58E-04	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Total PTE of Proposed Revision	25.90	26.07	26.07	2.44	23.63	4.29	8.63	5,753	1.27	-
negl. = negligible Worst Single HAP is HCL.										

Pursuant to 326 IAC 2-6.1-6(i)(1)(E), this MSOP is revised through Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit Revision and the proposed revision involves the operation of emission units with a potential to emit greater than or equal to twenty-five (25) tons per year of PM, PM10, or direct PM2.5.

Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this MSOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)									
	PM	PM_{10}*	$PM_{2.5}$**	SO_2	NO_x	VOC	CO	GHGs	Total HAPs	Worst Single HAP
Boiler # 1 and Boiler # 2	0.69	2.74	2.74	0.22	36.11	1.99	30.33	43,595	6.81E-01	-
Boiler #3	25.11	23.66	20.52	1.57	30.76	0.82	37.66	346	2.21	1.19
Natural Gas-Fired Combustion Units	0.06	0.25	0.25	0.02	3.35	0.18	2.81	4,043	6.03E-02	-
LP Gas-Fired Combustion Units	0.01	0.04	0.04	0.09	0.79	0.06	0.45	775	-	-
Diesel-Fired Combustion Unit	0.01	0.02	0.02	0.35	0.10	1.67E-03	0.02	2	3.37E-05	-
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	15.28	1.60	4.25	735	1.73E-02	-
Natural Gas Emergency Generator (G2)	4.05E-04	8.28E-04	8.28E-04	2.51E-05	0.09	1.26E-03	1.59E-01	6	1.37E-03	-
Large Diesel Emergency Generator (G9)	0.12	0.07	0.07	0.68	4.02	0.12	0.92	195	1.85E-03	-
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of Renewal (tons/year)									
	PM	PM_{10}*	$PM_{2.5}$**	SO_2	NO_x	VOC	CO	GHGs	Total HAPs	Worst Single HAP
Biomass Handling Operations	8.49	3.05	0.68	-	-	-	-	-	-	-
Welding and Plasma Cutting	0.02	0.02	0.02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	4.87	4.87	4.87	-	-	-	-	-	-	-
Pallet Shop	14.60	14.60	14.60	-	-	-	-	-	-	-
Park & Patio Construction	4.38	4.38	4.38	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	7.58E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	0.28	0.07	-	-	-	-	-	-	-
Total PTE of Entire Source	**65.89**	**61.05**	**55.73**	**4.23**	**90.50**	**7.25**	**76.62**	**49,695**	**4.17**	**1.19**
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000 CO_2e	NA	NA
Emission Offset/ Nonattainment NSR Major Source Thresholds	100	100	100	100	100	100	100	NA	NA	NA

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
**$PM_{2.5}$ listed is direct $PM_{2.5}$.

(a) MSOP Status
This existing source is not a Title V major stationary source, because the potential to emit criteria pollutants from the entire source is less than the Title V major source threshold levels. In addition, this existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is limited to less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-6.1 (MSOP).

(b) This existing stationary source is not major for PSD because the emissions of each regulated pollutant, excluding GHGs, are less than two hundred fifty (<250) tons per year, emissions of GHGs are less than one hundred thousand (<100,000) tons of CO_2 equivalent emissions (CO_2e) per year, and it is not in one of the twenty-eight (28) listed source categories.

Federal Rule Applicability

CAM

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

NSPS

(b) The requirements of the New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60.4230, Subpart JJJJ do apply, because Generator 2 was manufactured after June 12, 2006 and is not a fire pump engines.

The emergency generators subject to this rule include the following:

- Emergency generators, including:
    - o One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

Applicable portions of the NSPS are the following:

(1) 40 CFR 60.4230(a)(6)
(2) 40 CFR 60.4233(d)
(3) 40 CFR 60.4234
(4) 40 CFR 60.4236(c)
(5) 40 CFR 60.4243(b), (d), (e), (f)
(6) 40 CFR 60.4244
(7) 40 CFR 60.4245
(8) 40 CFR 60.4246
(9) 40 CFR 60.4248
(10) Table 1 for Subpart JJJJ
(11) Table 2 for Subpart JJJJ
(12) Table 3 for Subpart JJJJ

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

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the emergency generator except as otherwise specified in 40 CFR 60, Subpart JJJJ.

(c) The requirements of the New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60.4200, Subpart IIII do apply, because Generator 6 was manufactured after April 1, 2006 and is not a fire pump engines.

The emergency generators subject to this rule include the following:

- Emergency generators, including:
    - o One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for High Mast, with a rating of 53.6 hp;

Applicable portions of the NSPS are the following:

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (c)
(2) 40 CFR 60.4205(a)
(3) 40 CFR 60.4206
(4) 40 CFR 60.4207
(5) 40 CFR 60.4208
(6) 40 CFR 60.4209(a)
(7) 40 CFR 60.4211(b)
(8) 40 CFR 60.4214(b)
(9) 40 CFR 60.4217
(10) 40 CFR 60.4218
(11) 40 CFR 60.4219
(12) Table 1 for Subpart IIII

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

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

(d) The biomass-fired boiler (Boiler #3) is subject to the New Source Performance Standards for Small Industrial Commercial-Institutional Steam Generating Units (40 CFR 60, Subpart Dc), because each boiler was constructed or modified after June 9, 1989 and each has a maximum design heat input capacity greater than ten (10) million British thermal units (MMBtu) per hour and less than one hundred (100) MMBtu per hour.

The boilers subject to this rule include the following:

- One (1) biomass-fired boiler system including one (1) boiler, identified as Boiler #3, with a maximum heat input capacity of 14.33 MMBtu per hour, capable of wood pellets with emissions controlled by a cyclone, and exhausting to a stack.

Applicable portions of the NSPS are the following:

(1) 40 CFR 60.40c
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a)(1),(3), (g), and (i)

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

The requirements of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated as 326 IAC 12-1, apply to the biomass boiler except as otherwise specified in 40 CFR 60, Subpart Dc.

(e) The source is not subject 40 CFR 60, Subpart D, standards for performance for fossil-fuel-fired steam generators because the boilers located at this source have a heat input rate less than 250 MMBTU/hr.

(f) The source is not subject 40 CFR 60, Subpart Da, standards for performance for electric utility steam generators units because the boilers located at this source have a heat input rate less than 250 MMBTU/hr.

(g) The source is not subject 40 CFR 60, Subpart Db, standards for performance for industrial-commercial-institutional steam generating units because the boilers located at this source have a heat input rate less than 100 MMBTU/hr.

(h) There are no other New Source Performance Standards (NSPS)(40 CFR Part 60) included in the permit.

NESHAP

(i) This source is subject to the National Emission Standards for Hazardous Air Pollutants for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources (40 CFR Part 63, Subpart JJJJJJ).

- One (1) biomass-fired boiler system including one (1) boiler, identified as Boiler #3, with a maximum heat input capacity of 14.33 MMBtu per hour, capable of wood pellets with emissions controlled by a cyclone, and exhausting to a stack.

Non applicable portions of the NESHAP will not be included in the permit. This source is subject to the following portions of Subpart JJJJJJ.

(1) 40 CFR 63.11193
(2) 40 CFR 63.11194(a)(1), (b), (f)
(3) 40 CFR 63.11196(a), (d)
(4) 40 CFR 63.11200(b)
(5) 40 CFR 63.11201
(6) 40 CFR 63.11205
(7) 40 CFR 63.11210(a), (b), (c), (h)
(8) 40 CFR 63.11211
(9) 40 CFR 63.11212
(10) 40 CFR 63.11213
(11) 40 CFR 63.11214
(12) 40 CFR 63.11220
(13) 40 CFR 63.11221
(14) 40 CFR 63.11222
(15) 40 CFR 63.11223
(16) 40 CFR 63.11224
(17) 40 CFR 63.11225
(18) 40 CFR 63.11226
(19) 40 CFR 63.11235
(20) 40 CFR 63.11236
(21) 40 CFR 63.11237
(22) Table 1 for Subpart JJJJJJ
(23) Table 2 for Subpart JJJJJJ
(24) Table 3 for Subpart JJJJJJ
(25) Table 7 for Subpart JJJJJJ

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart JJJJJJ.

(j) This source is subject to the National Emission Standards for Hazardous Air Pollutants for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63.6580, Subpart ZZZZ).

- Emergency generators, including:
  - One (1) diesel-fired emergency generator, identified as Generator 1, manufactured February 27, 1987, installed January 8, 1988, and permitted in 2013, providing emergency power for the administrative building, with a rating of 72.4 horsepower (hp);

- One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

- One (1) diesel-fired emergency generator, identified as Generator 3, manufactured August 5, 1991, , and permitted in 2013, providing emergency power for Dorms 10, 11, and 12, with a rating of 402.3 hp;

- One (1) diesel-fired emergency generator, identified as Generator 4, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 17 and 18, with a rating of 402.3 hp;

- One (1) diesel-fired emergency generator, identified as Generator 5, manufactured August 1986, and permitted in 2013, providing emergency power for Dorms 13 through 16, with a rating of 368.8 hp;

- One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for High Mast, with a rating of 53.6 hp;

- One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for MSU, with a rating of 107.3 hp;

- One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for PDR, with a rating of 402.3 hp;

- One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house, with a rating of 670.5 hp;

- One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house, with a rating of 234.7 hp;

- One (1) diesel-fired emergency generator, identified as Generator 11, manufactured February 10, 1989, installed April, 1989, and permitted in 2013, providing emergency power for the store room, with a rating of 268.2 hp;

- One (1) diesel-fired emergency generator, identified as Generator 12, manufactured February 28, 2001 installed March 7, 2001, and permitted in 2013, providing emergency power for the wastewater treatment plant, with a rating of 234.7 hp;

Non applicable portions of the NESHAP will not be included in the permit. This is subject to the following portions of Subpart ZZZZ.

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(c), (f)(3)
(3) 40 CFR 63.6590(a)(1)(iii), (a)(2)(iii), (c)(1)
(4) 40 CFR 63.6640(f)(2)(ii) and (iii)
(5) 40 CFR 63.6670
(6) 40 CFR 63.6675

The provisions of 40 CFR 63 Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart ZZZZ.

(k) The source is not subject 40 CFR 63, Subpart DDDDD, national emission standards for hazardous air pollutants for major sources: industrial, commercial, and institutional boilers and process heaters because the source is not a major source for HAPs.

(l) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

State Rule Applicability - Entire Source

The following state rules are applicable to the source:

(a) 326 IAC 1-5-2 (Emergency Reduction Plans)
An Emergency Reduction Plan (ERP) is not required for Putnamville Correctional Facility, because all regulated pollutants are less than hundred (100) tons per year.

(b) 326 IAC 1-6-3 (Preventive Maintenance Plan)
The source is subject to 326 IAC 1-6-3.

(c) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
This source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit of all attainment regulated pollutants are less than 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

(d) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.

(e) 326 IAC 2-6 (Emission Reporting)
This source is not subject to 326 IAC 2-6 (Emission Reporting) because it is not required to have an operating permit pursuant to 326 IAC 2-7 (Part 70); it is not located in Lake, Porter, or LaPorte County, and its potential to emit lead is less than 5 tons per year. Therefore, this rule does not apply.

(f) 326 IAC 2-6.1 (Minor Source Operating Permits (MSOP))
MSOP applicability is discussed under the Permit Level Determination – MSOP section above.

(g) 326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1).

(h) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
The source is subject to the requirements of 326 IAC 6-4, because the paved roads have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

State Rule Applicability – Individual Facilities

The following state rules are applicable to the source:

(a) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)

Natural Gas-Fired Boilers

(1) Pursuant to 326 IAC 6-2-3(e), particulate emissions from any facility which has 250 mmBtu/hr heat input or less and which began operation after June 8, 1972, shall in no case exceed 0.6 lb/mmBtu heat input.

The potential emissions from Boiler #1 and #2 are 0.002 lb/mmBtu. Therefore, Boiler #1 and #2 is able to comply with this limit.

Biomass-Fired Boiler

(2) Pursuant to 326 IAC 6-2-4(a), the biomass-fired boiler, identified as Boiler #3 and rated at 14.33 mmBtu per hour, shall be limited by the following:

$$Pt = 1.09/Q^{0.26}$$

Where:

Pt = Pounds of particulate matter emitted per million Btu (lb/mmBtu) heat input
Q = Total source maximum operating capacity rating in million Btu per hour (mmBtu/hr) heat input. (Q = 38 + 38 + 14.33 + 1.075 = 90.3375 mmBtu/hr)

$$Pt = 1.09/90.3375^{0.26}$$

Pt = 0.34 lb/mmBtu

The potential particulate emissions from Biomass Boiler are 0.56 lb/mmBtu when burning the worst-case biomass. The cyclone shall be in operation at all times Biomass Boiler is in operation in order to comply with this limit.

Liquefied Petroleum Gas-fired Boiler

(3) Pursuant to 326 IAC 6-2-4(a), the liquefied petroleum gas-fired boiler located in the training building and rated at 0.5426 mmBtu per hour, shall be limited by the following:

$$Pt = 1.09/Q^{0.26}$$

Where:

Pt = Pounds of particulate matter emitted per million Btu (lb/mmBtu) heat input
Q = Total source maximum operating capacity rating in million Btu per hour (mmBtu/hr) heat input. (Q = 42 + 42 + 14.33 + 0.5426 = 98.8726 mmBtu/hr)

$$Pt = 1.09/98.8726^{0.26}$$

Pt = 0.34 lb/mmBtu

The potential emissions from boiler located in the training building 0.01 lb/MMBtu. Therefore, boiler located in the training building is able to comply with this limit.

(b) 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

(1) Pursuant to 326 IAC 7-1.1, Boilers #1, #2 and the boiler located in the training building are each not subject to the rule because the potential emissions are less than twenty five (25) tons per year when burning natural gas.

(2) This rule is applicable to emission units with a potential to emit twenty five (25) tons per year or ten (10) pounds per hour of sulfur dioxide. Pursuant to 326 IAC 7-1.1 (applicability), the one (1) biomass-fired boiler (Boiler #3) is subject to the rule because the potential emissions are greater than twenty five (25) tons per year when burning corn. However, since the biomass fired-boiler does not burn any of the fuels listed in 326 IAC 7-1.1-2, the requirements of this rule do not apply.

(c) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate emissions from the biomass and ash handling and storage operation shall be limited by the following:

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

$E = 4.10 P^{0.67}$

Where:
E = Rate of emission in pounds per hour; and
P = Process weight rate in tons per hour

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Biomass Storage Silo	4.13	10.60
Truck Unloading Operation	9.00	17.87
Biomass Handling System	2.81	8.20
Ash Handling System	0.02	0.30

Each emission unit will be able to comply with each limit without the use of a control device.

(d) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

Compliance Determination and Monitoring Requirements

The compliance determination and monitoring requirements applicable to this source are as follows:

Emission Unit	Control	Parameter	Frequency	Range	Excursions and Exceedances
Biomass Boiler	Cyclone	Visible Emissions	Daily	Normal - Abnormal	Response Steps

Proposed Changes

The changes listed below have been made to MSOP Renewal No. M133-33057-00005. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

Changes Affecting Conditions Throughout the Permit

(a) *Multiple Conditions - Mailing Address*
IDEM, OAQ has decided to remove all references to the source mailing address. IDEM, OAQ will continue to maintain records of the mailing address.

(b) *Multiple Conditions - Authorized Individual*
IDEM, OAQ has decided to clarify when an "authorized individual" is need.

(c) *Multiple Conditions - Renewal Language*
Throughout the permit, language and rule sites have been updated to the current standard language for the MSOP renewal.

(d) *Multiple Conditions - Rule References*
On October 1, 2010, revisions to Title 326 of the Indiana Administrative Code (IAC) were published in the Indiana Register. Some of the revisions affect the IAC references included in the permit. The permit has been revised to reflect the revisions that were made to Title 326 of the IAC.

(e) *Multiple Conditions - Timeframe References*
IDEM, OAQ has decided that the phrases "no later than" and "not later than" are clearer than "within" in relation to the end of a timeline. Therefore, all references to timelines have been revised to "no later than" or "not later than" except for the timelines in subparagraphs (b)(4) and (b)(5) of Section B - Emergency Provisions and Section B - Annual Fee Payment, in which the underlying rules state "within".

(f) *Multiple Conditions - Branch Name Updates*
Several of IDEM's Branches and sections have been renamed. Therefore, IDEM has updated the addresses listed in the permit. References to Permit Administration and Development Section and the Permits Branch have been changed to Permit Administration and Support Section. References to Asbestos Section, Compliance Data Section, Air Compliance Section, and Compliance Branch have been changed to Compliance and Enforcement Branch.

