

Appendix I-1: List of Insignificant Emissions Units and/or Activities.

Green Circle Bio Energy, Inc.
Cottondale Wood Pellet Plant

Title V Operation Permit Revision No.: 0630058-013-AV
Facility ID No.: 0630058

The facilities, emissions units, or pollutant-emitting activities listed in Rule 62-210.300(3)(a), F.A.C., Categorical Exemptions, are exempt from the permitting requirements of Chapters 62-210 and 62-4, F.A.C.; provided, however, that exempt emissions units shall be subject to any applicable emission limiting standards and the emissions from exempt emissions units or activities shall be considered in determining the potential emissions of the facility containing such emissions units. Emissions units and pollutant-emitting activities exempt from permitting under Rule 62-210.300(3)(a), F.A.C., shall not be exempt from the permitting requirements of Chapter 62-213, F.A.C., if they are contained within a Title V source; however, such emissions units and activities shall be considered insignificant for Title V purposes provided they also meet the criteria of Rule 62-213.430(6)(b), F.A.C. No emissions unit shall be entitled to an exemption from permitting under Rule 62-210.300(3)(a), F.A.C., if its emissions, in combination with the emissions of other units and activities at the facility, would cause the facility to emit or have the potential to emit any pollutant in such amount as to make the facility a Title V source.

The below listed emissions units and/or activities are considered insignificant pursuant to Rule 62-213.430(6), F.A.C.

Brief Description of Emissions Units and/or Activities

1. Diesel fire pump and associated diesel fuel storage tank.
2. Debarking and green wood chipping equipment and conveyance systems.
3. Lubricant storage vessels.
4. Maintenance activities including painting, degreasing, welding, etc.
5. Portable diesel-fired air compressors.
6. Landscaping maintenance equipment.
7. Furnace ash collection and storage.
8. Fugitive PM and VOC emissions from the wood yard, fuel storage pile, and green wood storage pile.
9. Grinding and pelleting wood storage bins.
10. Propane storage tanks.
11. Enclosed wood chip, ground wood, and pellet conveyance systems

APPENDIX SS-1, STACK SAMPLING FACILITIES (version dated 10/07/96)

Stack Sampling Facilities Provided by the Owner of an Emissions Unit. This section describes the minimum requirements for stack sampling facilities that are necessary to sample point emissions units. Sampling facilities include sampling ports, work platforms, access to work platforms, electrical power, and sampling equipment support. Emissions units must provide these facilities at their expense. All stack sampling facilities must meet any Occupational Safety and Health Administration (OSHA) Safety and Health Standards described in 29 CFR Part 1910, Subparts D and E.

(a) Permanent Test Facilities. The owner or operator of an emissions unit for which a compliance test, other than a visible emissions test, is required on at least an annual basis, shall install and maintain permanent stack sampling facilities.

(b) Temporary Test Facilities. The owner or operator of an emissions unit that is not required to conduct a compliance test on at least an annual basis may use permanent or temporary stack sampling facilities. If the owner chooses to use temporary sampling facilities on an emissions unit, and the Department elects to test the unit, such temporary facilities shall be installed on the emissions unit within 5 days of a request by the Department and remain on the emissions unit until the test is completed.

(c) Sampling Ports.

1. All sampling ports shall have a minimum inside diameter of 3 inches.
2. The ports shall be capable of being sealed when not in use.
3. The sampling ports shall be located in the stack at least 2 stack diameters or equivalent diameters downstream and at least 0.5 stack diameter or equivalent diameter upstream from any fan, bend, constriction or other flow disturbance.
4. For emissions units for which a complete application to construct has been filed prior to December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 15 feet or less. For stacks with a larger diameter, four sampling ports, each 90 degrees apart, shall be installed. For emissions units for which a complete application to construct is filed on or after December 1, 1980, at least two sampling ports, 90 degrees apart, shall be installed at each sampling location on all circular stacks that have an outside diameter of 10 feet or less. For stacks with larger diameters, four sampling ports, each 90 degrees apart, shall be installed. On horizontal circular ducts, the ports shall be located so that the probe can enter the stack vertically, horizontally or at a 45 degree angle.

5. On rectangular ducts, the cross sectional area shall be divided into the number of equal areas in accordance with EPA Method 1. Sampling ports shall be provided which allow access to each sampling point. The ports shall be located so that the probe can be inserted perpendicular to the gas flow.

(d) Work Platforms.

1. Minimum size of the working platform shall be 24 square feet in area. Platforms shall be at least 3 feet wide.

2. On circular stacks with 2 sampling ports, the platform shall extend at least 110 degrees around the stack.

3. On circular stacks with more than two sampling ports, the work platform shall extend 360 degrees around the stack.

4. All platforms shall be equipped with an adequate safety rail (ropes are not acceptable), toeboard, and hinged floor-opening cover if ladder access is used to reach the platform. The safety rail directly in line with the sampling ports shall be removable so that no obstruction exists in an area 14 inches below each sample port and 6 inches on either side of the sampling port.

(e) Access to Work Platform.

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(continued)

1. Ladders to the work platform exceeding 15 feet in length shall have safety cages or fall arresters with a minimum of 3 compatible safety belts available for use by sampling personnel.

2. Walkways over free-fall areas shall be equipped with safety rails and toeboards.

(f) Electrical Power.

1. A minimum of two 120-volt AC, 20-amp outlets shall be provided at the sampling platform within 20 feet of each sampling port.

2. If extension cords are used to provide the electrical power, they shall be kept on the plant's property and be available immediately upon request by sampling personnel.

(g) Sampling Equipment Support.

1. A three-quarter inch eyebolt and an angle bracket shall be attached directly above each port on vertical stacks and above each row of sampling ports on the sides of horizontal ducts.

a. The bracket shall be a standard 3 inch x 3 inch x one-quarter inch equal-legs bracket which is 1 and one-half inches wide. A hole that is one-half inch in diameter shall be drilled through the exact center of the horizontal portion of the bracket. The horizontal portion of the bracket shall be located 14 inches above the centerline of the sampling port.

b. A three-eighth inch bolt which protrudes 2 inches from the stack may be substituted for the required bracket. The bolt shall be located 15 and one-half inches above the centerline of the sampling port.

c. The three-quarter inch eyebolt shall be capable of supporting a 500 pound working load. For stacks that are less than 12 feet in diameter, the eyebolt shall be located 48 inches above the horizontal portion of the angle bracket. For stacks that are greater than or equal to 12 feet in diameter, the eyebolt shall be located 60 inches above the horizontal portion of the angle bracket. If the eyebolt is more than 120 inches above the platform, a length of chain shall be attached to it to bring the free end of the chain to within safe reach from the platform.

2. A complete monorail or dualrail arrangement may be substituted for the eyebolt and bracket.

3. When the sample ports are located in the top of a horizontal duct, a frame shall be provided above the port to allow the sample probe to be secured during the test.

[Rule 62-297.310(6), F.A.C.]

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Operation

- TV1. General Prohibition.** A permitted installation may only be operated, maintained, constructed, expanded or modified in a manner that is consistent with the terms of the permit. [Rule 62-4.030, Florida Administrative Code (F.A.C.)]
- TV2. Validity.** This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department. [Rule 62-4.160(2), F.A.C.]
- TV3. Proper Operation and Maintenance.** The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules. [Rule 62-4.160(6), F.A.C.]
- TV4. Not Federally Enforceable. Health, Safety and Welfare.** To ensure protection of public health, safety, and welfare, any construction, modification, or operation of an installation which may be a source of pollution, shall be in accordance with sound professional engineering practices pursuant to Chapter 471, F.S. [Rule 62-4.050(3), F.A.C.]
- TV5. Continued Operation.** An applicant making timely and complete application for permit, or for permit renewal, shall continue to operate the source under the authority and provisions of any existing valid permit or Florida Electrical Power Plant Siting Certification, and in accordance with applicable requirements of the Acid Rain Program and applicable requirements of the CAIR Program, until the conclusion of proceedings associated with its permit application or until the new permit becomes effective, whichever is later, provided the applicant complies with all the provisions of subparagraphs 62-213.420(1)(b)3., F.A.C. [Rules 62-213.420(1)(b)2., F.A.C.]
- TV6. Changes Without Permit Revision.** Title V sources having a valid permit issued pursuant to Chapter 62-213, F.A.C., may make the following changes without permit revision, provided that sources shall maintain source logs or records to verify periods of operation:
- a. Permitted sources may change among those alternative methods of operation allowed by the source's permit as provided by the terms of the permit;
 - b. A permitted source may implement operating changes, as defined in Rule 62-210.200, F.A.C., after the source submits any forms required by any applicable requirement and provides the Department and EPA with at least 7 days written notice prior to implementation. The source and the Department shall attach each notice to the relevant permit;
 - (1) The written notice shall include the date on which the change will occur, and a description of the change within the permitted source, the pollutants emitted and any change in emissions, and any term or condition becoming applicable or no longer applicable as a result of the change;
 - (2) The permit shield described in Rule 62-213.460, F.A.C., shall not apply to such changes;
 - c. Permitted sources may implement changes involving modes of operation only in accordance with Rule 62-213.415, F.A.C.
- [Rule 62-213.410, F.A.C.]
- TV7. Circumvention.** No person shall circumvent any air pollution control device, or allow the emission of air pollutants without the applicable air pollution control device operating properly. [Rule 62-210.650, F.A.C.]