(g) *Multiple Conditions - Typographical Errors, Language Clarification*
Throughout the permit, typographical and grammatical errors have been corrected. Additionally, changes to language for clarification or to align with the current preferred permit language conventions have been made.

Changes Specific to Section A of the Permit

(a) A.2 has been updated with the new emission units.

SECTION A SOURCE SUMMARY

A.1 General Information [326 IAC 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

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~~Mailing Address: 1946 W US 40, Greencastle, Indiana 46135~~

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A.2 Emission Units and Pollution Control Equipment Summary

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

~~(a) Two (2) natural gas-fired boilers, identified as Boiler #3 and Boiler #4, constructed in 1980 and 1986, respectively, both modified to burn natural gas in 1995, with a heat input rating of 38 million British thermal units (MMBtu) per hour each.~~

(a) Two (2) natural gas-fired boilers, identified as Boiler #1 and Boiler #2, constructed in 1972 and permitted in 1994, with a heat input rating of 42.00 MMBtu per hour each, each using a natural gas-fired ignition burner with a heat input rating of 0.04474 MMBtu per hour each.

(b) One (1) biomass-fired boiler system including one (1) boiler, identified as ~~Biomass~~ Boiler **#3**, with a maximum heat input capacity of 14.33 MMBtu per hour, capable of ~~combusting untreated corn, wood (including bark),~~ wood pellets~~, switchgrass, and clean, untreated construction debris, also one (1) natural gas ignition burner with a maximum heat input capacity of 1.075 MMBtu per hour for cold boiler starts~~ with emissions controlled by a cyclone, and exhausting to a stack.

(c) ***

(d) One (1) pallet shop operated by PEN Products, constructed in 2008 and permitted in 2013, used for building wooden pallets, controlled by a dust collector with an estimated control efficiency of 90% and a collection rate of 2 pounds of sawdust per hour.

(e) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(1) Six (6) space heaters located in laundry, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.175 million British thermal units (MMBtu) per hour, each;

(2) Ten (10) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.395 MMBtu per hour, each;

(3) Three (3) laundry dryers located in laundry, constructed in 2004 and permitted in 2013, with a heat input capacity of 0.165 MMBtu per hour, each;

(4) One (1) rotisserie oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.40 MMBtu per hour;

(5) One (1) carousel oven located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.275 MMBtu per hour;

(6) Two (2) griddles located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.162 MMBtu per hour, each;

(7) One (1) tilt skillet located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.144 MMBtu per hour;

(8) One (1) range located in the dining hall kitchen, constructed in 1997 and permitted in 2013, with a heat input capacity of 0.110 MMBtu per hour;

(9) One (1) space heater located in the training building garage, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(10) Fifteen (15) space heaters located in the outside warehouse, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.043 MMBtu per hour, each;

(11) One (1) furnace located in the exercise room, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.175 MMBtu per hour;

(12) One (1) furnace located in the horse barn, constructed in 2008 and permitted in 2013, with a heat input capacity of 0.080 MMBtu per hour.

(f) Liquefied petroleum (LP) gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(1) One (1) fryer located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.150 MMBtu per hour;

(2) One (1) grill located in the administrative kitchen, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.310 MMBtu per hour;

(3) One (1) boiler located in the training building, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.5426 MMBtu per hour;

(4) One (1) space heater located in compost and recycling, constructed in 1993 and permitted in 2013, with a heat input capacity of 0.250 MMBtu per hour;

(g) One (1) diesel-fired furnace located in Labor 2, constructed in 1980 and permitted in 2013, with a capacity of 1.12 gallons per hour of diesel fuel;

(h) Emergency generators, including:

(1) One (1) diesel-fired emergency generator, identified as Generator 1, manufactured February 27, 1987, installed January 8, 1988, and permitted in 2013, providing emergency power for the administrative building, with a rating of 72.4 horsepower (hp);

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

(3) One (1) diesel-fired emergency generator, identified as Generator 3, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 10, 11, and 12, with a rating of 402.3 hp;

(4) One (1) diesel-fired emergency generator, identified as Generator 4, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 17 and 18, with a rating of 402.3 hp;

(5) One (1) diesel-fired emergency generator, identified as Generator 5, manufactured August 1986, and permitted in 2013, providing emergency power for Dorms 13 through 16, with a rating of 368.8 hp;

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for High Mast, with a rating of 53.6 hp;

(7) One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for MSU, with a rating of 107.3 hp;

(8) One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for PDR, with a rating of 402.3 hp;

(9) One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house, with a rating of 670.5 hp;

(10) One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house, with a rating of 234.7 hp;

(11) One (1) diesel-fired emergency generator, identified as Generator 11, manufactured February 10, 1989, installed April, 1989, and permitted in 2013, providing emergency power for the store room, with a rating of 268.2 hp;

(12) One (1) diesel-fired emergency generator, identified as Generator 12, manufactured February 28, 2001 installed March 7, 2001, and permitted in 2013, providing emergency power for the wastewater treatment plant, with a rating of 234.7 hp;

(i) One (1) electric-powered grizzly wood grinder constructed in 2011 and permitted in 2013, with a maximum raw wood capacity of 4.0 tons per hour, used to grind wood used in the biomass-fired boiler;

(j) Welding operations, constructed in 2000 and permitted in 2013, including three (3) MIG stations with a maximum electrode consumption of 0.33 pounds per hour each, two (2) TIG stations with a maximum electrode consumption of 0.017 pounds per hour each, and one (1) plasma cutter with a maximum metal cutting rate of 4.0 inches per hour.

(k) Grinding and metal cutting operations, constructed in 2000 and permitted in 2013, including three (3) grinders with a maximum throughput rate of 0.83 pounds of metal per hour each, and one (1) metal saw with a maximum throughput rate of 0.17 pounds of metal per hour.

(l) One (1) carpenter shop used for maintenance carpentry, constructed in 2000 and permitted in 2013, controlled by a baghouse with an estimated control efficiency of 90% and a collection rate of 1 pound of sawdust per hour;

(m) One (1) park and patio construction shop operated by PEN Products, constructed in 2008 and permitted in 2013, used for building wooden park and patio furniture. The facility weighed the sawdust produced in one hour, and determined that the sawdust production rate is 1 pound per hour;

(n) Three (3) parts washers located in vehicle maintenance constructed in 2000, auto maintenance education, and Labor 2, constructed in 1980 and all permitted in 2013, using Zep Dyna 143 at a rate of 20.0, 20.0, and 30.0 gallons per year, respectively; and

(o) One (1) paint shop, constructed in 2000 and permitted in 2013, used for maintenance painting, using both water-based and solvent-based paints at a rate of 0.167 gallons per hour.

Changes Specific to Section B and C of the Permit

(a) *Section B- Preventive Maintenace Plan*
IDEM, OAQ has decided to clarify Section B - Preventive Maintenance Plan.

(b) *Section B - Permit Renewal*
IDEM, OAQ has decided to state which rule establishes the authority to set a deadline for the Permittee to submit additional information. Therefore, Section B - Permit Renewal has been revised.

(c) *Section C - Opacity*
IDEM, OAQ has added 326 IAC 5-1-1 to the exception clause of Section C - Opacity, since 326 IAC 5-1-1 does list exceptions.

(d) *Section C - Incineration*
IDEM, OAQ has revised Section C - Incineration to more closely reflect the two underlying rules.

(e) *Section C - Performance Testing*
IDEM, OAQ has removed the first paragraph of Section C - Performance Testing due to the fact that specific testing conditions elsewhere in the permit will specify the timeline and procedures.

(f) *Section C - Monitoring Methods*
IDEM, OAQ has removed Section C - Monitoring Methods. The conditions that require the monitoring or testing, if required, state what methods shall be used.

(g) *Section C - Response to Excursions or Exceedances*
IDEM, OAQ has revised Section C - Response to Excursions or Exceedances. The introduction sentence has been added to clarify that it is only when an excursion or exceedance is detected that the requirements of this condition need to be followed. The word "excess" was added to the last sentence of paragraph (a) because the Permittee only has to minimize excess emissions. The middle of paragraph (b) has been deleted as it was duplicative of paragraph (a). The phrase "or are returning" was added to subparagraph (b)(2) as this is an acceptable response assuming the operation or emission unit does return to normal or its usual manner of operation. The phrase "within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable" was replaced with "normal or usual manner of operation" because the first phrase is just a limited list of the second phrase. The recordkeeping required by paragraph (e) was changed to require only records of the response because the previously listed items are required to be recorded elsewhere in the permit.

(h) *Section C - General Record Keeping Requirements*
The voice of paragraph (b) of Section C - General Record Keeping Requirements has been changed to clearly indicate that it is the Permittee that must follow the requirements of the paragraph.

SECTION B GENERAL CONDITIONS

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

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

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

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

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

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

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

B.~~4~~**2** Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, M133-~~26521~~**33057**-00005, is issued for a fixed term of **ten (10)** ~~five (5)~~ years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) ***

B.~~5~~**3** Term of Conditions [326 IAC 2-1.1-9.5]

***

B.**4**~~6~~ Enforceability

***

B.**5**~~7~~ Severability

***

B.**6**~~8~~ Property Rights or Exclusive Privilege

***

B.**7**~~9~~ Duty to Provide Information

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

(b) ***

~~B.10 Certification~~

~~(a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This~~

~~certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.~~

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

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

B.**8**~~11~~ Annual Notification [326 IAC 2-6.1-5(a)(5)]

(a) ***

(b) ***
Indiana Department of Environmental Management
Compliance **and Enforcement** Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251

(c) ***

B.**9**~~12~~ Preventive Maintenance Plan [326 IAC 1-6-3]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

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

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

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

The Permittee shall implement the PMPs.

(~~a~~**b**) If required by specific condition(s) in Section D of this permit **where no PMP was previously required**, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) ~~within~~ **no later than** ninety (90) days after issuance of this permit **or ninety (90) days after initial start-up, whichever is later**, including the following information on each facility:
***
Indiana Department of Environmental Management
Compliance **and Enforcement** Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

(**c**~~b~~) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or

~~potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1)~~.

(**d**~~c~~) ***

B.**10**~~13~~ Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to M133-~~26521~~**33057**-00005 and issued pursuant to permitting programs approved into the state implementation plan have been either:
***

(b) ***

B.**11**~~14~~ Termination of Right to Operate [326 IAC 2-6.1-7(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least **one hundred twenty (120)** ~~ninety (90)~~ days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

B.**12**~~15~~ Permit Renewal [326 IAC 2-6.1-7]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require **an affirmation that** the **statements in the application are true and complete** ~~certification~~ by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
***
Indiana Department of Environmental Management
Permits **Administration and Support Section** ~~Branch~~, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) ***

(1) Submitted at **one hundred twenty (120)**~~least ninety (90)~~ days prior to the date of the expiration of this permit; and

(2) ***

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-6.1 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified**, pursuant to 326 IAC 2-6.1-4(b),** in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.**13**~~16~~ Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

(a) ***

(b) ***
Indiana Department of Environmental Management
Permits **Administration and Support Section** ~~Branch~~, Office of Air Quality
100 North Senate Avenue

MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

(c) The Permittee shall notify the OAQ ~~within~~ **no later than** thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.**14**~~17~~ Source Modification Requirement

***

B.**15**~~18~~ Inspection and Entry
[326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

***

B.**16**~~19~~ Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

(a) ***

(b) ***
Indiana Department of Environmental Management
Permits **Administration and Support Section** ~~Branch~~, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require ~~the certification~~ **an affirmation that the statements in the application are true and complete** by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) ***

B.**17**~~20~~ Annual Fee Payment [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees ~~to IDEM, OAQ within~~ **due no later than** thirty (30) calendar days of receipt of a ~~billing~~ **bill from IDEM, OAQ**.

(b) ***

B.**18**~~21~~ Credible Evidence [326 IAC 1-1-6]

***

SECTION C SOURCE OPERATION CONDITIONS

C.2 Permit Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to ~~construct and~~ operate may be revoked for any of the following causes:
***

C.3 Opacity [326 IAC 5-1]

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

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

The Permittee shall not operate an incinerator ~~or incinerate any waste or refuse~~ except as provided in 326 IAC 4-2 **or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in** ~~and~~ 326 IAC 9-1-2 **or in this permit**.

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

(a) ***

(b) ***

(c) ***

(d) ***

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Compliance and Enforcement Branch ~~Asbestos Section~~, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. ~~The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).~~

(e) ***

(f) ***

(g) ***

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

~~(a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.~~

(a) **For performance testing required by this permit,** a test protocol, except as provided elsewhere in this permit, shall be submitted to:

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

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

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

(c) ***

~~C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]~~

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

C.1**2**~~3~~ Instrument Specifications [326 IAC 2-1.1-11]

***

C.1~~4~~**3** Response to Excursions or Exceedances

~~(a)~~ Upon detecting an excursion **where a response step is required by the D Section** or **an** exceedance, **of a limitation in this permit:**

(a) The Permittee shall **tale reasonable response steps to** restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing **excess** emissions.

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

(1) initial inspection and evaluation;

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

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

(c) ***

(d) ***

(e) The Permittee shall **record** ~~maintain~~ the ~~following records~~:

~~(1) monitoring data;~~

~~(2) monitor performance data, if applicable; and~~

~~(3) corrective actions~~ **reasonable response steps** taken.

C.1~~5~~**4** Actions Related to Noncompliance Demonstrated by a Stack Test

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall ~~take appropriate response actions. The Permittee shall~~ submit a description of ~~these~~ **its** response actions to IDEM, OAQ, **no later than seventy-five (75)** ~~within thirty (30)~~ days **after the date** ~~of receipt~~ of the test ~~results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented~~.

(b) A retest to demonstrate compliance shall be performed ~~within~~ **no later than** one hundred **eighty (180)** ~~twenty (120)~~ days ~~of receipt~~ **after** ~~of~~ the ~~original~~ **date of the** test ~~results~~. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred **eighty (180)** ~~twenty (120)~~ days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) ***

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

C.1~~6~~**5** Malfunctions Report [326 IAC 1-6-2]

***

C.1~~7~~**6** General Record Keeping Requirements [326 IAC 2-6.1-5]

(a) ***

(b) Unless otherwise specified in this permit, **for** all record keeping requirements not already legally required, **the Permittee** shall be ~~implemented within~~ **allowed up to** ninety (90) days **from the date** of permit issuance **or the date of initial start-up, whichever is later, to begin such record keeping.**.

C.1~~8~~**7** General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) ***
Indiana Department of Environmental Management
Compliance **and Enforcement Branch** ~~Data Section~~, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) ***

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

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

Changes Specific to Section D and E of the Permit

(a) The new emision units have been added to Section D.1.

(b) For clarity, IDEM, OAQ has changed references to the general conditions such as "in accordance with Section B", "in accordance with Section C", or other similar language to "Section C...contains the Permittee's obligation with regard to the records required by this condition.

(c) New Source Performance Standards requierments have been removed and moved to an E section.

(d) Section E.1, E.2, E.3, E.4 and E.5 have been add to reflect the NSPS and NESHAP that are applicable to the source.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

~~(a) Two (2) natural gas-fired boilers, identified as Boiler #3 and Boiler #4, constructed in 1980 and 1986, respectively, both modified to burn natural gas in 1995, with a heat input rating of 38 million British thermal units (MMBtu) per hour each.~~

(a) Two (2) natural gas-fired boilers, identified as Boiler #1 and Boiler #2, constructed in 1972 and permitted in 1994, with a heat input rating of 42.00 MMBtu per hour each, each using a natural gas-fired ignition burner with a heat input rating of 0.04474 MMBtu per hour each.

(b) One (1) biomass-fired boiler system including one (1) boiler, identified as ~~Biomass~~ Boiler **#3**, with a maximum heat input capacity of 14.33 MMBtu per hour, capable of ~~combusting untreated corn, wood (including bark),~~ wood pellets~~, switchgrass, and clean, untreated construction debris, also one (1) natural gas ignition burner with a maximum heat input capacity of 1.075 MMBtu per hour for cold boiler starts~~ with emissions controlled by a cyclone, and exhausting to a stack.

(f) Liquefied petroleum (LP) gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, as follows:

(3) One (1) boiler located in the training building, constructed in 1980 and permitted in 2013, with a heat input capacity of 0.5426 MMBtu per hour;

***

D.1.1 Particulate Matter Limitation (PM) [326 IAC 6-2]

~~(a) Pursuant to 326 IAC 6-2-3, the natural gas-fired boiler Boiler #3 shall be limited to 0.6 pounds of PM per MMBtu.~~

~~(b) Pursuant to 326 IAC 6-2-4, the natural gas-fired boiler Boiler #4 shall be limited to 0.35 pounds of PM per MMBtu.~~

(~~c~~**a**) Pursuant to 326 IAC 6-2-4, the biomass-fired boiler, identified as ~~Biomass~~ Boiler **#3**, shall be limited to 0.34 pounds of PM per MMBtu.

(b) Pursuant to 326 IAC 6-4-3, the natural gas-fired boiler Boiler #1 shall be limited to 0.6 pounds of PM per MMBtu.

(c) Pursuant to 326 IAC 6-4-3, the natural gas-fired boiler Boiler #2 shall be limited to 0.6 pounds of PM per MMBtu.

(d) Pursuant to 326 IAC 6-2-4, the liquefied petroleum gas-fired boiler located in the training building shall be limited to 0.34 pounds of PM per MMBtu.

D.1.2 Preventive Maintenance Plan

A Preventive Maintenance Plan **is required for these facilities and any control devices.** ~~in accordance with~~ Section B - Preventive Maintenance Plan **contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.** ~~of this permit, is required for these facilities and the cyclone controlling emissions from Biomass Boiler.~~

D.1.3 Particulate Control

In order to comply with Condition D.1.1**(a)**~~(c)~~, the cyclone for particulate control shall be in operation and control emissions from the biomass-fired boiler (~~Biomass~~ Boiler **#3**) at all times that the biomass-fired boiler is in operation.

~~D.1.4 Testing Requirements [326 IAC 2-1.1-11]~~

~~(a) Unless the Commissioner determines that valid stack test results from a similar boiler operated by the Indiana Department of Corrections is representative of emissions from Biomass Boiler, within one hundred and eighty (180) days after initial usage of untreated corn as a fuel in Biomass Boiler the Permittee shall perform PM, PM10, SO_2, NOx, CO, VOC, and HCl testing for Biomass Boiler when burning untreated corn utilizing methods as approved by the Commissioner. PM-10 includes filterable and condensible PM-10. If the Commissioner determines that valid stack test results from a similar boiler operated by the Indiana Department of Corrections is not representative of emissions from Biomass Boiler, stack tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.~~

~~(b) Unless the Commissioner determines that valid stack test results from a similar boiler operated by the Indiana Department of Corrections is representative of emissions from Biomass Boiler, within one hundred eighty (180) days after initial usage of switchgrass as a fuel in Biomass Boiler, the Permittee shall perform PM, PM10, SO_2, NOx, CO and VOC testing for Biomass Boiler when burning switchgrass utilizing methods as approved by the Commissioner. PM10 includes filterable and condensible PM10. If the commissioner determines that valid stack test results from a similar boiler operated by the Indiana Department of Corrections is not representative of emissions from Biomass Boiler, stack tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.~~

D.1.5 Cyclone Failure Detection

In the event that cyclone failure has been observed:

Failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. **The emissions unit shall be shut down no later than the completion of the boimass-fired boiler.** Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions). ~~Failure to take response steps in accordance with Section C - Response to Excursions and Exceedances, shall be considered a deviation from this permit.~~

D.1.6 Visible Emissions Notations

(a) ~~When combusting biomass, daily~~ Visible emission notations of **cyclone stack exhausts** ~~Biomass Boiler stack exhaust~~ shall be performed **once per day** during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) ***

(c) ***

(d) ***

(e) If abnormal emissions are observed, the Permittee shall take reasonable response ~~steps in accordance with~~. Section C - Response to Excursions ~~or~~ **and** Exceedances **contains the Permittee's obligation with regard to the reasonable response steps required by this condition.** Failure to take response steps ~~in accordance with Section C - Response to Excursions or Exceedances~~ shall be considered a deviation from this permit.

~~New Source Performance Standards~~

~~D.1.8 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]~~

~~(a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for the two natural gas-fired boilers and the biomass fired boiler except as otherwise specified in 40 CFR Part 60, Subpart Dc.~~

~~(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:~~

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

~~D.1.9 Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units Requirements [40 CFR Part 60, Subpart Dc] [326 IAC 12]~~

~~Pursuant to 40 CFR Part 60, Subpart Dc, the Permittee shall comply with the provisions of Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, which are incorporated by reference as 326 IAC 12 for the two natural gas-fired boilers and the biomass fired boiler (Biomass Boiler) as specified as follows.~~

~~§ 60.40c Applicability and delegation of authority.~~

~~(a) Except as provided in paragraph (d) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).~~

~~(b) In delegating implementation and enforcement authority to a State under section 111(c) of the Clean Air Act, Sec. 60.48c(a)(4) shall be retained by the Administrator and not transferred to a State.~~

~~(c) Steam generating units that meet the applicability requirements in paragraph (a) of this section are not subject to the sulfur dioxide (SO_2) or particulate matter (PM) emission limits, performance testing~~

~~requirements, or monitoring requirements under this subpart (Sec. Sec. 60.42c, 60.43c, 60.44c, 60.45c, 60.46c, or 60.47c) during periods of combustion research, as defined in Sec. 60.41c.~~

~~(d) Any temporary change to an existing steam generating unit for the purpose of conducting combustion research is not considered a modification under Sec. 60.14.~~

~~§ 60.41c Definitions.~~

~~As used in this subpart, all terms not defined herein shall have the meaning given them in the Clean Air Act and in subpart A of this part.~~

~~*Annual capacity factor* means the ratio between the actual heat input to a steam generating unit from an individual fuel or combination of fuels during a period of 12 consecutive calendar months and the potential heat input to the steam generating unit from all fuels had the steam generating unit been operated for 8,760 hours during that 12-month period at the maximum design heat input capacity. In the case of steam generating units that are rented or leased, the actual heat input shall be determined based on the combined heat input from all operations of the affected facility during a period of 12 consecutive calendar months.~~

~~*Coal* means all solid fuels classified as anthracite, bituminous, subbituminous, or lignite by the American Society of Testing and Materials in ASTM D388 (incorporated by reference, see Sec. 60.17), coal refuse, and petroleum coke. Coal-derived synthetic fuels derived from coal for the purposes of creating useful heat, including but not limited to solvent refined coal, gasified coal, coal-oil mixtures, and coal-water mixtures, are also included in this definition for the purposes of this subpart.~~

~~*Coal refuse* means any by-product of coal mining or coal cleaning operations with an ash content greater than 50 percent (by weight) and a heating value less than 13,900 kilojoules per kilogram (kJ/kg) (6,000 Btu per pound (Btu/lb) on a dry basis.~~

~~*Cogeneration steam generating unit* means a steam generating unit that simultaneously produces both electrical (or mechanical) and thermal energy from the same primary energy source.~~

~~*Combined cycle system* means a system in which a separate source (such as a stationary gas turbine, internal combustion engine, or kiln) provides exhaust gas to a steam generating unit.~~

~~*Combustion research* means the experimental firing of any fuel or combination of fuels in a steam generating unit for the purpose of conducting research and development of more efficient combustion or more effective prevention or control of air pollutant emissions from combustion, provided that, during these periods of research and development, the heat generated is not used for any purpose other than preheating combustion air for use by that steam generating unit (i.e., the heat generated is released to the atmosphere without being used for space heating, process heating, driving pumps, preheating combustion air for other units, generating electricity, or any other purpose).~~

~~*Conventional technology* means wet flue gas desulfurization technology, dry flue gas desulfurization technology, atmospheric fluidized bed combustion technology, and oil hydrodesulfurization technology.~~

~~*Distillate oil* means fuel oil that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see Sec. 60.17).~~

~~*Dry flue gas desulfurization technology* means a SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline reagent and water, whether introduced separately or as a premixed slurry or solution and forming a dry powder material. This definition includes devices where the dry powder material is subsequently converted to another form. Alkaline reagents used in dry flue gas desulfurization systems include, but are not limited to, lime and sodium compounds.~~

~~*Duct burner* means a device that combusts fuel and that is placed in the exhaust duct from another source (such as a stationary gas turbine, internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases before the exhaust gases enter a steam generating unit.~~

~~*Emerging technology* means any SO_2 control system that is not defined as a conventional technology under this section, and for which the owner or operator of the affected facility has received approval from the Administrator to operate as an emerging technology under Sec. 60.48c(a)(4).~~

~~*Federally enforceable* means all limitations and conditions that are enforceable by the Administrator, including the requirements of 40 CFR parts 60 and 61, requirements within any applicable State implementation plan, and any permit requirements established under 40 CFR 52.21 or under 40 CFR 51.18 and 51.24.~~

~~*Fluidized bed combustion technology* means a device wherein fuel is distributed onto a bed (or series of beds) of limestone aggregate (or other sorbent materials) for combustion; and these materials are forced upward in the device by the flow of combustion air and the gaseous products of combustion. Fluidized bed combustion technology includes, but is not limited to, bubbling bed units and circulating bed units.~~

~~*Fuel pretreatment* means a process that removes a portion of the sulfur in a fuel before combustion of the fuel in a steam generating unit.~~

~~*Heat input* means heat derived from combustion of fuel in a steam generating unit and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust gases from other sources (such as stationary gas turbines, internal combustion engines, and kilns).~~

~~*Heat transfer medium* means any material that is used to transfer heat from one point to another point.~~

~~*Maximum design heat input capacity* means the ability of a steam generating unit to combust a stated maximum amount of fuel (or combination of fuels) on a steady state basis as determined by the physical design and characteristics of the steam generating unit.~~

~~*Natural gas* means: (1) A naturally occurring mixture of hydrocarbon and nonhydrocarbon gases found in geologic formations beneath the earth's surface, of which the principal constituent is methane; or (2) liquefied petroleum (LP) gas, as defined by the American Society for Testing and Materials in ASTM D1835 (incorporated by reference, see Sec. 60.17).~~

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

~~*Oil* means crude oil or petroleum, or a liquid fuel derived from crude oil or petroleum, including distillate oil and residual oil.~~

~~*Potential sulfur dioxide emission rate* means the theoretical SO_2 emissions (nanograms per joule (ng/J) or lb/MMBtu heat input) that would result from combusting fuel in an uncleaned state and without using emission control systems.~~

~~*Process heater* means a device that is primarily used to heat a material to initiate or promote a chemical reaction in which the material participates as a reactant or catalyst.~~

~~*Residual oil* means crude oil, fuel oil that does not comply with the specifications under the definition of distillate oil, and all fuel oil numbers 4, 5, and 6, as defined by the American Society for Testing and Materials in ASTM D396 (incorporated by reference, see Sec. 60.17).~~

~~*Steam generating unit* means a device that combusts any fuel and produces steam or heats water or any other heat transfer medium. This term includes any duct burner that combusts fuel and is part of a combined cycle system. This term does not include process heaters as defined in this subpart.~~

~~*Steam generating unit operating day* means a 24-hour period between 12:00 midnight and the following midnight during which any fuel is combusted at any time in the steam generating unit. It is not necessary for fuel to be combusted continuously for the entire 24-hour period.~~

~~*Wet flue gas desulfurization technology* means an SO_2 control system that is located between the steam generating unit and the exhaust vent or stack, and that removes sulfur oxides from the combustion gases of the steam generating unit by contacting the combustion gases with an alkaline slurry or solution and forming a liquid material. This definition includes devices where the liquid material is subsequently converted to another form. Alkaline reagents used in wet flue gas desulfurization systems include, but are not limited to, lime, limestone, and sodium compounds.~~

~~*Wet scrubber system* means any emission control device that mixes an aqueous stream or slurry with the exhaust gases from a steam generating unit to control emissions of PM or SO_2.~~

~~*Wood* means wood, wood residue, bark, or any derivative fuel or residue thereof, in any form, including but not limited to sawdust, sanderdust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.~~

~~§ 60.48c Reporting and recordkeeping requirements.~~

~~(a) The owner or operator of each affected facility shall submit notification of the date of construction or reconstruction and actual startup, as provided by Sec. 60.7 of this part. This notification shall include:~~

~~(1) The design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility.~~

~~(2) If applicable, a copy of any federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under Sec. 60.42c, or Sec. 60.43c.~~

~~(3) The annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.~~

~~(4) Notification if an emerging technology will be used for controlling SO_2 emissions. The Administrator will examine the description of the control device and will determine whether the technology qualifies as an emerging technology. In making this determination, the Administrator may require the owner or operator of the affected facility to submit additional information concerning the control device. The affected facility is subject to the provisions of Sec. 60.42c(a) or (b)(1), unless and until this determination is made by the Administrator.~~

~~(g)(1) Except as provided under paragraphs (g)(2) and (g)(3) of this section, the owner or operator of each affected facility shall record and maintain records of the amount of each fuel combusted during each operating day.~~

~~(2) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility that combusts only natural gas, wood, fuels using fuel certification in Sec. 60.48c(f) to demonstrate compliance with the SO_2 standard, fuels not subject to an emissions standard (excluding opacity), or a mixture of these fuels may elect to record and maintain records of the amount of each fuel combusted during each calendar month.~~

~~(3) As an alternative to meeting the requirements of paragraph (g)(1) of this section, the owner or operator of an affected facility or multiple affected facilities located on a contiguous property unit where the only fuels combusted in any steam generating unit (including steam generating units not subject to this subpart) at that property are natural gas, wood, distillate oil meeting the most current requirements in §60.42C to use fuel certification to demonstrate compliance with the SO_2 standard, and/or fuels, excluding coal and residual oil, not subject to an emissions standard (excluding opacity) may elect to record and maintain records of the total amount of each steam generating unit fuel delivered to that property during each calendar month.~~

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

~~D.1.10 One Time Deadlines Relating to Small Industrial-Commercial-Institutional Steam Generating Units [40 CFR Part 60, Subpart Dc]~~

~~The Permittee shall comply with the following requirements by the dates listed below:~~

~~(a) Pursuant to 40 CFR 60.7(a)(1), submit notification of the date of construction of biomass-fired boiler (Biomass Boiler), no later than 30 days after commencement of construction.~~

~~(b) Pursuant to 40 CFR 60.7(a)(3), submit notification of the date of initial startup of biomass-fired boiler (Biomass Boiler), within 15 days of startup. This notification shall include the design heat input capacity of the affected facility and identification of fuels to be combusted in the affected facility, if applicable, a copy of any Federally enforceable requirement that limits the annual capacity factor for any fuel or mixture of fuels under §60.42c, or §60.43c, and the annual capacity factor at which the owner or operator anticipates operating the affected facility based on all fuels fired and based on each individual fuel fired.~~

SECTION E.1 New Source Performance Standards [326 IAC 2-7-5(1)][326 IAC 12-1] [40 CFR 60, Subpart JJJJ]

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

(h) Emergency generators, including:

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

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

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

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

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.1.2 Standard of Performance for Stationary Spark Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart JJJJ]

Pursuant to 40 CFR 60 Subpart JJJJ (included as Attachment A of this permit), the Permittee shall comply with the provisions of Standard of Performance for Stationary

Spark Ignition Internal Combustion Engines for the natural gas fired boilers as specified as follows:

(1) 40 CFR 60.4230(a)(6)
(2) 40 CFR 60.4233(d)
(3) 40 CFR 60.4234
(4) 40 CFR 60.4236(c)
(5) 40 CFR 60.4243(b), (d), (e), (f)
(6) 40 CFR 60.4244
(7) 40 CFR 60.4245
(8) 40 CFR 60.4246
(9) 40 CFR 60.4248
(10) Table 1 for Subpart JJJJ
(11) Table 2 for Subpart JJJJ
(12) Table 3 for Subpart JJJJ

SECTION E.2 New Source Performance Standards [326 IAC 2-7-5(1)][326 IAC 12-1] [40 CFR 60, Subpart IIII]

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

(h) Emergency generators, including:

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for High Mast, with a rating of 53.6 hp;

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

E.2.1 General Provision Relating to New Source Performance Standards [326 IAC 12] [40 CFR 60, Subpart A]

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

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.2.2 Standard of Performance for Stationary Compression Ignition Internal Combustion Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

Pursuant to 40 CFR 60 Subpart IIII (included as Attachment B of this permit), the Permittee shall comply with the provisions of Standard of Performance for Stationary Compression Ignition Internal Combustion Engines for the natural gas fired boilers as specified as follows:

(1) 40 CFR 60.4200(a)(2)(i), (a)(4), (c)
(2) 40 CFR 60.4205(a)

(3) 40 CFR 60.4206
(4) 40 CFR 60.4207
(5) 40 CFR 60.4208
(6) 40 CFR 60.4209(a)
(7) 40 CFR 60.4211(b)
(8) 40 CFR 60.4214(b)
(9) 40 CFR 60.4217
(10) 40 CFR 60.4218
(11) 40 CFR 60.4219
(12) Table 1 for Subpart IIII

SECTION E.3 New Source Performance Standards [326 IAC 2-7-5(1)][326 IAC 12-1] [40 CFR 60, Subpart Dc]

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

(a) One (1) biomass-fired boiler system including one (1) boiler, identified as Boiler #3, with a maximum heat input capacity of 14.33 MMBtu per hour, capable of wood pellets with emissions controlled by a cyclone, and exhausting to a stack.