Compliance

- TV8. Compliance with Chapter 403, F.S., and Department Rules.** Except as provided at Rule 62-213.460, Permit Shield, F.A.C., the issuance of a permit does not relieve any person from complying with the requirements of Chapter 403, F.S., or Department rules. [Rule 62-4.070(7), F.A.C.]

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- TV9. Compliance with Federal, State and Local Rules.** Except as provided at Rule 62-213.460, F.A.C., issuance of a permit does not relieve the owner or operator of a facility or an emissions unit from complying with any applicable requirements, any emission limiting standards or other requirements of the air pollution rules of the Department or any other such requirements under federal, state, or local law. [Rule 62-210.300, F.A.C.]
- TV10. Binding and enforceable.** The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions. [Rule 62-4.160(1), F.A.C.]
- TV11. Timely information.** When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly. [Rule 62-4.160(15), F.A.C.]
- TV12. Halting or reduction of source activity.** It shall not be a defense for a permittee in an enforcement action that maintaining compliance with any permit condition would necessitate halting of or reduction of the source activity. [Rule 62-213.440(1)(d)3., F.A.C.]
- TV13. Final permit action.** Any Title V source shall comply with all the terms and conditions of the existing permit until the Department has taken final action on any permit renewal or any requested permit revision, except as provided at Rule 62-213.412(2), F.A.C. [Rule 62-213.440(1)(d)4., F.A.C.]
- TV14. Sudden and unforeseeable events beyond the control of the source.** A situation arising from sudden and unforeseeable events beyond the control of the source which causes an exceedance of a technology-based emissions limitation because of unavoidable increases in emissions attributable to the situation and which requires immediate corrective action to restore normal operation, shall be an affirmative defense to an enforcement action in accordance with the provisions and requirements of 40 CFR 70.6(g)(2) and (3), hereby adopted and incorporated by reference. [Rule 62-213.440(1)(d)5., F.A.C.]
- TV15. Permit Shield.** Except as provided in Chapter 62-213, F.A.C., compliance with the terms and conditions of a permit issued pursuant to Chapter 62-213, F.A.C., shall, as of the effective date of the permit, be deemed compliance with any applicable requirements in effect, provided that the source included such applicable requirements in the permit application. Nothing in this condition or in any permit shall alter or affect the ability of EPA or the Department to deal with an emergency, the liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance, or the requirements of the Federal Acid Rain Program or the CAIR Program. [Rule 62-213.460, F.A.C.]
- TV16. Compliance With Federal Rules.** A facility or emissions unit subject to any standard or requirement of 40 CFR, Part 60, 61, 63 or 65, adopted and incorporated by reference at Rule 62-204.800, F.A.C., shall comply with such standard or requirement. Nothing in this chapter shall relieve a facility or emissions unit from complying with such standard or requirement, provided, however, that where a facility or emissions unit is subject to a standard established in Rule 62-296, F.A.C., such standard shall also apply. [Rule 62-296.100(3), F.A.C.]

Permit Procedures

- TV17. Permit Revision Procedures.** The permittee shall revise its permit as required by Rules 62-213.400, 62-213.412, 62-213.420, 62-213.430 & 62-4.080, F.A.C.; and, in addition, the Department shall revise permits as provided in Rule 62-4.080, F.A.C. & 40 CFR 70.7(f).
- TV18. Permit Renewal.** The permittee shall renew its permit as required by Rules 62-4.090, 62.213.420(1) and 62-213.430(3), F.A.C. Permits being renewed are subject to the same requirements that apply to permit issuance at the time of application for renewal. Permit renewal applications shall contain that information identified in Rules 62-210.900(1) [Application for Air Permit - Long Form], 62-213.420(3) [Required

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Information], 62-213.420(6) [CAIR Part Form], F.A.C. Unless a Title V source submits a timely and complete application for permit renewal in accordance with the requirements this rule, the existing permit shall expire and the source's right to operate shall terminate. For purposes of a permit renewal, a timely application is one that is submitted 225 days before the expiration of a permit that expires on or after June 1, 2009. No Title V permit will be issued for a new term except through the renewal process. [Rules 62-213.420 & 62-213.430, F.A.C.]

TV19. Insignificant Emissions Units or Pollutant-Emitting Activities. The permittee shall identify and evaluate insignificant emissions units and activities as set forth in Rule 62-213.430(6), F.A.C.

TV20. Savings Clause. If any portion of the final permit is invalidated, the remainder of the permit shall remain in effect. [Rule 62-213.440(1)(d)1., F.A.C.]

TV21. Suspension and Revocation.

- a. Permits shall be effective until suspended, revoked, surrendered, or expired and shall be subject to the provisions of Chapter 403, F.S., and rules of the Department.
- b. Failure to comply with pollution control laws and rules shall be grounds for suspension or revocation.
- c. A permit issued pursuant to Chapter 62-4, F.A.C., shall not become a vested property right in the permittee. The Department may revoke any permit issued by it if it finds that the permit holder or his agent:
 - (1) Submitted false or inaccurate information in his application or operational reports.
 - (2) Has violated law, Department orders, rules or permit conditions.
 - (3) Has failed to submit operational reports or other information required by Department rules.
 - (4) Has refused lawful inspection under Section 403.091, F.S.
- d. No revocation shall become effective except after notice is served by personal services, certified mail, or newspaper notice pursuant to Section 120.60(5), F.S., upon the person or persons named therein and a hearing held if requested within the time specified in the notice. The notice shall specify the provision of the law, or rule alleged to be violated, or the permit condition or Department order alleged to be violated, and the facts alleged to constitute a violation thereof.

[Rule 62-4.100, F.A.C.]

TV22. Not federally enforceable. Financial Responsibility. The Department may require an applicant to submit proof of financial responsibility and may require the applicant to post an appropriate bond to guarantee compliance with the law and Department rules. [Rule 62-4.110, F.A.C.]

TV23. Emissions Unit Reclassification.

- a. Any emissions unit whose operation permit has been revoked as provided for in Chapter 62-4, F.A.C., shall be deemed permanently shut down for purposes of Rule 62-212.500, F.A.C. Any emissions unit whose permit to operate has expired without timely renewal or transfer may be deemed permanently shut down, provided, however, that no such emissions unit shall be deemed permanently shut down if, within 20 days after receipt of written notice from the Department, the emissions unit owner or operator demonstrates that the permit expiration resulted from inadvertent failure to comply with the requirements of Rule 62-4.090, F.A.C., and that the owner or operator intends to continue the emissions unit in operation, and either submits an application for an air operation permit or complies with permit transfer requirements, if applicable.
- b. If the owner or operator of an emissions unit which is so permanently shut down, applies to the Department for a permit to reactivate or operate such emissions unit, the emissions unit will be reviewed and permitted as a new emissions unit.

[Rule 62-210.300(6), F.A.C.]

TV24. Transfer of Permits. Per Rule 62-4.160(11), F.A.C., this permit is transferable only upon Department approval in accordance with Rule 62-4.120, F.A.C., as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department. The permittee transferring the permit shall remain liable for corrective actions that may be required as a result of any violations occurring prior to the sale or legal transfer of the facility. The permittee shall also comply with the requirements of Rule 62-210.300(7), F.A.C., and use DEP Form No. 62-210.900(7). [Rules 62-4.160(11), 62-4.120, and 62-210.300(7), F.A.C.]