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

E.3.1 General Provision Relating to New Source Performance Standards [326 IAC 12] [40 CFR 60, Subpart A]

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

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.3.2 Standard of Performance for Small Industrial-Commercial Institutional Steam Generating Units [326 IAC 12] [40 CFR 60, Subpart Dc]

Pursuant to 40 CFR 60 Subpart Dc (included as Attachment A of this permit), the Permittee shall comply with the provisions of Standard of Performance for Small Industrial-Commercial Institutional Steam Generating Units for the natural gas fired boilers as specified as follows:

(1) 40 CFR 60.40c
(2) 40 CFR 60.41c
(3) 40 CFR 60.48c(a)(1),(3), (g), and (i)

SECTION E.4 New Source Performance Standards [326 IAC 2-7-5(1)][326 IAC 12-1] [40 CFR 60, Subpart JJJJJJ]

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

(a) One (1) biomass-fired boiler system including one (1) boiler, identified as Boiler #3, with a maximum heat input capacity of 14.33 MMBtu per hour, capable of wood pellets with emissions controlled by a cyclone, and exhausting to a stack.

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

E.4.1 General Provision Relating to New Source Performance Standards [326 IAC 12] [40 CFR 60, Subpart A]

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

(b) Pursuant to 40 CFR 60.10, the Permittee shall submit all required notifications and reports to:

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

E.4.2 Standard of Performance for Industrial, Commercial, and Institutional Boilers Area Sources [326 IAC 12] [40 CFR 60, Subpart JJJJJJ]

Pursuant to 40 CFR 60 Subpart JJJJJJ (included as Attachment A of this permit), the Permittee shall comply with the provisions of Standard of Performance for Industrial, Commercial, and Institutional Boilers Area Sources for the natural gas fired boilers as specified as follows:

(1) 40 CFR 63.11193
(2) 40 CFR 63.11194(a)(1), (b), (f)
(3) 40 CFR 63.11196(a), (d)
(4) 40 CFR 63.11200(b)
(5) 40 CFR 63.11201
(6) 40 CFR 63.11205
(7) 40 CFR 63.11210(a), (b), (c), (h)
(8) 40 CFR 63.11211
(9) 40 CFR 63.11212
(10) 40 CFR 63.11213
(11) 40 CFR 63.11214
(12) 40 CFR 63.11220
(13) 40 CFR 63.11221
(14) 40 CFR 63.11222
(15) 40 CFR 63.11223
(16) 40 CFR 63.11224
(17) 40 CFR 63.11225
(18) 40 CFR 63.11226
(19) 40 CFR 63.11235
(20) 40 CFR 63.11236
(21) 40 CFR 63.11237
(22) Table 1 for Subpart JJJJJJ
(23) Table 2 for Subpart JJJJJJ

(24) Table 3 for Subpart JJJJJJ
(25) Table 7 for Subpart JJJJJJ

SECTION E.5 New Source Performance Standards [326 IAC 2-7-5(1)][326 IAC 12-1][40 CFR 60, Subpart ZZZZ]

Emissions Unit Description:

(h) Emergency generators, including:

(1) One (1) diesel-fired emergency generator, identified as Generator 1, manufactured February 27, 1987, installed January 8, 1988, and permitted in 2013, providing emergency power for the administrative building, with a rating of 72.4 horsepower (hp);

(2) One (1) natural gas-fired emergency generator, identified as Generator 2, manufactured September 10, 2007, installed November 19, 2007, and permitted in 2013, providing emergency power for building maintenance, with a rating of 0.17 MMBtu per hour;

(3) One (1) diesel-fired emergency generator, identified as Generator 3, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 10, 11, and 12, with a rating of 402.3 hp;

(4) One (1) diesel-fired emergency generator, identified as Generator 4, manufactured August 5, 1991, and permitted in 2013, providing emergency power for Dorms 17 and 18, with a rating of 402.3 hp;

(5) One (1) diesel-fired emergency generator, identified as Generator 5, manufactured August 1986, and permitted in 2013, providing emergency power for Dorms 13 through 16, with a rating of 368.8 hp;

(6) One (1) diesel-fired emergency generator, identified as Generator 6, manufactured April 16, 2006, installed October 20, 2006, and permitted in 2013, providing emergency power for High Mast, with a rating of 53.6 hp;

(7) One (1) diesel-fired emergency generator, identified as Generator 7, manufactured March 8, 2001, and permitted in 2013, providing emergency power for MSU, with a rating of 107.3 hp;

(8) One (1) diesel-fired emergency generator, identified as Generator 8, manufactured September 9, 1999, and permitted in 2013, providing emergency power for PDR, with a rating of 402.3 hp;

(9) One (1) diesel-fired emergency generator, identified as Generator 9, manufactured March 1, 2001, and permitted in 2013, providing emergency power for the power house, with a rating of 670.5 hp;

(10) One (1) diesel-fired emergency generator, identified as Generator 10, manufactured August 1972, installed June 1, 1972, and permitted in 2013, providing emergency power for the power house, with a rating of 234.7 hp;

(11) One (1) diesel-fired emergency generator, identified as Generator 11, manufactured February 10, 1989, installed April, 1989, and permitted in 2013, providing emergency power for the store room, with a rating of 268.2 hp;

(12) One (1) diesel-fired emergency generator, identified as Generator 12, manufactured February 28, 2001 installed March 7, 2001, and permitted in 2013, providing emergency power for the wastewater treatment plant, with a rating of 234.7 hp;

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

E.5.1 General Provisions Relating to NESHAP ZZZZ [326 IAC 20-1][40 CFR Part 63, Subpart A]

The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, apply to the facilities described in this section except when otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

E.5.2 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [326 IAC 20-82][40 CFR 63, Subpart ZZZZ]

The Permittee which owns or operates a stationary RICE at a major source of HAP emissions shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment E of this permit):

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(c), (f)(3)
(3) 40 CFR 63.6590(a)(1)(iii), (a)(2)(iii), (c)(1)
(4) 40 CFR 63.6640(f)(2)(ii) and (iii)
(5) 40 CFR 63.6670
(6) 40 CFR 63.6675

Conclusion and Recommendation

The staff recommends to the Commissioner that the MSOP Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on April 9, 2013. Additional information was received on June 3, 2013.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed MSOP Significant Permit Revision No. M133-33057-0005. The staff recommends to the Commissioner that this MSOP Significant Permit Revision be approved.

The operation of this correctional facility shall be subject to the conditions of the attached Part MSOP Renewal No. M133-33057-0005.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Julie Alexander at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317)233-1782 or toll free at 1-800-451-6027 extension 3-1782.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

1) Uncontrolled Emissions

	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Worst Case HAP (1)	Combined HAPs	GHGs
Emissions Units	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Boiler # 1 and Boiler # 2	6.86E-01	2.74	2.74	2.17E-01	36.11	1.99	30.33	-	6.81E-01	43,595
Boiler #3	25.11	23.66	20.52	1.57	30.76	8.16E-01	37.66	1.19	2.21	346
Natural Gas-Fired Combustion Units	6.36E-02	6.36E-02	2.54E-01	2.01E-02	3.35	1.84E-01	2.81	-	6.32E-02	4,043
LP Gas-Fired Combustion Units	1.21E-02	4.24E-02	4.24E-02	9.09E-02	7.88E-01	6.06E-02	4.55E-01	-	-	775
Diesel-Fired Combustion Unit	9.81E-03	1.62E-02	1.62E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	-	3.37E-05	2
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	15.28	1.60	4.25	-	1.73E-02	735
Natural Gas Emergency Generator (G2)	4.05E-04	8.28E-04	8.28E-04	2.51E-05	9.43E-02	1.26E-03	1.59E-01	-	1.37E-03	6
Large Diesel Emergency Generator (G9)	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	-	1.85E-03	195
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-
Biomass Handling Operations	8.49	3.05	6.78E-01	-	-	-	-	-	-	-
Welding and Plasma Cutting	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	4.87	4.87	4.87	-	-	-	-	-	-	-
Pallet Shop	14.60	14.60	14.60	-	-	-	-	-	-	-
Park & Patio Construction	4.38	4.38	4.38	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	7.58E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	2.75E-01	6.76E-02	-	-	-	-	-	-	-
Total	**65.89**	**61.05**	**55.73**	**4.23**	**90.50**	**7.25**	**76.62**	**1.19**	**4.17**	**49,695**

(1) Worst Case HAP is HCL.

2) Controlled Emissions

	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Worst Case HAP (1)	Combined HAPs	GHGs
Emissions Units	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Boiler # 1 and Boiler # 2	6.86E-01	2.74	2.74	2.17E-01	3.61E+01	1.99	30.33	-	6.81E-01	43,595
Boiler #3	25.11	23.66	20.52	1.57	3.08E+01	8.16E-01	37.66	1.19	2.21	346
Natural Gas-Fired Combustion Units	6.36E-02	6.36E-02	2.54E-01	2.01E-02	3.35	1.84E-01	2.81	-	6.32E-02	4,043
LP Gas-Fired Combustion Units	1.21E-02	4.24E-02	4.24E-02	9.09E-02	7.88E-01	6.06E-02	4.55E-01	-	-	775
Diesel-Fired Combustion Unit	9.81E-03	1.62E-02	1.62E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	-	3.37E-05	2
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	15.28	1.60	4.25	-	1.73E-02	735
Natural Gas Emergency Generator (G2)	4.05E-04	8.28E-04	8.28E-04	2.51E-05	9.43E-02	1.26E-03	1.59E-01	-	1.37E-03	6
Large Diesel Emergency Generator (G9)	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	-	1.85E-03	195
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-
Biomass Handling Operations	7.20	2.48	5.24E-01	-	-	-	-	-	-	-
Welding and Plasma Cutting	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	4.87E-01	4.87E-01	4.87E-01	-	-	-	-	-	-	-
Pallet Shop	1.46	1.46	1.46	-	-	-	-	-	-	-
Park & Patio Construction	4.38	4.38	4.38	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	7.58E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	2.75E-01	6.76E-02	-	-	-	-	-	-	-
Total	**47.08**	**42.96**	**38.06**	**4.23**	**90.50**	**7.25**	**76.62**	**1.19**	**4.17**	**49,695**

(1) Worst Case HAP is HCL.

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: 3.96E+04

3) Potential to Emit After Issuance

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Worst Case HAP (1)	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Boiler # 1 and Boiler # 2	6.86E-01	2.74	2.74	2.17E-01	36.11	1.99	30.33	-	6.81E-01	43,595
Boiler #3	25.11	23.66	20.52	1.57	30.76	8.16E-01	37.66	1.19	2.21	346
Natural Gas-Fired Combustion Units	6.36E-02	6.36E-02	2.54E-01	2.01E-02	3.35	1.84E-01	2.81	-	6.32E-02	4,043
LP Gas-Fired Combustion Units	1.21E-02	4.24E-02	4.24E-02	9.09E-02	7.88E-01	6.06E-02	4.55E-01	-	-	775
Diesel-Fired Combustion Unit	9.81E-03	1.62E-02	1.62E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	-	3.37E-05	2
Small Diesel Emergency Generators (G1, G3-G8, G10-G12)	1.40	1.40	1.40	1.31	15.28	1.60	4.25	-	1.73E-02	735
Natural Gas Emergency Generator (G2)	4.05E-04	8.28E-04	8.28E-04	2.51E-05	9.43E-02	1.26E-03	1.59E-01	-	1.37E-03	6
Large Diesel Emergency Generator (G9)	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	-	1.85E-03	195
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-	-
Biomass Handling Operations	8.49	3.05	6.78E-01	-	-	-	-	-	-	-
Welding and Plasma Cutting	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	-	2.26E-03	-
Grinding and Metal Sawing	5.48E-05	2.46E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter Shop	4.87	4.87	4.87	-	-	-	-	-	-	-
Pallet Shop	14.60	14.60	14.60	-	-	-	-	-	-	-
Park & Patio Construction	4.38	4.38	4.38	-	-	-	-	-	-	-
Parts Washers	-	-	-	-	-	2.30E-01	-	-	7.58E-03	-
Paint Shop	-	-	-	-	-	2.25	-	-	1.18	-
Paved Roads	1.38	2.75E-01	6.76E-02	-	-	-	-	-	-	-
Total	**65.89**	**61.05**	**55.73**	**4.23**	**90.50**	**7.25**	**76.62**	**1.19**	**4.17**	**49,695**

(1) Worst Case HAP is HCL.

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

1) Constructed in 1972

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generators 10	0.13	0.13	0.13	0.12	1.41	0.15	0.39	1.59E-03	**68**
Total	**0.13**	**0.13**	**0.13**	**0.12**	**1.41**	**0.15**	**0.39**	**1.59E-03**	**68**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

2) Constructed in 1980

Emissions Units	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
		tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Space Heater	Training Building Garage	1.22E-03	4.90E-03	4.90E-03	3.86E-04	6.44E-02	3.54E-03	5.41E-02	1.22E-03	78
Space Heaters	Outside Warehouse	5.26E-03	2.10E-02	2.10E-02	1.66E-03	2.77E-01	1.52E-02	2.33E-01	5.23E-03	334
Furnace	Exercise Room	1.43E-03	5.71E-03	5.71E-03	4.51E-04	7.51E-02	4.13E-03	6.31E-02	1.42E-03	91
Fryer	Administrative Kitchen	1.45E-03	5.08E-03	5.08E-03	1.09E-02	9.44E-02	7.26E-03	5.44E-02	-	93
Grill	Administrative Kitchen	3.00E-03	1.05E-02	1.05E-02	2.25E-02	1.95E-01	1.50E-02	1.13E-01	-	192
Boiler	Training Building	5.25E-03	1.84E-02	1.84E-02	3.94E-02	3.41E-01	2.63E-02	1.97E-01	-	336
Furnace	Labor 2	9.81E-03	1.62E-02	1.62E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	3.37E-05	2
Parts Washers	Auto Maintenance and Labor 2	-	-	-	-	-	1.65E-01	-	6.92E-03	-
	Total	**0.03**	**0.08**	**0.08**	**0.42**	**1.15**	**0.24**	**0.74**	**1.48E-02**	**1,125**
	Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

3) Constructed in 1986

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 5	0.20	0.20	0.20	0.19	2.21	0.23	0.62	2.50E-03	106
Total	**0.20**	**0.20**	**0.20**	**0.19**	**2.21**	**0.23**	**0.62**	**2.50E-03**	**106**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

4) Constructed in 1988

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 1	0.04	0.04	0.04	0.04	0.43	0.05	0.12	4.91E-04	21
Total	**0.04**	**0.04**	**0.04**	**0.04**	**0.43**	**0.05**	**0.12**	**4.91E-04**	**21**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

5) Constructed in 1989

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 11	0.15	0.15	0.15	0.14	1.61	0.17	0.45	1.82E-03	77
Total	**0.15**	**0.15**	**0.15**	**0.14**	**1.61**	**0.17**	**0.45**	**1.82E-03**	**77**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

6) Constructed in 1991

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 3	0.22	0.22	0.22	0.21	2.41	0.25	0.67	2.73E-03	116
Generator 4	0.22	0.22	0.22	0.21	2.41	0.25	0.67	2.73E-03	116
Total	**0.44**	**0.44**	**0.44**	**0.41**	**4.83**	**0.51**	**1.34**	**0.01**	**232**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

7) Constructed in 1993

Emissions Units	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
		tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Space Heater	Compost & Recycling Building	2.42E-03	8.47E-03	8.47E-03	1.81E-02	1.57E-01	1.21E-02	9.07E-02	-	155
	Total	**2.42E-03**	**0.01**	**0.01**	**0.02**	**0.16**	**0.01**	**0.09**	**-**	**155**
	Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

8) Constructed in 1997

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Rotisserie Oven	3.26E-03	1.31E-02	1.31E-02	1.03E-03	1.72E-01	9.45E-03	1.44E-01	3.24E-03	207
Carousel Oven	2.24E-03	8.97E-03	8.97E-03	7.09E-04	1.18E-01	6.49E-03	9.92E-02	2.23E-03	143
Griddles	2.64E-03	1.06E-02	1.06E-02	8.35E-04	1.39E-01	7.65E-03	1.17E-01	2.63E-03	168
Tilt Skillet	1.17E-03	4.70E-03	4.70E-03	3.71E-04	6.18E-02	3.40E-03	5.19E-02	1.17E-03	75
Range	8.97E-04	3.59E-03	3.59E-03	2.83E-04	4.72E-02	2.60E-03	3.97E-02	8.91E-04	57
Total	**0.01**	**0.04**	**0.04**	**3.23E-03**	**0.54**	**0.03**	**0.45**	**1.02E-02**	**650**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

9) Constructed in 1999

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 8	0.22	0.22	0.22	0.21	2.41	0.25	0.67	2.73E-03	116
Total	**0.22**	**0.22**	**0.22**	**0.21**	**2.41**	**0.25**	**0.67**	**2.73E-03**	**116**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

10) Constructed in 2000

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Welding operations	0.02	0.02	0.02	-	-	-	-	2.26E-03	-
Grinding and metal cutting operations	5.48E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter shop	4.87	4.87	4.87	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	0.07	-	6.58E-04	-
Paint Shop	-	-	-	-	-	2.25	-	1.18	-
Total	**4.89**	**4.89**	**4.89**	**-**	**-**	**2.32**	**-**	**1.19**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

11) Constructed in 2001

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 12	0.13	0.13	0.13	0.12	1.41	0.15	0.39	1.59E-03	68
Generator 9	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02E+00	1.18E-01	9.22E-01	1.85E-03	195
Generator 7	0.06	0.06	0.06	0.05	0.64	0.07	0.18	7.27E-04	31
Total	**0.31**	**0.26**	**0.26**	**0.85**	**6.07**	**0.33**	**1.49**	**4.16E-03**	**294**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

12) Constructed in 2004

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Ten (10) laundry dryers	0.03	0.13	0.13	0.01	1.70	0.09	1.42	3.20E-02	2,048
Three (3) laundry dryers	4.04E-03	0.02	0.02	0.00	0.21	0.01	0.18	4.01E-03	257
Total	**0.04**	**0.15**	**0.15**	**0.01**	**1.91**	**0.10**	**1.60**	**3.60E-02**	**2,304**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

13) Constructed in 2006

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 6	0.03	0.03	0.03	0.03	0.32	0.03	0.09	3.64E-04	15
Total	**0.03**	**0.03**	**0.03**	**0.03**	**0.32**	**0.03**	**0.09**	**3.64E-04**	**15**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

14) Constructed in 2007

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Generator 2	4.05E-04	8.28E-04	8.28E-04	2.51E-05	9.43E-02	1.26E-03	1.59E-01	1.37E-03	6
Total	**4.05E-04**	**8.28E-04**	**8.28E-04**	**2.51E-05**	**9.43E-02**	**1.26E-03**	**1.59E-01**	**1.37E-03**	**6**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

15) Constructed in 2008 (Pallet Shop Modification)

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Pallet Shop	14.60	14.60	14.60	-	-	-	-	-	-
Total	**14.60**	**14.60**	**14.60**	**-**	**-**	**-**	**-**	**-**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

16) Constructed in 2008 (Laundry Room Modification)

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Six (6) Space Heaters	8.57E-03	3.43E-02	3.43E-02	2.71E-03	4.51E-01	2.48E-02	3.79E-01	8.51E-03	544
Total	**0.01**	**0.03**	**0.03**	**2.71E-03**	**0.45**	**0.02**	**0.38**	**0.01**	**544**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

17) Constructed in 2008 (Horse Barn Modification)

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
One (1) Furnace	6.53E-04	2.61E-03	2.61E-03	2.06E-04	3.44E-02	1.89E-03	2.89E-02	6.48E-04	41
Total	**6.53E-04**	**2.61E-03**	**2.61E-03**	**2.06E-04**	**3.44E-02**	**1.89E-03**	**2.89E-02**	**6.48E-04**	**41**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

18) Constructed in 2008 (Park and Patio Shop Modification)

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Park and Patio Shop	4.38	4.38	4.38	-	-	-	-	-	-
Total	**4.38**	**4.38**	**4.38**	**-**	**-**	**-**	**-**	**-**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

19) Constructed in 2011

Emissions Units	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Grizzly Wood Grinder	6.13	6.13	6.13	-	-	-	-	-	-
Total	**6.13**	**6.13**	**6.13**	**-**	**-**	**-**	**-**	**-**	**-**
Exemption Limit	**5.00**	**5.00**	**5.00**	**10.00**	**10.00**	**10.00**	**25.00**	**10.00**	**-**

Notes:

(1) In 2008, four (4) different modifications occurred in four different locations at the source.

The six (6) laundry room space heaters where installed in 2008 and have no effect on any operation outside the laundry room. The one (1) horse barn furnace was installed in 2008 and has no effect on any operations outside the horse barn. The park and patio construction shop was also installed in 2008, but the park and patio shop is housed in a different building and outside of the work force, the shop has no effect on the rest of the operations at the source. These separate modifications are below the exemption level for a minor permit revision.

The pallet shop was constructed in 2008 and have no effect on any operations outside the pallet shop. This modification is need a Minor Permit Revisions in order to be installed

(2) All other emission units, installed without notification, are below the exemption level for a Minor Permit Revision

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

20) Emission units being incorporated as part of this permitting action

Emissions Units	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
		tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Ten (10) laundry dryers	-	3.22E-02	1.29E-01	1.29E-01	1.02E-02	1.70	9.33E-02	1.42	3.20E-02	2,048
Three (3) laundry dryers	-	4.04E-03	1.62E-02	1.62E-02	1.28E-03	2.13E-01	1.17E-02	1.79E-01	4.01E-03	257
Rotisserie Oven	-	3.26E-03	1.31E-02	1.31E-02	1.03E-03	1.72E-01	9.45E-03	1.44E-01	3.24E-03	207
Carousel Oven	-	2.24E-03	8.97E-03	8.97E-03	7.09E-04	1.18E-01	6.49E-03	9.92E-02	2.23E-03	143
Griddles	-	2.64E-03	1.06E-02	1.06E-02	8.35E-04	1.39E-01	7.65E-03	1.17E-01	2.63E-03	168
Tilt Skillet	-	1.17E-03	4.70E-03	4.70E-03	3.71E-04	6.18E-02	3.40E-03	5.19E-02	1.17E-03	75
Range	-	8.97E-04	3.59E-03	3.59E-03	2.83E-04	4.72E-02	2.60E-03	3.97E-02	8.91E-04	57
Space Heater	Training Building Garage	1.22E-03	4.90E-03	4.90E-03	3.86E-04	6.44E-02	3.54E-03	5.41E-02	1.22E-03	78
Space Heaters	Outside Warehouse	5.26E-03	2.10E-02	2.10E-02	1.66E-03	2.77E-01	1.52E-02	2.33E-01	5.23E-03	334
Furnace	Exercise Room	1.43E-03	5.71E-03	5.71E-03	4.51E-04	7.51E-02	4.13E-03	6.31E-02	1.42E-03	91
Grizzly Wood Grinder	-	6.13E+00	6.13E+00	6.13E+00	-	-	-	-	-	-
Six (6) Space Heaters	Laundry Room	8.57E-03	3.43E-02	3.43E-02	2.71E-03	4.51E-01	2.48E-02	3.79E-01	8.51E-03	544
One (1) Furnace	Horse Barn	6.53E-04	2.61E-03	2.61E-03	2.06E-04	3.44E-02	1.89E-03	2.89E-02	6.48E-04	41
Park and Patio Shop	-	4.38	4.38	4.38	-	-	-	-	-	-
	Total	**10.58**	**10.77**	**10.77**	**0.02**	**3.35**	**0.18**	**2.81**	**0.06**	**4,043**
	Significant Permit Revisions Limits	**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**100.00**	**25.00**	**-**

21) Constructed and/or are operating without a permit

Emissions Units	Location	PM	PM_{10}	$PM_{2.5}$	SO_2	NOx	VOC	CO	Combined HAPs	GHGs
		tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
Pallet Shop	-	14.60	14.60	14.60	-	-	-	-	-	-
Fryer	Administrative Kitchen	1.45E-03	5.08E-03	5.08E-03	1.09E-02	9.44E-02	7.26E-03	5.44E-02	-	93
Grill	Administrative Kitchen	3.00E-03	1.05E-02	1.05E-02	2.25E-02	1.95E-01	1.50E-02	1.13E-01	-	192
Boiler	Training Building	5.25E-03	1.84E-02	1.84E-02	3.94E-02	3.41E-01	2.63E-02	1.97E-01	-	336
Furnace	Labor 2	9.81E-03	1.62E-02	1.62E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02	3.37E-05	2
Space Heater	Compost & Recycling Building	2.42E-03	8.47E-03	8.47E-03	1.81E-02	1.57E-01	1.21E-02	9.07E-02	-	155
Generator 1	-	3.98E-02	3.98E-02	3.98E-02	3.71E-02	4.34E-01	4.55E-02	1.21E-01	4.91E-04	21
Generator 2	-	4.05E-04	8.28E-04	8.28E-04	2.51E-05	9.43E-02	1.26E-03	1.59E-01	1.37E-03	6
Generator 3	-	2.21E-01	2.21E-01	2.21E-01	2.06E-01	2.41	2.53E-01	6.72E-01	2.73E-03	116
Generator 4	-	2.21E-01	2.21E-01	2.21E-01	2.06E-01	2.41	2.53E-01	6.72E-01	2.73E-03	116
Generator 5	-	2.03E-01	2.03E-01	2.03E-01	1.89E-01	2.21	2.32E-01	6.16E-01	2.50E-03	106
Generator 6	-	2.95E-02	2.95E-02	2.95E-02	2.75E-02	3.22E-01	3.37E-02	8.96E-02	3.64E-04	15
Generator 7	-	5.90E-02	5.90E-02	5.90E-02	5.50E-02	6.44E-01	6.74E-02	1.79E-01	7.27E-04	31
Generator 8	-	2.21E-01	2.21E-01	2.21E-01	2.06E-01	2.41	2.53E-01	6.72E-01	2.73E-03	116
Generator 9	-	1.17E-01	6.72E-02	6.72E-02	6.78E-01	4.02	1.18E-01	9.22E-01	1.85E-03	195
Generators 10	-	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.41	1.47E-01	3.92E-01	1.59E-03	68
Generator 11	-	1.48E-01	1.48E-01	1.48E-01	1.37E-01	1.61	1.69E-01	4.48E-01	1.82E-03	77
Generator 12	-	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.41	1.47E-01	3.92E-01	1.59E-03	68
Welding operations	-	2.50E-02	2.50E-02	2.50E-02	-	-	-	-	2.26E-03	-
Grinding and metal cutting operations	-	5.48E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter shop	-	4.87	4.87	4.87	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	-	6.58E-02	-	6.58E-04	-
Paint Shop	-	-	-	-	-	-	2.25	-	1.18	-
	Total	**21.03**	**21.02**	**21.02**	**2.42**	**20.28**	**4.10**	**5.81**	**1.21**	**1,712**
	Significant Permit Revisions Limits	**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**25.00**	**100.00**	**25.00**	**-**

Appendix A: Emissions Summary
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

23) Total PTE of Emission Units Added

Emissions Units	Location	PM tons/yr	PM_{10} tons/yr	$PM_{2.5}$ tons/yr	SO_2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr	Combined HAPs tons/yr	GHGs tons/yr
Ten (10) laundry dryers	-	0.03	0.13	0.13	0.01	1.70	0.09	1.42	0.03	2,048
Three (3) laundry dryers	-	4.04E-03	0.02	0.02	1.28E-03	0.21	0.01	0.18	4.01E-03	257
Rotisserie Oven	-	3.26E-03	0.01	0.01	1.03E-03	0.17	9.45E-03	0.14	3.24E-03	207
Carousel Oven	-	2.24E-03	8.97E-03	8.97E-03	7.09E-04	0.12	6.49E-03	0.10	2.23E-03	143
Griddles	-	2.64E-03	0.01	0.01	8.35E-04	0.14	7.65E-03	0.12	2.63E-03	168
Tilt Skillet	-	1.17E-03	4.70E-03	4.70E-03	3.71E-04	0.06	3.40E-03	0.05	1.17E-03	75
Range	-	8.97E-04	3.59E-03	3.59E-03	2.83E-04	0.05	2.60E-03	0.04	8.91E-04	57
Space Heater	Training Building Garage	1.22E-03	4.90E-03	4.90E-03	3.86E-04	0.06	3.54E-03	0.05	1.22E-03	78
Space Heaters	Outside Warehouse	5.26E-03	0.02	0.02	1.66E-03	0.28	0.02	0.23	5.23E-03	334
Furnace	Exercise Room	1.43E-03	5.71E-03	5.71E-03	4.51E-04	0.08	4.13E-03	0.06	1.42E-03	91
Grizzly Wood Grinder	-	6.13	6.13	6.13	-	-	-	-	-	-
Six (6) Space Heaters	Laundry Room	8.57E-03	0.03	0.03	2.71E-03	0.45	0.02	0.38	8.51E-03	544
One (1) Furnace	Horse Barn	6.53E-04	2.61E-03	2.61E-03	2.06E-04	0.03	1.89E-03	0.03	6.48E-04	41
Park and Patio Shop	-	4.38	4.38	4.38	-	-	-	-	-	-
Pallet Shop	-	14.60	14.60	14.60	-	-	-	-	-	-
Fryer	Administrative Kitchen	1.45E-03	5.08E-03	5.08E-03	0.01	0.09	7.26E-03	0.05	-	93
Grill	Administrative Kitchen	3.00E-03	0.01	0.01	0.02	0.20	0.02	0.11	-	192
Boiler	Training Building	5.25E-03	0.02	0.02	0.04	0.34	0.03	0.20	-	336
Furnace	Labor 2	9.81E-03	0.02	0.02	0.35	0.10	1.67E-03	0.02	3.37E-05	2
Space Heater	Compost & Recycling Building	2.42E-03	8.47E-03	8.47E-03	0.02	0.16	0.01	0.09	-	155
Generator 1	-	0.04	0.04	0.04	0.04	0.43	0.05	0.12	4.91E-04	21
Generator 2	-	4.05E-04	8.28E-04	8.28E-04	2.51E-05	0.09	1.26E-03	0.16	1.37E-03	6
Generator 3	-	0.22	0.22	0.22	0.21	2.41	0.25	0.67	2.73E-03	116
Generator 4	-	0.22	0.22	0.22	0.21	2.41	0.25	0.67	2.73E-03	116
Generator 5	-	0.20	0.20	0.20	0.19	2.21	0.23	0.62	2.50E-03	106
Generator 6	-	0.03	0.03	0.03	0.03	0.32	0.03	0.09	3.64E-04	15
Generator 7	-	0.06	0.06	0.06	0.05	0.64	0.07	0.18	7.27E-04	31
Generator 8	-	0.22	0.22	0.22	0.21	2.41	0.25	0.67	2.73E-03	116
Generator 9	-	0.12	0.07	0.07	0.68	4.02	0.12	0.92	1.85E-03	195
Generators 10	-	0.13	0.13	0.13	0.12	1.41	0.15	0.39	1.59E-03	68
Generator 11	-	0.15	0.15	0.15	0.14	1.61	0.17	0.45	1.82E-03	77
Generator 12	-	0.13	0.13	0.13	0.12	1.41	0.15	0.39	1.59E-03	68
Welding operations	-	0.02	0.02	0.02	-	-	-	-	2.26E-03	-
Grinding and metal cutting operations	-	5.48E-05	2.46E-05	-	-	-	-	-	4.22E-06	-
Carpenter shop	-	4.87	4.87	4.87	-	-	-	-	-	-
Vehicle Maintenance Parts Washers	-	-	-	-	-	-	6.58E-02	-	6.58E-04	-
Paint Shop	-	-	-	-	-	-	2.25	-	1.18	-
	Total	31.61	31.79	31.79	2.44	23.63	4.29	8.63	1.27	5,755
	Significant Permit Revisions Limits	25	25	25	25	25	25	100	25	-

Emissions Calculations
Particulates and VOCs Emissions
From Paint Shop Surface Coating Operations

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Material		Weight % Volatile (H20 & Organics)	Density (Lb/Gal)	Weight % Water & Exempt Solvents	Weight % Organics	Volume % Water & Exempt Solvents	Volume % Non-Volatiles (solids)	Max Gal of Mat. (gal/hr)	Pounds VOC per gallon of coating less water & exempt solvents	Pounds VOC per gallon of coating	VOC Potential (ton/yr)	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Paint Shop	7-809	39.58%	7.80	0.0%	39.58%	0.0%	52.49%	0.17	3.09	3.09	2.25	0.00	5.88	100%

State Potential Emissions (tons/yr) 2.25 0.00

NOTES

The source provided that the maximum gallons of paint used per day is 1 gallon per day. The paint shop operates 6 hours, so the max gal of material per hour is 0.17 gal/hr.
The paint composition is from the paint with the highest VOC content, Product 7-809.
Transfer efficiency for the paint shop is 100%, based on the transfer efficiency of brush coating.
PM10 & PM2.5 emissions are each assumed equal to PM emissions
Note: The paint shop involves manual brush painting of the facility. Therefore, 326 IAC 6-3-2 particulate limitations do not apply.