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Rights, Title, Liability, and Agreements

TV25. Rights. As provided in Subsections 403.987(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit. [Rule 62-4.160(3), F.A.C.]

TV26. Title. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title. [Rule 62-4.160(4), (F.A.C.)]

TV27. Liability. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of F.S. and Department rules, unless specifically authorized by an order from the Department. [Rule 62-4.160(5), F.A.C.]

TV28. Agreements.

- a. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
 - (1) Have access to and copy any records that must be kept under conditions of the permit;
 - (2) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and,
 - (3) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.
- b. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.
- c. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

[Rules 62-4.160(7), (9), and (10), F.A.C.]

Recordkeeping and Emissions Computation

TV29. Permit. The permittee shall keep this permit or a copy thereof at the work site of the permitted activity. [Rule 62-4.160(12), F.A.C.]

TV30. Recordkeeping.

- a. Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.
- b. The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least five (5) years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.
- c. Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements, and the operating conditions at the time of sampling or measurement;
 - (2) The person responsible for performing the sampling or measurements;

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- (3) The dates analyses were performed;
- (4) The person and company that performed the analyses;
- (5) The analytical techniques or methods used;
- (6) The results of such analyses.

[Rules 62-4.160(14) and 62-213.440(1)(b)2., F.A.C.]

TV31. Emissions Computation. Pursuant to Rule 62-210.370, F.A.C., the following required methodologies are to be used by the owner or operator of a facility for computing actual emissions, baseline actual emissions, and net emissions increase, as defined at Rule 62-210.200, F.A.C., and for computing emissions for purposes of the reporting requirements of subsection 62-210.370(3) and paragraph 62-212.300(1)(e), F.A.C., or of any permit condition that requires emissions be computed in accordance with Rule 62-210.370, F.A.C. Rule 62-210.370, F.A.C., is not intended to establish methodologies for determining compliance with the emission limitations of any air permit.

For any of the purposes specified above, the owner or operator of a facility shall compute emissions in accordance with the requirements set forth in this subsection.

- a. *Basic Approach.* The owner or operator shall employ, on a pollutant-specific basis, the most accurate of the approaches set forth below to compute the emissions of a pollutant from an emissions unit; provided, however, that nothing in this rule shall be construed to require installation and operation of any continuous emissions monitoring system (CEMS), continuous parameter monitoring system (CPMS), or predictive emissions monitoring system (PEMS) not otherwise required by rule or permit, nor shall anything in this rule be construed to require performance of any stack testing not otherwise required by rule or permit.
 - (1) If the emissions unit is equipped with a CEMS meeting the requirements of paragraph 62-210.370(2)(b), F.A.C., the owner or operator shall use such CEMS to compute the emissions of the pollutant, unless the owner or operator demonstrates to the department that an alternative approach is more accurate because the CEMS represents still-emerging technology.
 - (2) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C., but emissions of the pollutant can be computed pursuant to the mass balance methodology of paragraph 62-210.370(2)(c), F.A.C., the owner or operator shall use such methodology, unless the owner or operator demonstrates to the department that an alternative approach is more accurate.
 - (3) If a CEMS is not available or does not meet the requirements of paragraph 62-210.370(2)(b), F.A.C., and emissions cannot be computed pursuant to the mass balance methodology, the owner or operator shall use an emission factor meeting the requirements of paragraph 62-210.370(2)(d), F.A.C., unless the owner or operator demonstrates to the department that an alternative approach is more accurate.
- b. *Continuous Emissions Monitoring System (CEMS).*
 - (1) An owner or operator may use a CEMS to compute emissions of a pollutant for purposes of this rule provided:
 - (a) The CEMS complies with the applicable certification and quality assurance requirements of 40 CFR Part 60, Appendices B and F, or, for an acid rain unit, the certification and quality assurance requirements of 40 CFR Part 75, all adopted by reference at Rule 62-204.800, F.A.C.; or,
 - (b) The owner or operator demonstrates that the CEMS otherwise represents the most accurate means of computing emissions for purposes of this rule.
 - (2) Stack gas volumetric flow rates used with the CEMS to compute emissions shall be obtained by the most accurate of the following methods as demonstrated by the owner or operator:
 - (a) A calibrated flowmeter that records data on a continuous basis, if available; or
 - (b) The average flow rate of all valid stack tests conducted during a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.
 - (3) The owner or operator may use CEMS data in combination with an appropriate f-factor, heat input data, and any other necessary parameters to compute emissions if such method is demonstrated by the

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owner or operator to be more accurate than using a stack gas volumetric flow rate as set forth at subparagraph 62-210.370(2)(b)2., F.A.C., above.

c. *Mass Balance Calculations.*

- (1) An owner or operator may use mass balance calculations to compute emissions of a pollutant for purposes of this rule provided the owner or operator:
 - (a) Demonstrates a means of validating the content of the pollutant that is contained in or created by all materials or fuels used in or at the emissions unit; and,
 - (b) Assumes that the emissions unit emits all of the pollutant that is contained in or created by any material or fuel used in or at the emissions unit if it cannot otherwise be accounted for in the process or in the capture and destruction of the pollutant by the unit's air pollution control equipment.
- (2) Where the vendor of a raw material or fuel which is used in or at the emissions unit publishes a range of pollutant content from such material or fuel, the owner or operator shall use the highest value of the range to compute the emissions, unless the owner or operator demonstrates using site-specific data that another content within the range is more accurate.
- (3) In the case of an emissions unit using coatings or solvents, the owner or operator shall document, through purchase receipts, records and sales receipts, the beginning and ending VOC inventories, the amount of VOC purchased during the computational period, and the amount of VOC disposed of in the liquid phase during such period.

d. *Emission Factors.*

- (1) An owner or operator may use an emission factor to compute emissions of a pollutant for purposes of this rule provided the emission factor is based on site-specific data such as stack test data, where available, unless the owner or operator demonstrates to the department that an alternative emission factor is more accurate. An owner or operator using site-specific data to derive an emission factor, or set of factors, shall meet the following requirements.
 - (a) If stack test data are used, the emission factor shall be based on the average emissions per unit of input, output, or gas volume, whichever is appropriate, of all valid stack tests conducted during at least a five-year period encompassing the period over which the emissions are being computed, provided all stack tests used shall represent the same operational and physical configuration of the unit.
 - (b) Multiple emission factors shall be used as necessary to account for variations in emission rate associated with variations in the emissions unit's operating rate or operating conditions during the period over which emissions are computed.
 - (c) The owner or operator shall compute emissions by multiplying the appropriate emission factor by the appropriate input, output or gas volume value for the period over which the emissions are computed. The owner or operator shall not compute emissions by converting an emission factor to pounds per hour and then multiplying by hours of operation, unless the owner or operator demonstrates that such computation is the most accurate method available.
- (2) If site-specific data are not available to derive an emission factor, the owner or operator may use a published emission factor directly applicable to the process for which emissions are computed. If no directly-applicable emission factor is available, the owner or operator may use a factor based on a similar, but different, process.

e. *Accounting for Emissions During Periods of Missing Data from CEMS, PEMS, or CPMS.* In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of missing data from CEMS, PEMS, or CPMS using other site-specific data to generate a reasonable estimate of such emissions.

f. *Accounting for Emissions During Periods of Startup and Shutdown.* In computing the emissions of a pollutant, the owner or operator shall account for the emissions during periods of startup and shutdown of the emissions unit.

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- g. *Fugitive Emissions.* In computing the emissions of a pollutant from a facility or emissions unit, the owner or operator shall account for the fugitive emissions of the pollutant, to the extent quantifiable, associated with such facility or emissions unit.
- h. *Recordkeeping.* The owner or operator shall retain a copy of all records used to compute emissions pursuant to this rule for a period of five years from the date on which such emissions information is submitted to the department for any regulatory purpose.

[Rule 62-210.370(1) & (2), F.A.C.]

Responsible Official

TV32. Designation and Update. The permittee shall designate and update a responsible official as required by Rule 62-213.202, F.A.C.