METHODOLOGY

Paint Shop

Weight % Volatile (H20 & Organics) = 100% - Weight % Solids
Weight % Water & Exempt Solvents = Weight % Volatile (H20 & Organics) - Weight % Organics
Weight % Organics taken directly from MSDSs supplied by the source. Note that the maximum range % for all organics on the MSDS adds up to greater than 39.58%, so 39.58% was assumed.
Volume % Water & Exempt Solvents = 0.0% (from MSDS)
Volume % Non-Volatiles (solids) = 100% - Volume % Volatiles from the MSDS
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
VOC Potential (tons/yr) = Pounds of VOC per Gallon coating (lb/gal) * Max Gal of Material (gal/yr) * (1 ton/2000 lbs)
Particulate Potential (tons/yr) = (gal/yr) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)

Emissions Calculations
Hazardous Air Pollutant (HAP) Emissions
From Paint Shop Surface Coating Operations
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Material	Max Gal of Material (gal/hr)	Weight % Xylene	Weight % Cobalt Compounds	Weight % Ethylbenzene	Weight % Glycol Ethers	Xylene Emissions (tons/yr)	Cobalt Emissions (tons/yr)	Ethylbenzene Emissions (tons/yr)	Glycol Ether Emissions (tons/yr)
Paint Shop- See Coatings Below	0.167	5.00%	2.00%	1.00%	10.00%	0.28	0.11	0.06	0.73
				Potential Emissions (tons/yr)	Single HAP	0.28	0.11	0.06	0.73
					Combined HAPs	1.183			

NOTES
Single HAP emissions represent a worst-case composite of the coatings for each coating used at this source. Emissions were calculated for each single HAP using the density and weight % of the worst-case coating for that HAP.

METHODOLOGY
Single HAPS emission rate (tons/yr) = Density of worst-case coating (lb/gal) x Max Gal of Material (gal/hr) x Weight % HAP of worst-case coating x 8,760 hrs/yr x 1 ton/2000 lbs

Worst Case HAPs (from MSDS)

HAP	Coating	Content (%)	Density (lbs/gal)
Xylene	7-809	5%	7.80
Cobalt Compounds	7-809	2%	7.80
Ethylbenzene	7-809	1%	7.80
Glycol Ethers	90-374	10%	9.96

Emissions Calculations
VOCs, HAPs, and Particulates
From Parts Washers

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Location	Material	Density (Lb/Gal)	Weight % Volatile (H20 & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Max Gal of Mat. (gal/yr)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Vehicle Maintenance	Zep Dyna 143	6.58	100.00%	0.0%	100.0%	0.0%	0.00%	20.00	6.58	6.58	0.07	0.00	-	100%
Auto Maintenance Education	Zep Dyna 143	6.58	100.00%	0.0%	100.0%	0.0%	0.00%	20.00	6.58	6.58	0.07	0.00	-	100%
Labor 2	Zep Dyna 143	6.58	100.00%	0.0%	100.0%	0.0%	0.00%	30.00	6.58	6.58	0.10	0.00	-	100%
										Potential Emissions (tons/yr)	**0.23**	**0.00**		

*Note: The maximum gallons of material is based on the gallons of each solvent tank, assuming that each solvent tank is changed out once per year.

METHODOLOGY
Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Max Gal of Material (gal/yr) * (1 ton/2000 lbs)
PM10 and PM2.5 emissions are assumed equal to PM emissions.
PM/PM10 Potential Tons per Year = (gal/yr) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) * (1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

HAP Emission Calculations

Location	Material	Density (Lb/Gal)	Max Gal of Material (gal/yr)	Weight % Xylene	Xylene Emissions (ton/yr)
Vehicle Maintenance	Zep Dyna 143	6.58	20.00	1.00%	6.58E-04
Auto Maintenance Education	Zep Dyna 143	6.58	20.00	1.00%	6.58E-04
Labor 2	Zep Dyna 143	6.96	30.00	6.00%	6.26E-03
				Potential Emissions (tons/yr)	**7.58E-03**

NOTE
The Zep Dyna 143 consists of light aliphatic naptha (CAS 64742-88-7), aka Mineral Spirits, which contains 1% xylenes. Reference: Table 1. Default Organic HAP Mass Fraction for Solvents and Solvent Blends (Source: 40 CFR 63).

METHODOLOGY
HAPS emission rate (tons/yr) = Density (lb/gal) * Max Gal of Material (gal/yr) * Weight % HAP * 1 ton/2000 lbs

Emission Calculations for
Park & Patio Construction
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Information Provided by the Source		
Amount collected: 1 lb	1	lb
Hours collected: 1 hour	1	hr

Note: Emissions are uncontrolled, so sawdust was collected and weighed.

Uncontrolled PM/PM10/PM2.5 emissions = Amount of dust collected (lbs/collection) x (1 collection/No. of hours of operation)
= 1.0 pounds per hour (lb/hr)

Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr) = Uncontrolled PM/PM10/PM2.5 Emissions (lb/hr) x 8760 hr/yr x 1 ton/2,000 lbs
= 4.38 tons/yr

Emission Calculations for
Pallet Shop
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Information Provided by the Source		
Amount collected: 1 lb	3	lb
Hours collected: 1 hour	1	hr
Baghouse Control Eff (estimated)	90%	

Uncontrolled PM/PM10/PM2.5 emissions = Amount of dust collected (lbs/collection) x (1 collection/No. of hours of operation) / Control Efficiency
= 3.3 pounds per hour (lb/hr)

Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr) = Uncontrolled PM/PM10/PM2.5 Emissions (lb/hr) x 8760 hr/yr x 1 ton/2,000 lbs
= 14.60 tons/yr

Controlled PM/PM10/PM2.5 Emissions (tons/yr) = Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr) x (1-Control Efficiency)
= 1.46 tons/yr

Emission Calculations for
Carpenter Shop
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Information Provided by the Source		
Amount collected: 1 lb	1	lb
Hours collected: 1 hour	1	hr
Baghouse Control Eff (estimated	90%	

Uncontrolled PM/PM10/PM2.5 emissions = Amount of dust collected (lbs/collection) x (1 collection/No. of hours of operation) / Control Efficiency
= 1.1 pounds per hour (lb/hr)

Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr) = Uncontrolled PM/PM10/PM2.5 Emissions (lb/hr) x 8760 hr/yr x 1 ton/2,000 lbs
= 4.87 tons/yr

Controlled PM/PM10/PM2.5 Emissions (tons/yr) = Uncontrolled PM/PM10/PM2.5 Emissions (tons/yr) x (1-Control Efficiency)
= 0.49 tons/yr

Emissions Calculations
Grinding Operations
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

			Particulates				HAPs	
			Emission Factor **		Potential to Emit			
Process:	Max Throughput Rate*		PM	PM10/PM2.5	PM	$PM_{10}/PM_{2.5}$	Lead Content (%) ***	PTE of Lead (tons/year)
	(lbs/hr)	(tons iron/hr)	(lbs/ton)	(lbs/ton)	(tons/yr)	(tons/yr)		
3 Grinders	2.50	0.00125	0.01	0.0045	5.48E-05	2.46E-05	7.70%	4.22E-06
1 Metal Saw	0.17	0.00008	0.01	0.0045	4.38E-04	1.64E-06	7.70%	3.37E-05
		Total			**5.48E-05**	**2.46E-05**		**4.22E-06**

*The maximum metal throughput is based on 3 grinders grinding a maximum of 5 lbs/day and 1 metal saw cutting a maximum of 1 lb/day, with a work shift of 6 hours per day.

** Emission factors are from FIRE Volume II, Chapter 14, Grey Stone Iron Foundries - SCC 3-04-003-60 (July, 2001)

*** Lead Emission are based on the lab test conducted by Precision Process Division in Walkerton, Indiana
In the absence of valid PM2.5 Emission Factors, it is assumed that PM2.5 emissions = PM10 emissions.

Methodology

PTE PM/PM-10 (tons/year) = Max. Thorughput Rate (tons/hour) * Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs

PTE Lead (tons/year) = Max. Throughput Rate (tons/hour) * PM Emission Factor (lbs/ton) * 8760 hours/year * 1 ton/2000 lbs * Lead Content (%)

Emissions Calculations
Particulate Emissions from the
Biomass (Wood Chips) and Ash Handling Operations

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

	Biomass Unloading/Receiving	Biomass Headhouse and Internal Handling (legs, belts, distributor, etc)	Ash Internal Handling (auger, container)	Biomass Storage Bin (vent)
Throughput (tons/hr)	9.0	2.81	0.02	4.13

Unloading/Receiving								
Straight Truck			**Hopper Truck**			**Railcar**		
PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$	PM	PM_{10}	$PM_{2.5}$
0.18	0.059	0.01	0.035	0.0078	0.0013	0.032	0.0078	0.0013

Worst-case Emission Factors Representing this source =	PM =	0.18	PM_{10} =	0.059	$PM_{2.5}$ =	0.01

	Biomass Unloading/Receiving			Biomass Headhouse and Internal Handling (legs/belts, distributor, etc)			Ash Internal Handling (auger, container)			Biomass Storage bin (vent)		
	PM	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**	**PM**	**PM_{10}**	**$PM_{2.5}$**
Emission Factor (lbs/ton)	0.18	0.059	0.01	0.061	0.034	0.0058	2.2	2.2	2.2	0.025	0.0063	0.0011
Potential Emissions (tons/yr)	7.10	2.33	0.39	0.75	0.42	0.07	0.19	0.19	0.19	0.45	0.11	0.02
Controls (overall % efficiency)				**Baghouse**			**Cyclone**			**Baghouse**		
	0.00%	0.00%	0.00%	95.00%	95.00%	95.00%	75.00%	35.00%	35.00%	95.00%	95.00%	95.00%
Controlled Potential Emissions (tons/yr)	7.10	2.33	0.39	0.04	0.02	3.57E-03	0.05	0.13	0.13	0.02	0.01	9.94E-04

	PM	**PM10**	**PM2.5**
Total Uncontrolled Emissions (tons/yr)	**8.49**	**3.05**	**0.68**
Total Controlled Emissions (tons/yr)	**7.20**	**2.48**	**0.52**

Methodology
Emission factors are from AP-42 Table 9.9.1-1 Particulate Emission Factors for Grain Elevators (Supplement D, 5/98)
Potential Emissions (tons/yr) = Throughput (tons/hr) x Emission Facto (lbs/ton) x (8,760 hrs/yr) / (2000 lbs/ton)
Controlled Potential Emissions (tons/yr) = Potential Emissions (tons/yr) * (1-Control Efficiency)

Emissions Calculations
Particulate Emissions from
Grizzly Wood Grinder

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Maximum Raw Wood Capacity (tons/hr)	PM/ PM10/ PM2.5 Emission Factor (lb/ton)	PM/ PM10/ PM2.5 Uncontrolled Emissions (lb/hr)	PM/ PM10/ PM2.5 Uncontrolled Emissions (tons/yr)
4.00	0.350	1.4	6.13

Methodology
The grinder capacity is 4 tons per hour based on information provided by Putnamville.
Emission Factor is from AP-42 Table 10.3-1 Fourth Edition
Uncontrolled emissions (tons/yr) = Maximum Raw Wood Capacity (lbs/hr) / 1 ton/2000 lbs * Emission Factor (lb/ton) * 8760 (hr/yr) / 1 ton/2000 lbs
*Note: The engine powering the wood grinder is electric.

Emissions Calculations
Particulate and Hazardous Air Pollutant Emissions (HAPs)
from the Welding and Thermal Cutting
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

PROCESS WELDING	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)		HAPS (lbs/hr)
				$PM/PM_{10}/PM_{2.5}$	Mn	Ni	Cr	$PM/PM_{10}/PM_{2.5}$	Mn	
Metal Inert Gas (MIG)(carbon steel)	3	0.33		0.0055	0.0005			5.50E-03	5.00E-04	5.00E-04
Tungsten Inert Gas (TIG)(carbon steel)	2	0.017		0.0055	0.0005			1.83E-04	1.67E-05	1.67E-05

FLAME CUTTING	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./hr)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)		HAPS (lbs/hr)
				$PM/PM_{10}/PM_{2.5}$	Mn	Ni	Cr	$PM/PM_{10}/PM_{2.5}$	Mn	
Plasma**	1	1	4.0	0.0039	-	-	-	1.56E-05	-	-

EMISSION TOTALS

Potential Emissions lbs/hr	5.70E-03	5.17E-04	5.17E-04
Potential Emissions lbs/day	1.37E-01	1.24E-02	1.24E-02
Potential Emissions tons/year	2.50E-02	2.26E-03	2.26E-03

Notes:
There are 3 MIG welding stations, 2 TIG welding stations, and 1 plasma cutting torch in the Fabrication Shop. The MIG welding stations cut a maximum of 0.33 lbs/hr and the TIG welding stations cut a maximum of 0.017 lbs/hr. The plasma cutter cuts a maximum of 0.17 lbs/hr of steel (0.60 in^3/hr). The metal sizes vary, so it's estimated that the minimum thickness is 8 mm (0.3 inches), the maximum thickness is 1 inch, and the minimum width is 0.5 inch.

METHODOLOGY
*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.
**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculting the emissions.
Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)
Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)
Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day
Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.
PM=PM10=PM2.5

Large Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (>600 HP)
Maximum Input Rate (>4.2 MMBtu/hr)
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

ID	Location	kW	hp
Generator 9	Power House	500	670.5

Emissions calculated based on output rating (hp)

Output Horsepower Rating (hp)	670.5		
Maximum Hours Operated per Year	500	Maximum Diesel Fuel Usage (gal/yr)	17,126
Potential Throughput (hp-hr/yr)	335,250	Sulfur Content (S) of Fuel (% by weight)	0.50

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	7.00E-04	4.01E-04	4.01E-04	4.05E-03	2.40E-02	7.05E-04	5.50E-03
Potential Emission in tons/yr	0.12	0.07	0.07	0.68	4.02	0.12	0.92

*PM10 emission factor in lb/hp-hr was calculated using the emission factor in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Maximum Diesel Fuel Usage (gal/yr) = [Potential Throughput (hp-hr/yr) * (average brake specific fuel consumption of 7,000 Btu / hp-hr) * 1/(diesel heating value of 19,300 Btu/lb) * 1/(diesel fuel density of 7.1 lb / gal (AP-42 Tables 3.3-1 and 3.4.1))]

Hazardous Air Pollutants (HAPs)

	Pollutant						
	Benzene	Toluene	Xylene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	5.43E-06	1.97E-06	1.35E-06	5.52E-07	1.76E-07	5.52E-08	1.48E-06
Potential Emission in tons/yr	9.11E-04	3.30E-04	2.26E-04	9.26E-05	2.96E-05	9.25E-06	2.49E-04

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Potential Emission of Total HAPs (tons/yr)	**1.85E-03**

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.16E+00	6.35E-05	9.30E-06
Potential Emission in tons/yr	1.94E+02	1.06E-02	1.56E-03

Summed Potential Emissions in tons/yr	**194.46**
CO2e Total in tons/yr	**195.15**

Methodology

Emission Factors are from AP 42 (Supplement B 10/96) Tables 3.4-1 , 3.4-2, 3.4-3, and 3.4-4.
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Potential NOx Emissions = (335,250 hp-hr/yr) * (2.40 E-02 lb/hp-hr) / (2,000 lbs/ton) = 4.02 tons/yr
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).
CO2eq = (1.94E+02 tons/yr * 1) + (1.06E-02 tons/yr * 21) + (1.56 E-03 tons/yr * 310) = 195.15 tons/yr

Emission Calculations
Fugitive Dust Emissions - Paved Roads
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Paved Roads

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Tractor Trailers (entering facility) (one-way trip	3.0	1.0	3.0	30.0	90.0	2600	0.492	1.5	539.2
Tractor Trailers (leaving facility) (one-way trip)	3.0	1.0	3.0	30.0	90.0	2600	0.492	1.5	539.2
		Totals	**6.0**		**180.0**			**3.0**	**1078.4**

Average Vehicle Weight Per Trip =	30.0	tons/trip
Average Miles Per Trip =	0.49	miles/trip

The following calculations determine the amount of emissions created by paved roads, based on AP-42, Ch 13.2.1 (1/2011)

Parameter		PM	PM10	PM2.5	Source/Method
Ef =	particulate emission factor (lb/VMT)	2.79	0.56	0.14	= k*(sL^0.91)*(W^1.02), Ch. 13.2.1, eqn
k =	particle size multiplier (lb/VMT)	1.10E-02	2.20E-03	5.40E-04	Table 13.2.1-1
sL =	road surface silt loading (g/m2)	9.70	9.70	9.70	See Table 13.2.1-3 or 13.2.1-2
W =	average weight of vehicles traveling the road (tons)	30.00	30.00	30.00	Provided by the source
VMT/yr =	vehicle miles traveled per year	1078.41	1078.41	1078.41	Provided by the source
PTE =	Potential to Emit (ton/yr)	1.51	0.30	0.07	= Ef (lb/VMT) x VMT/yr x (1 ton/2000 lb)

Taking natural mitigation due to precipitation into consideration:

Parameter		PM	PM10	PM2.5	Source/Method
Eext =	particulate emission factor extrapolated for natural mitigation (lb/VMT)	2.55	0.51	0.13	= Ef*[1 - (P/4N)], Ch. 13.2.1, eqn (2)
P =	number of days in a year with at least 0.01 in of precipitation	125	125	125	Based on Figure 13.2.1-2
N =	number of days in a year	365	365	365	
PTE =	Potential to Emit (ton/yr)	1.38	0.28	0.07	= Eext (lb/VMT) x VMT/yr x (1 ton/2000 lb)

Criteria Pollutant and Hazardous Air Pollutant Emissions From
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
for Boilers #1 and #2

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Heat Input Capacity = 84.09 MMBtu/hr
Potential Throughput = 722.18 MMCF/yr

Location	Unit	MMBtu/hr
Power House	Boiler 1	42.00
Power House	Boiler 2	42.00
Power House	Boiler 1 Burner	0.045
Power House	Boiler 2 Burner	0.045
	Total	**84.09**

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.69	2.74	2.74	0.22	36.11	1.99	30.33

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
PM2.5 emission factor is filterable and condensable PM2.5 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

<u>HAPS Calculations</u>

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	**Total - Organics**
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	7.58E-04	4.33E-04	2.71E-02	6.50E-01	1.23E-03	6.79E-01

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	**Total - Metals**
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.81E-04	3.97E-04	5.06E-04	1.37E-04	7.58E-04	1.98E-03
					Total HAPs	**6.81E-01**
					Worst HAP	**6.50E-01**

The five highest organic and metal HAPs emission factors are provided above.

<u>Greenhouse Gas Calculations</u>

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	43,331	1	1
Summed Potential Emissions in tons/yr	43,332		
CO2e Total in tons/yr	43,595		

Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O

Criteria Pollutant and Hazardous Air Pollutant Emissions From
Fuel Combustion with Maximum Capacity < 100 MMBtu/hr
for Biomass-fired Boiler #3

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

The following calculations determine the uncontrolled and controlled emissions created from the combustion of Dry Wood and Wet Wood in Boiler #3.

Maximum Fuel Input Rate =	14.33	MMBtu/hr	HHV =	15.38	MMBtu/ton
Dry Wood Usage =	8,162	tons/yr			
Wet Wood Usage =	8,162	tons/yr			

Unlimited/Uncontrolled Emissions

	Emission Factor (units)		Uncontrolled PTE (tons/yr)			Controlled PTE (tons/yr)	
Criteria Pollutant	Dry Wood (lb/MMBtu)	Wet wood (lb/MMBtu)	Dry Wood (tons/yr)	Wet wood (tons/yr)	**Worse Case Fuel (tons/yr)**	**Control Efficiency**	**Worse Case Fuel (tons/yr)**
PM	0.40	0.33	25.11	20.71	**25.11**	75%	**6.28**
PM10 *	0.377	0.307	23.66	19.27	**23.66**	35%	**15.38**
PM2.5 *	0.327	0.267	20.52	16.76	**20.52**	35%	**13.34**
SO2	0.025	0.025	1.57	1.57	**1.57**	0%	**1.57**
NOx	0.49	0.22	30.76	13.81	**30.76**	0%	**30.76**
VOC	0.013	0.013	0.82	0.82	**0.82**	0%	**0.82**
CO **	0.6	0.6	37.66	37.66	**37.66**	0%	**37.66**

Hazardous Air Pollutant					
Criteria Pollutant	Dry Wood (lb/MMBtu)	Wet wood (lb/MMBtu)	Dry Wood (tons/yr)	Wet wood (tons/yr)	**Worse Case Fuel (tons/yr)**
Acetaldehyde	8.3E-04	8.30E-04	5.2E-02	5.95E-09	**5.2E-02**
Acrolein	4.0E-03	4.00E-03	2.5E-01	2.87E-08	**2.5E-01**
Benzene	4.2E-03	4.20E-03	2.6E-01	3.01E-08	**2.6E-01**
Formaldehyde	4.4E-03	4.40E-03	2.8E-01	3.15E-08	**2.8E-01**
HCL	1.9E-02	1.90E-02	1.2E+00	1.36E-07	**1.2E+00**
Styrene	1.9E-03	1.90E-03	1.2E-01	1.36E-08	**1.2E-01**
Toluene	9.2E-04	9.20E-04	5.8E-02	6.59E-09	**5.8E-02**
		Total HAPs =	**2.212**	**2.53E-07**	**2.212**
		Worst Single HAP =	**1.193 (HCl)**	**1.36E-07**	**1.193 (HCl)**

Greenhouse Gases			
	CO2	CH4	N2O
Emission Factor in kg/mmBtu from 40 CFR 98	**	0.03	
Emission Factor in lb/mmBtu from AP-42			0.013
Potential Emission in tons/yr	**	4.4	0.8
Summed Potential Emissions in tons/yr		5	**
CO2e Total in tons/yr		346	**

Methodology

The biomass boiler is controlled by a cyclone with an estimated control efficiency of 90%.
MMBtu = 1,000,000 Btu (or 1 MMBtu/10^6 Btu)
HHV = Higher Heating Value of wood fuel (MMBtu/ton). Fuel Heating Values from 40 CFR Part 98 Subpart C, Tables C-1 and 2.
Wet wood is considered to be greater than or equal to 20% moisture content. Dry wood is considered to be less than 20% moisture content.
*The PM10 and PM2.5 emission factors include the condensible PM emission factor of 0.017 lb/MMBtu, measured by EPA Method 202 (or equivalent) and the appropriate filterable PM emission factor, measured by EPA Method 5 (or equivalent). The PM emission factor is filterable PM measured by EPA Method 5 (or equivalent).
**The CO emission factor is for stokers and dutch ovens/fuel cells. Change the emission factor to 0.17 lb/MMBtu if the calculations are for a fluidized bed combustor.
To convert from Maximum Fuel Input Rate (MMBtu/hr) to Maximum Wood Usage (tons/hr):
Equivalent Material Usage (tons/yr) = Maximum Fuel Input Rate (MMBtu/hr) * 1/Higher Heating Value (HHV) of wood fuel (MMBtu/ton) * 8760 hrs/yr
Emission Factors are from AP-42 Chapter 1.6 (revised 3/02), SCCs #1-0X-009-YY where X = 1 for utilities, 2 for industrial, and 3 for commercial/institutional;
Y = 01 for bark-fired boilers, 02 for bark and wet wood-fired boilers, 03 for wet wood-fired boilers, and 08 for dry wood-fired boilers
Uncontrolled Emissions (tons/yr) = Maximum Fuel Input Rate (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760hrs/yr x 1ton/2000lbs
Uncontrolled NOx Emissions = (14.33 MMBtu/hr) x (0.49 lb/MMBtu) x (8760 hrs/yr) / (2000 lbs/ton) = 30.76 tons/yr
Controlled Emissions (tons/yr) = Uncontrolled Emissions (tons/yr) * (1 - Control Efficiency)
To convert from tons/hr capacity to MMBtu/hr capacity:
Heat Input Capacity (MMBtu/hr) = Capacity (tons/hr) x Higher Heating Value of wood fuel (Btu/lb) x (1 MMBtu/10^6 Btu/) x 2000 lbs/1 ton
CO2 and CH4 Emission Factors from Tables C-1 and 2 of 40 CFR Part 98 Subpart C. N2O emission factor from AP-43 Chapter 1.6 (revised 3/02).
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (kg/mmBtu) x 2.20462 lb/kg x 8760 hrs/yr /2,000 lb/ton
Potential Emission (tons/yr) = Heat Input Capacity mmBtu/hr x Emission Factor (lb/mmBtu) x 8760 hrs/yr /2,000 lb/ton
CO2e (tons/yr) = CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).**
** On July 1, 2011 EPA stayed the counting of CO2 emissions from Bioenergy and other Biogenic Sources.

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Natural Gas-Fired Combustion Equipment
MMBtu/hr <100

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

				Pollutant						
			Emission Factor in lb/MMCF	**PM***	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
				1.9	7.6	7.6	0.6	100.0	5.5	84.0
								**see below		
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr							
Laundry	6 Space Heaters	1.05	9.02	8.57E-03	3.43E-02	3.43E-02	2.71E-03	4.51E-01	2.48E-02	3.79E-01
Laundry	10 Laundry Dryers	3.95	33.92	3.22E-02	1.29E-01	1.29E-01	1.02E-02	1.70E+00	9.33E-02	1.42E+00
Laundry	3 Laundry Dryers	0.50	4.25	4.04E-03	1.62E-02	1.62E-02	1.28E-03	2.13E-01	1.17E-02	1.79E-01
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	3.26E-03	1.31E-02	1.31E-02	1.03E-03	1.72E-01	9.45E-03	1.44E-01
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	2.24E-03	8.97E-03	8.97E-03	7.09E-04	1.18E-01	6.49E-03	9.92E-02
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	2.64E-03	1.06E-02	1.06E-02	8.35E-04	1.39E-01	7.65E-03	1.17E-01
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	1.17E-03	4.70E-03	4.70E-03	3.71E-04	6.18E-02	3.40E-03	5.19E-02
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	8.97E-04	3.59E-03	3.59E-03	2.83E-04	4.72E-02	2.60E-03	3.97E-02
Training Building Garage	1 Space Heater	0.15	1.29	1.22E-03	4.90E-03	4.90E-03	3.86E-04	6.44E-02	3.54E-03	5.41E-02
Outside Warehouse	15 Space Heaters	0.65	5.54	5.26E-03	2.10E-02	2.10E-02	1.66E-03	2.77E-01	1.52E-02	2.33E-01
Exercise Room	1 Luxaire Furnace	0.18	1.50	1.43E-03	5.71E-03	5.71E-03	4.51E-04	7.51E-02	4.13E-03	6.31E-02
Horse Barn	1 Dayton Furnace	0.08	0.69	6.53E-04	2.61E-03	2.61E-03	2.06E-04	3.44E-02	1.89E-03	2.89E-02
	Potential Emission in tons/yr	7.80	66.97	0.06	0.25	0.25	0.02	3.35	0.18	2.81

*PM emission factor is filterable PM only. PM10 & PM2.5 emission factors are filterable and condensable fractions combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

				HAPs - Organics					
			Emission Factor in lb/MMcf	**Benzene**	**Dichlorobenzene**	**Formaldehyde**	**Hexane**	**Toluene**	**Total - Organics**
				2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr						
Laundry	6 Space Heaters	1.05	9.02	9.47E-06	5.41E-06	3.38E-04	8.12E-03	1.53E-05	8.48E-03
Laundry	10 Laundry Dryers	3.95	33.92	3.56E-05	2.04E-05	1.27E-03	3.05E-02	5.77E-05	3.19E-02
Laundry	3 Laundry Dryers	0.50	4.25	4.46E-06	2.55E-06	1.59E-04	3.83E-03	7.23E-06	4.00E-03
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	3.61E-06	2.06E-06	1.29E-04	3.09E-03	5.84E-06	3.23E-03
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	2.48E-06	1.42E-06	8.86E-05	2.13E-03	4.02E-06	2.22E-03
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	2.92E-06	1.67E-06	1.04E-04	2.50E-03	4.73E-06	2.62E-03
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	1.30E-06	7.42E-07	4.64E-05	1.11E-03	2.10E-06	1.16E-03
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	9.92E-07	5.67E-07	3.54E-05	8.50E-04	1.61E-06	8.89E-04
Training Building Garage	1 Space Heater	0.15	1.29	1.35E-06	7.73E-07	4.83E-05	1.16E-03	2.19E-06	1.21E-03
Outside Warehouse	15 Space Heaters	0.65	5.54	5.82E-06	3.32E-06	2.08E-04	4.99E-03	9.42E-06	5.21E-03
Exercise Room	1 Luxaire Furnace	0.18	1.50	1.58E-06	9.02E-07	5.64E-05	1.35E-03	2.56E-06	1.41E-03
Horse Barn	1 Dayton Furnace	0.08	0.69	7.21E-07	4.12E-07	2.58E-05	6.18E-04	1.17E-06	6.46E-04
	Potential Emission in tons/yr	7.80	66.97	7.03E-05	4.02E-05	2.51E-03	6.03E-02	1.14E-04	**6.301E-02**

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Natural Gas-Fired Combustion Equipment
MMBtu/hr <100

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Natural Gas-Fired Combustion Equipment
MMBtu/hr <100

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
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Date: April 30, 2008

					HAPs - Metals				
			Emission Factor in lb/MMcf	**Lead**	**Cadmium**	**Chromium**	**Manganese**	**Nickel**	**Total - Metals**
				5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr						
Laundry	6 Space Heaters	1.05	9.02	2.25E-06	4.96E-06	6.31E-06	1.71E-06	9.47E-06	2.47E-05
Laundry	10 Laundry Dryers	3.95	33.92	8.48E-06	1.87E-05	2.37E-05	6.45E-06	3.56E-05	9.30E-05
Laundry	3 Laundry Dryers	0.50	4.25	1.06E-06	2.34E-06	2.98E-06	8.08E-07	4.46E-06	1.16E-05
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	8.59E-07	1.89E-06	2.40E-06	6.53E-07	3.61E-06	9.41E-06
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	5.90E-07	1.30E-06	1.65E-06	4.49E-07	2.48E-06	6.47E-06
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	6.96E-07	1.53E-06	1.95E-06	5.29E-07	2.92E-06	7.62E-06
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	3.09E-07	6.80E-07	8.66E-07	2.35E-07	1.30E-06	3.39E-06
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	2.36E-07	5.20E-07	6.61E-07	1.79E-07	9.92E-07	2.59E-06
Training Building Garage	1 Space Heater	0.15	1.29	3.22E-07	7.09E-07	9.02E-07	2.45E-07	1.35E-06	3.53E-06
Outside Warehouse	15 Space Heaters	0.65	5.54	1.38E-06	3.05E-06	3.88E-06	1.05E-06	5.82E-06	1.52E-05
Exercise Room	1 Luxaire Furnace	0.18	1.50	3.76E-07	8.27E-07	1.05E-06	2.86E-07	1.58E-06	4.12E-06
Horse Barn	1 Dayton Furnace	0.08	0.69	1.72E-07	3.78E-07	4.81E-07	1.31E-07	7.21E-07	1.88E-06
	Potential Emission in tons/yr	7.80	66.97	1.67E-05	3.68E-05	4.69E-05	1.27E-05	7.03E-05	**1.84E-04**

The five highest organic and metal HAPs emission factors are provided above.

Total HAPs	**6.32E-02**
Worst HAP	**6.03E-02**

				Greenhouse Gas				
			Emission Factor in lb/MMCF	CO2	CH4	N2O	Potential Emissions in tons/yr	CO2e Total in tons/yr
				120,000	2.3	2.2		
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr					
Laundry	6 Space Heaters	1.05	9.02	541	1.04E-02	9.92E-03	5.41E+02	544
Laundry	10 Laundry Dryers	3.95	33.92	2,035	3.90E-02	3.73E-02	2.04E+03	2,048
Laundry	3 Laundry Dryers	0.50	4.25	255	4.89E-03	4.68E-03	2.55E+02	257
Dining Hall Kitchen	1 Lucks Rotisserie Oven	0.40	3.44	206	3.95E-03	3.78E-03	2.06E+02	207
Dining Hall Kitchen	1 Lucks Carousel Oven	0.28	2.36	142	2.72E-03	2.60E-03	1.42E+02	143
Dining Hall Kitchen	2 Vulcan Griddles	0.32	2.78	167	3.20E-03	3.06E-03	1.67E+02	168
Dining Hall Kitchen	1 Groen Tilt Skillet	0.14	1.24	74	1.42E-03	1.36E-03	7.42E+01	75
Dining Hall Kitchen	1 U.S. Range	0.11	0.94	57	1.09E-03	1.04E-03	5.67E+01	57
Training Building Garage	1 Space Heater	0.15	1.29	77	1.48E-03	1.42E-03	7.73E+01	78
Outside Warehouse	15 Space Heaters	0.65	5.54	332	6.37E-03	6.09E-03	3.32E+02	334
Exercise Room	1 Luxaire Furnace	0.18	1.50	90	1.73E-03	1.65E-03	9.02E+01	91
Horse Barn	1 Dayton Furnace	0.08	0.69	41	7.90E-04	7.56E-04	4.12E+01	41
	Potential Emission in tons/yr	7.80	66.97	4018.26	0.08	0.07	4,018	4,043

Methodology
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-01-006-01, 1-01-006-04 (AP-42 Supplement D 3/98)
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Potential NOx Emissions = (68.31 MMCF/yr) * (100 lbs/MMCF) / (2000 tons/yr) = 3.42 tons/yr
CO2 eq (tons/yr) = (CO2 eq factor) x Emissions (tons/yr)

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Propane-Fired Combustion Equipment
MMBtu/hr <100

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

				Pollutant						
			Emission Factor in lb/kgal	**PM***	**PM10***	**PM2.5**	**SO_2**	**NOx**	**VOC**	**CO**
				0.2	0.7	0.7	1.50	13.0	1.0	7.5
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput kgal/yr							
Admin Kitchen	1 Pitco Frialater	0.150	14.52	1.45E-03	5.08E-03	5.08E-03	1.09E-02	9.44E-02	7.26E-03	5.44E-02
Admin Kitchen	1 Garland Grill	0.310	30.01	3.00E-03	1.05E-02	1.05E-02	2.25E-02	1.95E-01	1.50E-02	1.13E-01
Training Building	1 Weil McLain boiler	0.5426	52.52	5.25E-03	1.84E-02	1.84E-02	3.94E-02	3.41E-01	2.63E-02	1.97E-01
Compost & Recycling Building	1 Space Heater	0.250	24.20	2.42E-03	8.47E-03	8.47E-03	1.81E-02	1.57E-01	1.21E-02	9.07E-02
	Potential Emission in tons/yr	1.253	121.25	0.01	0.04	0.04	0.09	0.79	0.06	0.45

*PM emission factor is filterable PM only. PM emissions are stated to be all less than 10 microns in aerodynamic equivalent diameter, footnote in Table 1.5-1, therefore PM10 is based on the filterable and condensable PM

** No direct PM2.5 emission factor was given. Direct PM2.5 is a subset of PM10. If one assumes all PM10 to be all direct PM2.5, then a worst case assumption of direct PM2.5 can be made.