Prohibitions and Restrictions

TV33. Asbestos. This permit does not authorize any demolition or renovation of the facility or its parts or components which involves asbestos removal. This permit does not constitute a waiver of any of the requirements of Chapter 62-257, F.A.C., and 40 CFR 61, Subpart M, National Emission Standard for Asbestos, adopted and incorporated by reference in Rule 62-204.800, F.A.C. Compliance with Chapter 62-257, F.A.C., and 40 CFR 61, Subpart M, Section 61.145, is required for any asbestos demolition or renovation at the source. [40 CFR 61; Rule 62-204.800, F.A.C.; and, Chapter 62-257, F.A.C.]

TV34. Refrigerant Requirements. Any facility having refrigeration equipment, including air conditioning equipment, which uses a Class I or II substance (listed at 40 CFR 82, Subpart A, Appendices A and B), and any facility which maintains, services, or repairs motor vehicles using a Class I or Class II substance as refrigerant must comply with all requirements of 40 CFR 82, Subparts B and F, and with Chapter 62-281, F.A.C.

TV35. Open Burning Prohibited. Open burning is prohibited unless performed in accordance with the provisions of Rule 62-296.320(3) or Chapter 62-256, F.A.C.

Appendix U-1: List of Unregulated Emissions Units and/or Activities.

Green Circle Bio Energy Inc.
Cottondale Wood Pellet Plant

Title V Operation Permit Revision No.: 0630058-013-AV
Facility ID No.: 0630058

Unregulated Emissions Units and/or Activities. An emissions unit which emits no “emissions-limited pollutant” and which is subject to no unit-specific work practice standard, though it may be subject to regulations applied on a facility-wide basis (e.g., unconfined emissions, odor, general opacity) or to regulations that require only that it be able to prove exemption from unit-specific emissions or work practice standards.

The below listed emissions units and/or activities are neither ‘regulated emissions units’ nor ‘insignificant emissions units’.

E.U. ID

No.
008

Brief Description of Emissions Units and/or Activity
Diesel Fuel Storage Tank

TABLE 297.310-1 CALIBRATION SCHEDULE

[Note: This table is referenced in Rule 62-297.310, F.A.C.]

ITEM	MINIMUM CALIBRATION FREQUENCY	REFERENCE INSTRUMENT	TOLERANCE
Liquid in glass thermometer	Annually	ASTM Hg in glass ref. thermometer or equivalent, or thermometric points	+/-2%
Bimetallic thermometer	Quarterly	Calib. liq. in glass thermometer	5 degrees F
Thermocouple	Annually	ASTM Hg in glass ref. thermometer, NBS calibrated reference and potentiometer	5 degrees F
Barometer	Monthly	Hg barometer or NOAA station	+/-1% scale
Pitot Tube	When required or when damaged	By construction or measurements in wind tunnel D greater than 16" and standard pitot tube	See EPA Method 2, Fig. 2-2 & 2-3
Probe Nozzles	Before each test or when nicked, dented, or corroded	Micrometer	+/-0.001" mean of at least three readings Max. deviation between readings .004"
Dry Gas Meter and Orifice Meter	1. Full Scale: When received, When 5% change observed, Annually 2. One Point: Semiannually 3. Check after each test series	Spirometer or calibrated wet test or dry gas test meter	2%
		Comparison check	5%

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REPORT

COMPLIANCE MONITORING PLAN/COMPLIANCE ASSURANCE MONITORING PLAN

Green Circle Bio Energy, Inc.
Cottondale Wood Pellet Plant
Jackson County, Florida

Prepared For: Green Circle Bio Energy, Inc.
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May 2010



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1.0 INTRODUCTION

Green Circle Bio Energy, Inc. (Green Circle) owns and operates a wood pelletizing operation located south of Cottondale, Jackson County, Florida. The address of this facility is 2500 Green Circle Parkway, Cottondale, Florida. The Florida Department of Environmental Protection (FDEP) issued an Air Construction Permit (Permit No. 0630058-001-AC) to Green Circle for construction and initial operation of the facility. Permit No. 0630058-001-AC requires submittal of a Compliance Monitoring Plan (CMP) detailing the procedures that would be used to demonstrate compliance with the production and emission limits in the permit. The initial CMP was submitted to FDEP in July 2008.

This CMP indicated that some of the operational parameters intended to be used to specify compliance would be determined during initial compliance testing. However, Green Circle was unable to perform the required testing due to a number of issues affecting their ability to operate at or near full capacity, including insufficient hammer mill capacity and ineffective aspiration systems needed to remove excess moisture from the chip and pellet conveyance equipment. In September 2008, FDEP issued Air Construction Permit No. 0630058-002-AC to Green Circle for installation of seven new hammer mills to determine if additional hammer mill capacity alone could alleviate the production issue. Unfortunately, excess moisture continued to limit the production capacity of the facility. Accordingly, in February 2009, Green Circle submitted an Air Construction Permit application to FDEP describing several facility modifications intended to increase production capacity, including installation of a green wood chip grinder, ventilation of the grinding and chip storage silos, installation of additional hammer mills, and enhancement of the aspiration systems serving the grinding and pelletizing lines.

The permit for these modifications (Permit No. 0630058-003-AC) was issued by FDEP in July 2009.

The facility receives raw pine logs or sawmill residuals (chips, sawdust, and shavings) and processes the wood into wood pellets to be sold as product. Permit No. 0630058-003-AC includes the following emission unit (EU) designations (production limits set by the air construction permit are included in parentheses):

- EU 001 Wood Fiber Receiving and Storage Area [180 incoming trucks per day (monthly average)]
- EU 002 Dryer Line No. 1 [80,220 pounds per hour (lb/hr) dry wood (maximum hourly) and 125 million British thermal units per hour (MMBtu/hr) daily average]
- EU 003 Dryer Line No. 2 [80,220 lb/hr dry wood (maximum hourly), 125 MMBtu/hr (daily average)]
- EU 004 Pelletizing Line No. 1 [23.7 tons per hour (TPH) pellets]
- EU 005 Pelletizing Line No. 2 (29.6 TPH pellets)
- EU 006 Pelletizing Line No. 3 (23.7 TPH pellets)
- EU 007 Pellet Load-out Area (77 TPH pellets)
- EU 008 Unregulated Emissions Unit – 2,000-gallon diesel storage tank
- EU 009 Green Wood Chip Grinding System

This Air Construction Permit includes emission limits for the following units:

- EU 002 – Dryer Line No. 1
 - Nitrogen Oxides (NO_x) = 122.65 tons per year (TPY) (12-month rolling total)
 - Particulate Matter (PM) = 0.2 pound per million British thermal units (lb/MMBtu) = 19.90 TPY (12-month rolling total)
 - Volatile Organic Compounds (VOCs) = 24.10 TPY (12-month rolling total)
- EU 003 – Dryer Line No. 2
 - NO_x = 122.65 TPY (12-month rolling total)
 - PM = 0.2 lb/MMBtu = 19.90 TPY (12-month rolling total)
 - VOC = 24.10 TPY (12-month rolling total)
- EU 004 – Pelletizing Line No. 1
 - PM = 59.77 TPY (12-month rolling total)
- EU 005 – Pelletizing Line No. 2
 - PM = 59.77 TPY (12-month rolling total)
- EU 006 – Pelletizing Line No. 3
 - PM = 59.77 TPY (12-month rolling total)
- EU 004, 005, 006 – Pelletizing Lines
 - VOC = 177.10 TPY (12-month rolling total)

Some sources at the facility are subject to the U.S. Environmental Protection Agency (EPA) Compliance Assurance Monitoring (CAM) regulations, codified as part of EPA's Clean Air Act, and located in Title 40, Part 64 of the Code of Federal Regulations (40 CFR 64). The regulations in 40 CFR 64 have been adopted by the state of Florida in Rule 62-204, Florida Administrative Code. The CAM rule is applicable to emission units, on a pollutant-by-pollutant basis, at major sources that meet the following criteria:

- The pre-control device emissions from the emission unit are greater than major source thresholds
- The emission unit is subject to emission limits or standards
- Pollution control equipment is used to meet emission limits or standards
- The emission unit is not subject to a post-1990 New Source Performance Standard or National Emission Standard for Hazardous Air Pollutants for a given pollutant
- The control equipment is not inherent to the process

Green Circle has made the following conclusions regarding the various emission sources at the site with regard to CAM applicability:

- The wood fiber receiving and storage area (EU 001) does not have permitted emissions limits or a control device to achieve compliance. Therefore, the wood fiber receiving and storage area is not subject to CAM.

- Dryer Line Nos. 1 and 2 (EU 002 and EU 003) are subject to air emission limits for NO_x, PM, and VOC. In addition, the dryer lines use control devices [wet electrostatic precipitator (WESP) and regenerative thermal oxidizer (RTO)] to achieve compliance with the permitted limits. The dryer lines are therefore subject to CAM for PM and VOCs.
- Pelletizing Line Nos. 1, 2, and 3 (EU 004, EU 005, and EU 006) are subject to permitted emissions limits for PM and use control devices to achieve compliance with the permitted limits (fabric filters and cyclones). The pelletizing lines are therefore subject to CAM for PM.
- The Pellet Load-out Area (EU 007) does not have permitted emissions limits to achieve compliance. Therefore, the pellet load-out area is not subject to CAM.
- There is no pollution control equipment or emission limits associated with the Green Wood Chip Grinding System (EU 009); therefore, it is not subject to CAM.

The facility has developed this CMP in anticipation of satisfying CAM requirements for PM and VOCs. Compliance with NO_x emission standards will be based on the development of emission factors during initial compliance tests.

In general, Green Circle intends to perform emissions stack testing during initial operations to establish correlations between monitored and recorded control parameters and stack emission rates. Data collected during stack testing will be used to support the use of specific control parameters, control parameter ranges, and recordkeeping procedures as indicators of compliance with permitted emissions limits. The following sections describe compliance monitoring procedures to be used during the initial stack testing. In addition, general operating condition restrictions/limitations, as described in the construction permit, are addressed in the following sections. These monitoring conditions and operating conditions may change based on stack testing results. Any changes to the plan will be addressed in the air operations permit application.

A summary of the compliance monitoring parameters is included as Table 1.

2.0 COMPLIANCE MONITORING PLAN PARAMETERS

2.1 Wood Fiber Receiving and Storage Area

Wood fiber (pulpwood logs or sawmill residuals) is unloaded and stored on-site. Logs are chipped and stored. The bark is hammer-milled, screened, and stored as fuel supply. All trucks entering the facility and carrying a delivery of wood fiber must be weighed on scales located at the facility scale house. Scale house personnel will maintain daily, monthly, and year-to-date records of the number of trucks that enter the facility. The current Air Construction Permit limits the number of incoming trucks to 180 per day on a monthly average basis, which is equivalent to 5,400 trucks per month for a 30-day month. To provide sufficient notification, the scale house personnel will notify the Wood Yard Manager if the number of trucks entering the facility for a given month exceeds 5,000 so that appropriate measures can be taken.

The facility will maintain the paved and unpaved roads at the facility in good working condition. Precautions will be taken by the facility to prevent emissions of unconfined PM, including the application of water or other dust suppressants to the roads when necessary. Any actions to suppress dust being generated by the unpaved roads will be documented and recorded.

In the unlikely event that the quantity of bark in the bark storage pile becomes low, the facility will receive bark from outside sources to replenish the fuel supply. Sources of fuel will include the hog fuel (chips and bark) from local chip-n-saw mills and the like only. No treated lumber will be accepted. No municipal yard waste will be accepted.

2.2 Dryer Lines

Two rotary drum dryers (EU 002 and EU 003) are used to reduce the moisture content of the wood chips to approximately 9 percent in preparation for grinding and pelletizing. Heat for the dryers is provided by two 125-MMBtu/hr bark-fired furnaces. High-humidity exhaust gases from the dryers are returned to the secondary combustion chamber of the bark fuel combustors to temper the combustion within the chamber and control the generation of NO_x. Gases from the secondary combustion chamber are drawn through a 6,900-lb/hr steam generator. Up to 50 percent of the dryer gases leaving the dryer are re-circulated to the dryer inlet. The remaining gases are directed to a WESP for PM emissions control and an RTO to control VOC emissions.

The WESP inlet gases are quenched with a recirculating water system. Gas exiting the WESP is routed to the RTO, where exhaust gas VOC emissions are reduced by 95 percent. Propane gas is used as a supplemental fuel to maintain RTO efficiency.

Exhaust gas from each RTO is vented to the atmosphere through a stack (one stack for each RTO). Each dryer includes two additional stacks used during bypass operations. Bypass operations include periods during startup and during process malfunctions. Bypass operations during malfunctions are limited in the Air Construction Permit to 50 hours per year (hr/yr) for each dryer bypass stack and each

furnace bypass stack. The permit allows the bypass stack for each furnace to operate for 1,500 hours in "idle mode," defined as operation up to a maximum heat input rate of 5 MMBtu/hr. If at any time during normal operations the exhaust gases to either RTO are routed to a bypass stack, the facility will record the reason for the bypass conditions; the period of time when the bypass stack was used; in the case of the furnace stack, the operating mode (malfunction or idle); and the corrective action performed, if applicable.

As indicated in the Air Construction Permit, the facility is required to demonstrate compliance with PM, VOC, and NO_x emission limits established for the facility dryer lines (Dryer Nos. 1 and 2).

2.2.1 Production Factor Development

Green Circle will perform at least two dryer capacity tests during the compliance test to demonstrate that the dryer is operating within 90 percent of its capacity of 80,220 lb/hr of dried wood chips. These tests will involve directing the entire capacity of the dryer to the fire dump for at least one 10-minute period and weighing the dried chips.

Chips are fed to each dryer using infeed screws. For each dryer there are three sets of three infeed screws. Each infeed screw set is driven by a variable frequency drive (VFD). The frequency to the VFD will be measured and controlled by the facility and from this the revolutions per minute (RPM) of each screw set will be determined. During the capacity tests, Green Circle will record the number of revolutions of the infeed screw sets and calculate a production factor in units of pounds of dried chips per revolution of each infeed screw set using the following formula:

$$\begin{aligned} &\text{Pounds of wood chips dried/infeed screw set revolution (lb/rev)} = \\ &\quad \text{the weight of wood chips measured during the 10 minute capacity test (lb)} / \text{the number of infeed} \\ &\quad \text{screw set revolutions recorded during the capacity test (revolutions)} \end{aligned}$$

From this production factor, Green Circle will then be able to quantify the amount of wood chips dried in each dryer by using the following formula:

$$\begin{aligned} &\text{Pounds of wood chips dried per hour} = \\ &\quad \text{number of revolutions of each screw set per hour (rev/hr)} \times \text{production factor (lb/rev)} \end{aligned}$$

Using the above procedure during the compliance tests, Green Circle determined the hourly production rates for Dryer Nos. 1 and 2 to be 77,160 and 77,760 lb/hr of chips dried to 9 percent moisture, respectively. During testing of Dryer No. 1 the number of screw set revolutions was recorded to be 101 revolutions for each of the three screw sets feeding each of the dryers, for a total of 303 revolutions per hour. The same information was recorded during testing of Dryer No. 2. Based on this information, average production factors of 255 and 257 pounds of wood chips produced per screw set revolution were calculated for Dryer No. 1 and Dryer No. 2, respectively (for Dryer No. 1: 77,160 lb/hr / 101 revolutions

per screw set / 3 screw sets). For this CMP, Green Circle will assume the average production factor of 256 lb/screw set revolution. Using this factor and the maximum permitted capacity of the dryer of 80,220 lb/hr (dried to approximately 9 percent moisture). the maximum speed of the feed system was calculated to be 313.4 revolutions per hour. The facility will record the number of revolutions of each of the three infeed screw sets, add them together, and compare the total to the established maximum of 313.4 revolutions per hour to demonstrate compliance with the maximum permitted production rate of 80,220 lb/hr of wood chips for each of the dryers.

2.2.2 Dryer Heat Input Value

A second production parameter the facility intends to record will be the heat input of each dryer line. As previously mentioned, each dryer line is limited to a heat input of 125 MMBtu/hr, averaged over a 24-hour period. Using an average heating value for southern yellow pine of 4,600 British thermal units per pound (Btu/lb) of fuel, as specified by FDEP, this heat input rate equates to approximately 13.6 TPH of bark fuel. In order to demonstrate compliance, the facility will monitor and record the fuel delivery parameters specified in the following paragraph.

Each of the bark fuel combustors, manufactured by Teaford, has a hydraulic ram feeder that pushes the bark fuel into the furnace. Each “stroke” of the hydraulic ram equals approximately 20 cubic feet (cf) of bark fuel. The weight of the fuel delivered to each combustor was calculated using an estimation of the bulk density for green southern yellow pine bark and chips. For the purpose of this report, bulk density calculations of the fuel supply are based on a bulk density of wood waste/bark of 11 pounds per cubic foot (lb/cf).