**The VOC value given is TOC. The methane emission factor is 0.2 lb/kgal.

				Greenhouse Gas				
			Emission Factor in lb/kgal	CO2	CH4	N2O	Summed Potential Emissions in	CO2e Total in tons/yr
				12,500	0.2	0.9		
Location	**Equipment Name**	Heat Input Capacity MMBtu/hr	Potential Throughput kgal/yr					
Admin Kitchen	1 Pitco Frialater	0.150	14.52	91	1.45E-03	6.53E-03	91	93
Admin Kitchen	1 Garland Grill	0.310	30.01	188	3.00E-03	1.35E-02	188	192
Training Building	1 Weil McLain boiler	0.5426	52.52	328	5.25E-03	2.36E-02	328	336
Compost & Recycling Building	1 Space Heater	0.250	24.20	151	2.42E-03	1.09E-02	151	155
	Potential Emission in tons/yr	1.253	121.25	758	1.21E-02	5.46E-02	758	775

Sulfur content is based on the content for commercial grade propane.

Methodology

1 gallon of propane has a heating value of 90,500 Btu (use this to convert emission factors to an energy basis for propane)-Source: AP-42 Appendix A
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.0905 MMBtu
Emission Factors are from AP-42 Chapter 1.5, Table 1.5-1.
Potential Emission (tons/yr) = Throughput (kgals/yr) x Emission Factor (lb/kgal) / 2,000 lb/ton
Potential NOx Emissions = (121.25 kgal/yr) * (13.0 lbs/kgal) / (2000 lbs/ton) = 0.79 tons/yr
CO2 eq (tons/yr) = (CO2 eq factor) x Emissions (tons/yr)

Emissions Calculations
Criteria Pollutant, HAPs and GHGs Emissions from
Diesel-Fired Combustion Equipment
MMBtu/hr <100

Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

Location	Equipment Name	gal/hr
Labor 2	1 Diesel Furnace @ 1.12 gal/hr	1.120
	Total	**1.120**

Potential Throughput gal/hr	Heat Input Capacity MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur
1.120	0.1568	9.8112	0.5

	Pollutant						
	PM*	PM10*	PM2.5**	SO2	NOx	VOC	CO
Emission Factor in lb/kgal	2.0	3.3	3.3	71 *(142.0S)*	20.0	0.34	5.0
Potential Emission in tons/yr	9.81E-03	1.62E-02	1.62E-02	3.48E-01	9.81E-02	1.67E-03	2.45E-02

	HAPs - Metals				
	Arsenic	Beryllium	Cadmium	Chromium	Lead
Emission Factor in lb/mmBtu	4.0E-06	3.0E-06	3.0E-06	3.0E-06	9.0E-06
Potential Emission in tons/yr	2.75E-06	2.06E-06	2.06E-06	2.06E-06	6.18E-06

	HAPs - Metals (continued)			
	Mercury	Manganese	Nickel	Selenium
Emission Factor in lb/mmBtu	3.0E-06	6.0E-06	3.0E-06	1.5E-05
Potential Emission in tons/yr	2.06E-06	4.12E-06	2.06E-06	1.03E-05
			Total HAPs:	3.37E-05

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/kgal	22,300	0.22	0.26
Potential Emission in tons/yr	2	0	0
Summed Potential Emissions in tons/yr	2		
CO2e Total in tons/yr	2		

Methodology

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Heat Input Capacity (MMBtu/hr) = Potential Throughput (gal/hr) x 0.140 MMBtu per gal
Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, 1.3-3, 1.3-8, and 1.3-12 (SCC 1-03-005-01/02/03) Supplement E 9/98 (see erata file)
*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal. PM10 is based on the filterable and condensable PM emission factors.
** No direct PM2.5 emission factor was given. Direct PM2.5 is a subset of PM10. If one assumes all PM10 to be all direct PM2.5, then a worst case assumption of direct PM2.5 can be made
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
Potential NOx Emissions (tons/yr) = (9.8112 kgal/yr) * (20.0 lbs/kgal) / (2,000 lbs/ton) = 0.10 tons/yr
CO2 eq (tons/yr) = (CO2 eq factor) x Emissions (tons/yr)
No data was available in AP-42 for organic HAPs.
Potential Emissions (tons/year) = Throughput (mmBtu/hr)*Emission Factor (lb/mmBtu)*8,760 hrs/yr / 2,000 lb/ton
The CO2 Emission Factor for #1 Fuel Oil is 21500. The CO2 Emission Factor for #2 Fuel Oil is 22300.
Emission Factors are from AP 42, Tables 1.3-3, 1.3-8, and 1.3-12 (SCC 1-03-005-01/02/03) Supplement E 9/99 (see erata file)
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential

Emission Calculations
Internal Combustion Engines - Natural Gas Fuel
4 - Stroke Rich-Burn Engine
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

ID	Location	kW	MMBtu/hr
Generator 2	Building Maintenance	50	0.17065

Emissions calculated based on output rating (hp)

Maximum Heat Input Capacity (MMBtu/hr)	0.17
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	85.325
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.08

	Pollutant						
	PM*	**PM10***	**direct PM2.5***	**SO2**	**NOx**	**VOC**	**CO**
Emission Factor in lb/MMBtu	9.50E-03	1.94E-02	1.94E-02	5.88E-04	2.21E+00	2.96E-02	3.72E+00
Potential Emission in tons/yr	4.05E-04	8.28E-04	8.28E-04	2.51E-05	9.43E-02	1.26E-03	1.59E-01

* PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM. PM2.5 emission factor is filterable PM2.5 + condensable PM.
Heat Input Capacity (MMBtu/hr) = Rating (kW) * (3.413*10^3 Btu/kW) / (10^6 Btu/MMBtu)

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor	Potential
Acetaldehyde	2.79E-03	1.19E-04
Acrolein	2.63E-03	1.12E-04
Benzene	1.58E-03	6.74E-05
1,3-Butadiene	6.63E-04	2.83E-05
Formaldehyde	2.05E-02	8.75E-04
Methanol	3.06E-03	1.31E-04
Total PAH**	1.41E-04	6.02E-06
Toluene	5.58E-04	2.38E-05
Xylene	1.95E-04	8.32E-06
	Total	**1.37E-03**

HAP pollutants consist of the nine highest HAPs included in AP-42 Table 3.2-3.
**PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

	Greenhouse Gas (GHG)		
Greenhouse Gases (GHGs)	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110	1.25	
Emission Factor in lb/MMcf**			2.2
Potential Emission in tons/yr	5	0	0
Summed Potential Emissions in tons/yr	5		
CO2e Total in tons/yr	6		

Methodology
Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-3
Potential Fuel Usage (MMBtu/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operating per Year (hr/yr)]
Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]
*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2
**The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]
For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (3

Small Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)
Maximum Input Rate (<=4.2 MMBtu/hr)
Company Name: Putnamville Correctional Facility
Address City IN Zip: 1500 & 1946 W US 40 Greencastle, Indiana 46135
MSOP: M133-33057-00005
Reviewer: Julie Alexander
Date: April 30, 2008

		Maximum Hours Operated per Year	500	Pollutant						
			Emission Factor in lb/hp-hr	**PM***	**PM10***	**direct PM2.5***	**SO2**	**NOx**	**VOC**	**CO**
				2.20E-03	2.20E-03	2.20E-03	2.05E-03	2.40E-02	2.51E-03	6.68E-03
ID	**Location**	**kW**	**hp**							
Generator 1	Admin Building	54	72.4	3.98E-02	3.98E-02	3.98E-02	3.71E-02	4.34E-01	4.55E-02	1.21E-01
Generator 3	Dorm 10, 11, 12	300	402.3	2.21E-01	2.21E-01	2.21E-01	2.06E-01	2.41E+00	2.53E-01	6.72E-01
Generator 4	Dorm 17,18	300	402.3	2.21E-01	2.21E-01	2.21E-01	2.06E-01	2.41E+00	2.53E-01	6.72E-01
Generator 5	Dorm 13-16	275	368.8	2.03E-01	2.03E-01	2.03E-01	1.89E-01	2.21E+00	2.32E-01	6.16E-01
Generator 6	High Mast	40	53.6	2.95E-02	2.95E-02	2.95E-02	2.75E-02	3.22E-01	3.37E-02	8.96E-02
Generator 7	MSU	80	107.3	5.90E-02	5.90E-02	5.90E-02	5.50E-02	6.44E-01	6.74E-02	1.79E-01
Generator 8	PDR	300	402.3	2.21E-01	2.21E-01	2.21E-01	2.06E-01	2.41E+00	2.53E-01	6.72E-01
Generator 10	Power House	175	234.7	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.41E+00	1.47E-01	3.92E-01
Generator 11	Store Room	200	268.2	1.48E-01	1.48E-01	1.48E-01	1.37E-01	1.61E+00	1.69E-01	4.48E-01
Generator 12	WWTP	175	234.7	1.29E-01	1.29E-01	1.29E-01	1.20E-01	1.41E+00	1.47E-01	3.92E-01
Potential Emission in tons/yr		1899	2546.6	1.40	1.40	1.40	1.31	15.28	1.60	4.25

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**NOx emission factor: uncontrolled = 0.024 lb/hp-hr, controlled by ignition timing retard = 0.013 lb/hp-hr

Hazardous Air Pollutants (HAPs)

				Pollutant								
			Emission Factor in lb/hp-hr****	**Benzene**	**Toluene**	**Xylene**	**1,3-Butadiene**	**Formaldehyde**	**Acetaldehyde**	**Acrolein**	**Total PAH HAPs*** **	**Potential Emission of Total HAPs (tons/yr)**
				6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06	
ID	**Location**	**kW**	**hp**									
Generator 1	Admin Building	54	72.4	1.18E-04	5.18E-05	3.61E-05	4.95E-06	1.50E-04	9.72E-05	1.17E-05	2.13E-05	4.91E-04
Generator 3	Dorm 10, 11, 12	300	402.3	6.57E-04	2.88E-04	2.01E-04	2.75E-05	8.31E-04	5.40E-04	6.51E-05	1.18E-04	2.73E-03
Generator 4	Dorm 17,18	300	402.3	6.57E-04	2.88E-04	2.01E-04	2.75E-05	8.31E-04	5.40E-04	6.51E-05	1.18E-04	2.73E-03
Generator 5	Dorm 13-16	275	368.8	6.02E-04	2.64E-04	1.84E-04	2.52E-05	7.62E-04	4.95E-04	5.97E-05	1.08E-04	2.50E-03
Generator 6	High Mast	40	53.6	8.76E-05	3.84E-05	2.68E-05	3.67E-06	1.11E-04	7.20E-05	8.68E-06	1.58E-05	3.64E-04
Generator 7	MSU	80	107.3	1.75E-04	7.68E-05	5.35E-05	7.34E-06	2.22E-04	1.44E-04	1.74E-05	3.15E-05	7.27E-04
Generator 8	PDR	300	402.3	6.57E-04	2.88E-04	2.01E-04	2.75E-05	8.31E-04	5.40E-04	6.51E-05	1.18E-04	2.73E-03
Generator 10	Power House	175	234.7	3.83E-04	1.68E-04	1.17E-04	1.61E-05	4.85E-04	3.15E-04	3.80E-05	6.90E-05	1.59E-03
Generator 11	Store Room	200	268.2	4.38E-04	1.92E-04	1.34E-04	1.84E-05	5.54E-04	3.60E-04	4.34E-05	7.89E-05	1.82E-03
Generator 12	WWTP	175	234.7	3.83E-04	1.68E-04	1.17E-04	1.61E-05	4.85E-04	3.15E-04	3.80E-05	6.90E-05	1.59E-03
Potential Emission in tons/yr		1899	2546.6	4.16E-03	1.82E-03	1.27E-03	1.74E-04	5.26E-03	3.42E-03	4.12E-04	7.49E-04	**0.02**

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

Green House Gas Emissions (GHG)

				Pollutant			**Summed Potential Emissions in tons/yr**	**CO2e Total in tons/yr**
			Emission Factor in lb/hp-hr	**CO2**	**CH4**	**N2O**		
				1.15E+00	4.63E-05	9.26E-06		
ID	**Location**	**kW**	**hp**					
Generator 1	Admin Building	54	72.4	21	8.38E-04	1.68E-04	21	21
Generator 3	Dorm 10, 11, 12	300	402.3	116	4.66E-03	9.31E-04	116	116
Generator 4	Dorm 17,18	300	402.3	116	4.66E-03	9.31E-04	116	116
Generator 5	Dorm 13-16	275	368.8	106	4.27E-03	8.54E-04	106	106
Generator 6	High Mast	40	53.6	15	6.21E-04	1.24E-04	15	15
Generator 7	MSU	80	107.3	31	1.24E-03	2.48E-04	31	31
Generator 8	PDR	300	402.3	116	4.66E-03	9.31E-04	116	116
Generator 10	Power House	175	234.7	67	2.72E-03	5.43E-04	67	68
Generator 11	Store Room	200	268.2	77	3.10E-03	6.21E-04	77	77
Generator 12	WWTP	175	234.7	67	2.72E-03	5.43E-04	67	68
Potential Emission in tons/yr		1899	2546.559	732	2.95E-02	5.89E-03	**732**	**735**

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
Potential NOx Emissions = (1,273,280 hp-hr/yr) * (0.0310 lb/hp-hr) / (2,000 lbs/ton) = 19.74 tons/yr
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).
CO2eq = (7.32E+02 tons/yr * 1) + (2.95E-02 tons/yr * 21) + (5.89E-03 tons/yr * 310) = 734.58 tons/yr

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.
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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

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TO: Mike Riley
Putnamville Correctional Facility
1946 W US Hwy 40
Greencastle, IN 46135

DATE: November 14, 2013

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
MSOP Renewal
133-33057-00005

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Katherine Holcomb / August Mack Environmental, Inc.
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 6/13/2013

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Michael R. Pence
Governor

Thomas W. Easterly
Commissioner

November 14, 2013

TO: Putnam County Public Library

From: Matthew Stuckey, Branch Chief
Permits Branch
Office of Air Quality

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: Putnamville Correctional Facility
Permit Number: 133-33057-00005

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 6/13/2013

Mail Code 61-53

IDEM Staff	AWELLS 11/14/2013 Putnamville Correctional Facility 133-33057-00005 Final			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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2		Putnam County Commissioners One West Washington Street Greencastle IN 46135 *(Local Official)*									
3		Putnam Co Public Library 103 E Poplar Street Greencastle IN 46135-0116 *(Library)*									
4		Putnam County Health Department P.O. Box 507 Greencastle IN 46135-0507 *(Health Department)*									
5		Mr. Richard Monday 545 E. Margaret Dr. Terre Haute IN 47801 *(Affected Party)*									
6		J.P. Roehm PO Box 303 Clinton IN 47842 *(Affected Party)*									
7		Katherine Holcomb August Mack Environmental, Inc. 1302 N. Meridian Street, Suite 300 Indianapolis IN 46202 *(Consultant)*									
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