The number of strokes of the hydraulic ram needed to attain the maximum permitted heat input rate to the dryers of 125 MMBtu/hr is calculated as follows:

$$\begin{aligned}\text{Strokes per hour} &= 125 \text{ MMBtu/hr} / 4,600 \text{ Btu/lb} / 528.6 \text{ lb/stroke} \\ &= 51 \text{ strokes per hour}\end{aligned}$$

The facility will monitor the number of strokes of the hydraulic ram feeder per hour, and will determine an average hourly rate for each day. From this the tons per hour of bark fuel will be calculated and recorded, and a heat input in MMBtu/hr determined.

2.2.3 Wet Electrostatic Precipitators

In an electrostatic precipitator (ESP), electric fields are established by applying a direct-current voltage across a pair of electrodes: a discharge electrode and a collection electrode. PM suspended in the gas stream is electrically charged by passing through the electric field around each discharge electrode (the negatively charged electrode). The negatively charged particles then migrate toward the positively charged collection electrodes (collection plates). The PM is separated from the gas stream by retention on the collection plates. The WESP control device uses a quench water spray to cool and saturate dryer

exhaust gases prior to their entry into the electrical fields of the WESP. As particles accumulate on the collector plates of the WESP, the plates are cleaned by a spray of water.

The primary indicators of WESP performance include opacity, secondary voltage, secondary current, and secondary corona power. Other indicators of WESP performance include the spark rate, primary current, primary voltage, inlet gas temperature, gas flow rate, inlet water flow rate, solids content of flush water, and field operations.

The secondary voltage on the collector plates drops when a malfunction, such as grounded electrodes, occurs in the WESP. When the secondary voltage drops, fewer particles are charged and collected. Also, the secondary voltage can remain high but fail to perform its function if the collection plates are not cleaned. If the collection plates are not cleaned, the current drops. Since power is the product of voltage and current, monitoring the power input will provide a reasonable assurance that the WESP is functioning properly. The manufacturer of the WESP provided the following secondary voltage and current design parameters.

- Minimum secondary voltage (24-hour average): 30 kilovolts (kV)
- Minimum secondary current (24-hour average): 250 milliamps (mA)

The values for these parameters will be verified during initial compliance testing. During normal drying operations, Green Circle will monitor the secondary voltage and secondary current. The monitoring system will consist of a voltmeter and an ammeter, parts of the WESP instrumentation.

For the WESP to operate within design parameters, the gas stream needs to be cooled in order for some of the pollutants to condense. High quench inlet temperatures can indicate the quench water spray prior to the electrostatic field is not functioning as designed. In addition, high WESP outlet temperatures can indicate that the gas stream has not been sufficiently saturated to provide for efficient particle removal. High outlet temperatures could be the result of plugged nozzles, malfunctioning pumps, or broken or plugged piping.

The manufacturer of the WESP provided the following WESP inlet and outlet quench temperatures:

- Maximum inlet quench temperature: 210 degrees Fahrenheit (°F)
- Maximum outlet quench temperature: 210°F

The values for these parameters will be verified during initial compliance testing. Green Circle will measure the WESP quench inlet temperature and the WESP outlet temperature to demonstrate continuous operation of the WESP in accordance with design parameters.

2.2.4 Regenerative Thermal Oxidizer

The facility RTO is used to control VOC emissions in the dryer exhaust gas streams by combusting emissions to carbon dioxide (CO₂) and water. Important design factors of the RTO include maintaining high enough temperatures within the RTO to ignite the organic constituents of the exhaust gas stream, residence time to allow the combustion reaction to occur, and turbulence or mixing of the combustion air with the exhaust gas stream. The rate at which VOCs are oxidized is affected by temperature; the higher the temperature, the faster the oxidation reaction proceeds. Thermal destruction of most organics occurs at combustion temperatures between 800°F and 2,000°F.

For VOC control, the primary indicators of RTO performance include the outlet VOC concentration and outlet or combustion chamber temperature. Other indicators include the outlet carbon monoxide (CO) concentration, outlet CO₂ concentration, outlet oxygen concentration, exhaust gas flow rate, and auxiliary fuel line pressure.

From normal drying operations, Green Circle has established a minimum combustion chamber temperature of 1,440°F. Green Circle will verify this temperature during initial compliance testing. The monitoring system will consist of a thermocouple device installed in the thermal oxidizer chamber as part of the RTO instrumentation. A second thermocouple device will verify accuracy of the primary thermocouple.

In addition, it will be necessary to ensure a proper residence time to allow temperatures within the RTO to ignite the organic constituents of the exhaust gas stream. The RTO manufacturer's design residence time in the combustion chamber is approximately 1.39 seconds at the design gas flow rate. Each of the two RTO combustion chambers is approximately 3,377 cf in volume. The design gas flow rate through the RTO is approximately 92,797 actual cubic feet per minute (acfm) at 176°F.

2.2.5 Nitrogen Oxide Emissions Control

As previously stated, up to 50 percent of the exhaust gases from the dryers are returned to the secondary combustion chamber of the bark fuel combustor, tempering the combustion and controlling the generation of NO_x. During initial stack emissions testing, Green Circle intends to collect data to demonstrate the effectiveness of this process, and to make a correlation between actual NO_x emissions from the RTO exhaust stacks and the heat input rate, in pounds of NO_x emissions per ton of wood combusted in the furnace. Emission factors will be used to account for NO_x emissions during malfunction and idle mode use of the bypass stacks.

To demonstrate compliance with annual emission limits, the facility will record the monthly heat input rate of each furnace. Using the NO_x emission factor developed during initial compliance testing, 0.331 lb NO_x per ton of dry chips (approximately 9 percent moisture, by weight) and the appropriate emission factors for malfunction and idle mode operation (those used in the permit application), Green Circle will calculate a

monthly NO_x emissions rate and add it to the previous 11 months' emissions for comparison to the annual emission limit.

2.2.6 Bypass Stacks

As previously mentioned, the bypass stacks are used during periods of startup and during process malfunctions. The number of hours the bypass stacks can be used are limited by the Air Construction Permit to 50 hours for malfunction operation of the dryer and furnace bypass stack and 1,500 hours of operation for the furnace bypass stack during idle mode.

Green Circle will monitor the use of the bypass stacks and will record the reason for the bypass conditions, the period of time and duration when the bypass stack was used, the operating mode during the time the bypass stack was operating, and the corrective action performed, if applicable.

2.3 Pelletizing Lines

Dry wood chips (approximately 9 percent moisture, by weight), stored in the Grinding Storage Bin, are conveyed to the Grinding Building along three incline conveyors. Note that this CMP does not include information for the aspiration system for these incline conveyors as described in the permit application and permit, as Green Circle has determined that it will likely not be necessary to install this system to attain permitted production rates. From the incline conveyors, the wood chips are metered to three grinding infeed conveyors that feed the three hammer mill lines. The aspiration systems for these infeed conveyors consist of spot filters mounted directly on the conveyors. These three spot filters are vented to a common stack. The three conveyors exiting the hammer mill lines each have separate aspiration systems to remove excess moisture and separate baghouses. These three outfeed conveyors transport the ground wood to the three Pelleting Storage Bins. Note that this CMP does not include information for the aspiration system for these outfeed conveyors as described in the permit application and permit, as Green Circle has determined it will likely not be necessary to install these systems to attain permitted production rates.

Three incline conveyors are used to transport ground wood from the Pelleting Storage Bins to the Pelleting Building. Note that this CMP does not include information for the aspiration system for these incline conveyors servicing the Pelleting processes as described in the permit application and permit, as Green Circle has determined that it will likely not be necessary to install this system to attain permitted production rates. From the incline conveyors, the ground wood is transferred to three conveyors that feed the three Pelletizing Lines. The aspiration systems for these three infeed conveyors are three spot filters mounted directly on the conveyors exhausting to one common stack. Three conveyors are used to transport the pellets from the Pelletizing Lines to a bucket elevator. Each bucket elevator is used to transfer the pellets to the top of a counter current flow Pellet Cooler. PM emissions from each cooler are controlled by two parallel high-efficiency cyclones. From the Pellet Coolers, the flows of pellets merge and are fed to a single bucket elevator and vibrating screen. From the vibrating screens the pellets are

transferred to the railcar loading system. Note that this CMP does not include information for the aspiration system for the second bucket elevator and vibrating screen as described in the permit application and permit, as Green Circle has determined that it will likely not be necessary to install this system to attain permitted production rates.

2.3.1 Production Quantities

Pelletizing Line Nos. 1 and 3 are limited in the Air Construction Permit to 23.7 TPH of pellets produced (24-hour average). Pelletizing Line No. 2 is limited to 29.6 TPH of pellets produced (24-hour average). Pelletizing Line Nos. 1 and 3 include four pellet mills each, and Pelletizing Line No. 2 is equipped with five pellet mills (13 total pellet mills). Each pellet mill will utilize a control system that monitors the infeed screw operations to each mill and calculates a tonnage of pellets produced based on the infeed screw parameters.

During initial stack testing, the weigh scale in the bulk load out system was used to determine the pellet production rate. As the bulk load out system is common to the three pelleting lines, each pelleting line was run separately during the test so that the number of infeed screw revolutions recorded during the test could be directly compared to the pellet production rate measured by the bulk load out system. From this information, the number of screw revolutions could be correlated to the pellet production rate as follows:

Tons of pellets produced/infeed screw revolution (ton/rev) = tons of pellets produced / number of screw revolutions

From this production factor the facility will then be able to quantify the amount of pellets produced in each line using the following formula:

Tons of pellets produced per hour = number of revolutions of infeed screw (rev/hr) × production factor (lb/rev)

Using the above procedure during the compliance tests, Green Circle determined the hourly production rates for Pellet Line Nos. 1, 2, and 3 to be 21.7, 24.2, and 20.6 TPH (average of three test runs for each pellet line), respectively, and the corresponding number of screw revolutions to be 78.0, 101.1, and 71.0 (average of three test runs for each pellet line), respectively. Using this information, a production factor of 0.268 ton of pellets per revolution was calculated by dividing the production rate by the number of screw revolutions and averaging the results.

The facility will record the number of revolutions of each infeed screw on an hourly basis and use this information and the established production factor of 0.268 ton/revolution to calculate hourly pellet line production. Production quantities will be recorded on an hourly basis and a total production amount calculated and recorded for each pelletizing line on a daily basis. From this a daily average will be calculated and recorded for each pelletizing line and compared to permitted rates.

2.3.2 Aspiration Fabric Filters

The best indicators of fabric filter performance are the outlet PM concentration and a filter leak detection system. Other indicators include the pressure differential across each filter, the inlet temperature, and the exhaust gas flow rate.

For the CMP, Green Circle is monitoring differential pressures ranges for normal operation of the baghouses and spot filters based on operational experience and as provided by their manufacturers. Although the manufacturers were able to provide a range of pressure differentials for normal operation when handling dry products, their experience when handling wet products, as is the case for the aspiration systems, is limited. Accordingly, it was necessary for Green Circle to use their operational experience to supplement the information provided by the manufacturer's of the baghouses and spot filters to establish acceptable pressure differential ranges. This information is summarized in Table 1. Green Circle confirmed that the pressure differential ranges presented in Table 1 were suitable during initial compliance testing.

During normal operations, the facility will measure and record the pressure differential across the inlet and outlet of the filter chambers daily. A reading below the lower end of the range may indicate a malfunction of the filter system (broken bag) or a decrease in filter permeability. A reading in excess of the upper end of the range indicates the filter bags need to be either cleaned or changed. Green Circle has established action values requiring inspection of the baghouses and spot filters when the pressure differential is observed within 1 millibar of either the minimum or maximum compliance values. This information is also presented in Table 1.

2.3.3 Pellet Cooler High-Efficiency Cyclones

The exhaust from the coolers is routed to two high-efficiency cyclones for each line. Cyclone control efficiency is a function of the inlet velocity. As the velocity within the cyclone increases, the inertial forces acting on particles in the gas stream increase, separating the particles from the stream. As the particles impact the cyclone walls, they are collected in a hopper or storage bin. As velocity increases, turbulence forms within the gas stream and disrupts gas flow.

For the cyclones, Green Circle established an acceptable pressure differential range of 1 to 4 inches of water (in. H₂O), based on operational experience and manufacturer's recommendations. This information is included in Table 1. The suitability of this range was confirmed during initial stack testing.

The pressure differential across the cyclones is primarily a function of the inlet velocity. During normal operations, the facility will measure and record the pressure differential across the inlet and outlet of each cyclone. Any measurement outside of the established range will indicate potential inefficiency in the cyclone system in removing PM from the exhaust gas stream.

Again, Green Circle has established action values requiring inspection of the cyclones if the observed pressure differential for the cyclones is less than 1.5 in. H₂O or above 3.5 in. H₂O as summarized in Table 1.

2.3.4 Volatile Organic Compound Emissions

Green Circle intends to establish an emission factor for VOCs in units of pounds of VOC emissions per ton of pellets produced during the initial compliance testing. This factor will be used to calculate monthly VOC emissions, which will be added to the previous 11 months' emissions for comparison to the emission limit of 177.1 TPY on a rolling 12-month total basis.

2.4 Bulk Load-Out Area

Pellets are transported to two sets of storage bins, each set with a capacity of 94 tons, and located above the rail car loading area. The bins provide up to approximately 2 hours of pellet storage and uniformly meter the pellets out for rail car loading. The pellet conveyors are sealed and equipped with continuous air aspiration for dust control. All aspirated air is drawn through dust filters that are designed with an air-to-cloth ratio less than 15 actual cubic feet per minute per square foot (acfm/sf).

2.4.1 Production Quantities

The maximum rate of pellets processed by the Load-Out Area is limited in the facility's Air Construction Permit to 77 TPH (24-hour average). The load-out area is equipped with two load-out lines; each line is equipped with four storage bins. In addition, each line includes a scale. One line at a time will receive pellets for load-out. Once the four bins are filled, the load-out equipment switches to the second line and starts filling the second four bins. The filled bins are weighed before discharging into the rail car. Once the weight has been recorded, the scales are reset to zero. The facility will record the weight of each load-out bin and at the end of the day will compute an hourly average to ensure compliance with the conditions of the permit.

TABLES

TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
001	Wood Fiber Receiving and Storage Area	A.1.	The maximum allowable process rate is 180 incoming trucks per day on a rolling monthly average to be calculated monthly.	NA	Record number of trucks entering the facility.	5,400 trucks per month (180 trucks per day multiplied by 30 days per month) on a daily average basis	5,000 trucks per month recorded at gate.	Front gate notifies the Wood Yard Manager that allowable number of trucks is being approached.	
002	Dryer Line No. 1	B.1.	The maximum operation rate for each Dryer Line shall not exceed 80,220 lb/hr of dry wood (9% moisture or less).	NA	Production rate as determined by the RPM of the three infeed screw sets.	Total of 313.4 revolutions per hour total (104.4 revolutions per hour per each of three screw sets) based on a production factor of 256 pounds of wood chips (9% moisture) produced per revolution.	Maximum hourly rate of 300 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 256 pound of wood chips per revolution of each screw set was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the total hourly number of revolutions of the three screw sets is 80,220 pounds or less.
		B.2.	The maximum operation capacity for each Dryer Line combustor shall not exceed 125 MMBtu/hr heat input averaged over a 24-hour period.	NA	Number of strokes of hydraulic ram feeder to combustor.	51 strokes/hr on a daily average basis.	51 strokes on an hourly basis.	Operations Manager notified that continued operation at or above this rate may exceed allowable heat input limit of 125 MMBtu calculated on a daily average basis.	Based on 4,600 Btu per pound of wood 2.43 MMBtu/stroke as determined during compliance testing. Compliance is demonstrated when the result of dividing the daily number of strokes by 24 hours is less than or equal to 51 strokes.
		B.5.	NO _x emissions in each Dryer Line shall not exceed 122.65 tons per 12-month rolling total.	N	Monthly chip production, hours of the operation of the bypass stacks at full capacity and in idle mode.	12-month rolling total NO _x emission rate of 122.65 TPY or less (see comment).	12-month rolling total NO _x emission rate in excess of 100 TPY (see comment).	Operations Manager notified that 12-month rolling total NO _x emissions are approaching permit limit.	In accordance with Rule 62-210.370, F.A.C., a NO _x emissions factor of 0.331 lb NO _x lb ton of wood chips was developed from stack test results at normal operating mode. For malfunction modes, the emission factors 26.3 lb/hr for the Dryer Bypass Stack Operation, and 0.22 lb/MMBtu furnace bypass stack operation (while operating at either full capacity or in idle mode), as presented in the permit application, will be used. Compliance is demonstrated when annual NO _x emissions on a 12-month rolling total basis from the RTO stack, Dryer Bypass Stack, and the Furnace Bypass Stack, at each operating mode, are 122.65 tons, or less.
		B.6.	PM emissions from each Dryer Line shall not exceed 0.2 lb/MMBtu or 19.9 TPY on a 12-month rolling total calculated monthly.	Y	Stack testing to demonstrate compliance with 0.2 lb/MMBtu limit. WESP Secondary voltage, secondary current, and quench inlet and outlet temperature.	Secondary Voltage: minimum of 30 kV (1-hr avg.) Secondary Current: minimum of 250 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 210°F Quench Outlet Temperature: Maximum of 210°F	Secondary Voltage: minimum of 40 kV (1-hr avg.) Secondary Current: minimum of 325 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 200°F Quench Outlet Temperature: Maximum of 200°F	Operations Manager notified that WESP operating parameters are approaching design limits for proper operation. Should consider increased unit flushing, cleaning, and inspection of the flow line.	Compliance demonstrated when indicated parameters are within the specified ranges.
		B.7.	VOC emissions from each Dryer Line shall not exceed 24.10 TPY per 12-month rolling total.	Y	Temperature of RTO chamber, flow rate through the RTO chamber (fan speed), back pressure, and residence time.	Temperature: Minimum of 1,440°F (when operating); Fan Speed: >99% with corresponding back pressure of less than 10 inches of water (1-hour average).	Temperature: Minimum of 1,475°F (when operating); Fan Speed: >95% with corresponding back pressure of less than 8 inches of water (1-hour average).	Operations Manager notified that RTO operating parameters are approaching design limits for proper operation. Should consider checking the quench water flow, RTO fan speed, propane supply, dryer recirculation rate and the thermocouple used to measure quench water temperature.	The RTO is designed for 1.39 second residence time at 100% fan speed. At stated fan speeds, back pressures in excess of those presented can indicate plugging of RTO chambers and require investigation. Compliance is demonstrated when the temperature of the RTO chamber is greater than 1,440°F, the fan speed and corresponding back pressures are within the specified parameters, which indicate the minimum residence time is met.
		B.11.	Excess emissions resulting from startup, shutdown, or malfunctions, using the Dryer Line and furnace bypass stacks shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period, nor exceed 50 hours per 12-month rolling total for each Dryer Line.	N	Number of hours of operation where dryer and furnace bypass stacks are utilized, and for the furnace, whether the bypass stack is being used during malfunction or idle mode operation.	Dryer Bypass Stack: 50 hours Furnace Bypass Stack (malfunction): 50 hours Furnace Bypass Stack (idle mode): 1,500 hours	Dryer Bypass Stack: 12-month rolling total exceeds 40 hours Furnace Bypass Stack (malfunction): 12-month rolling total exceeds 40 hours Furnace Bypass Stack (idle mode): 12-month rolling total exceeds 1,400 hours	Operations Manager notified that permit limits are being approached for operation of the bypass stacks.	Compliance is demonstrated when the dryer bypass stack are used 50 hours or less on a 12-month rolling total basis, and the furnace bypass stack are used no more than 50 hours at full capacity, or no more than 1,500 hours in idle mode.



TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
003	Dryer Line No. 2	B.1.	The maximum operation rate for each Dryer Line shall not exceed 80,220 lb/hr of dry wood (9% moisture or less).	NA	Production rate as determined by the RPM of the three infeed screw sets.	Total of 313.4 revolutions per hour total (104.4 revolutions per hour per each of three screw sets) based on a production factor of 256 pounds of wood chips (9% moisture) produced per revolution	Maximum hourly rate of 300 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 256 pound of wood chips per revolution of each screw set was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the total hourly number of revolutions of the three screw sets is 80,220 pounds or less.
		B.2.	The maximum operation capacity for each Dryer Line combustor shall not exceed 125 MMBtu/hr heat input averaged over a 24-hour period.	NA	Number of strokes of hydraulic ram feeder to combustor.	51 strokes/hr on a daily average basis.	51 strokes on an hourly basis.	Operations Manager notified that continued operation at or above this rate may exceed allowable heat input limit of 125 MMBtu calculated on a daily average basis.	Based on 4,600 Btu per pound of wood 2.43 MMBtu/stroke as determined during compliance testing. Compliance is demonstrated when the result of dividing the daily number of strokes by 24 hours is less than or equal to 51 strokes.
		B.5.	NO _x emissions in each Dryer Line shall not exceed 122.65 tons per 12-month rolling total.	N	Monthly chip production, hours of the operation of the bypass stacks at full capacity and in idle mode.	12-month rolling total NO _x emission rate of 122.65 TPY or less (see comment).	12-month rolling total NO _x emission rate in excess of 100 TPY (see comment).	Operations Manager notified that 12-month rolling total NO _x emissions are approaching permit limit.	In accordance with Rule 62-210.370, a NO _x emissions factor of 0.331 lb NO _x lb ton of wood chips was developed from stack test results at normal operating mode. For malfunction modes, the emission factors 26.3 lb/hr for the Dryer Bypass Stack Operation, and 0.22 lb/MMBtu furnace bypass stack operation (while operating at either full capacity or in idle mode), as presented in the permit application, will be used. Compliance is demonstrated when annual NO _x emissions on a 12-month rolling total basis from the RTO stack, Dryer Bypass Stack, and the Furnace Bypass Stack, at each operating mode, are 122.65 tons, or less.
		B.6.	PM emission from each Dryer Line shall not exceed 0.2 lb/MMBtu or 19.9 TPY on a 12-month rolling total calculated monthly.	Y	Stack testing to demonstrate compliance with 0.2 lb/MMBtu limit. WESP Secondary voltage, secondary current, and quench inlet and outlet temperature.	Secondary Voltage: minimum of 30 kV (1-hr avg.) Secondary Current: minimum of 250 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 210°F Quench Outlet Temperature: Maximum of 210°F	Secondary Voltage: minimum of 40 kV (1-hr avg.) Secondary Current: minimum of 325 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 200°F Quench Outlet Temperature: Maximum of 200°F	Operations Manager notified that WESP operating parameters are approaching design limits for proper operation. Should consider increased unit flushing, cleaning, and inspection of the flow line.	Compliance demonstrated when indicated parameters are within the specified ranges.
		B.7.	VOC emissions from each Dryer Line shall not exceed 24.10 TPY per 12-month rolling total.	Y	Temperature of RTO chamber, flow rate through the RTO chamber (fan speed), back pressure, and residence time.	Temperature: Minimum of 1,440°F (when operating); Fan Speed: >99% with corresponding back pressure of less than 10 inches of water (1-hour average).	Temperature: Minimum of 1,475°F (when operating); Fan Speed: >95% with corresponding back pressure of less than 8 inches of water (1-hour average).	Operations Manager notified that RTO operating parameters are approaching design limits for proper operation. Should consider checking the quench water flow, RTO fan speed, propane supply, dryer recirculation rate and the thermocouple used to measure quench water temperature.	The RTO is designed for 1.39 second residence time at 100% fan speed. At stated fan speeds, back pressures in excess of those presented can indicate plugging of RTO chambers and require investigation. Compliance is demonstrated when the temperature of the RTO chamber is greater than 1,440°F, the fan speed and corresponding back pressures are within the specified parameters, which indicate the minimum residence time is met.
		B.11.	Excess emissions resulting from startup, shutdown, or malfunctions, using the Dryer Line and furnace bypass stacks shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period, nor exceed 50 hours per 12-month rolling total for each Dryer Line.	N	Number of hours of operation where dryer and furnace bypass stacks are utilized, and for the furnace, whether the bypass stack is being used during malfunction or idle mode operation.	Dryer Bypass Stack: 50 hours Furnace Bypass Stack (malfunction): 50 hours Furnace Bypass Stack (idle mode): 1,500 hours	Dryer Bypass Stack: 12-month rolling total exceeds 40 hours Furnace Bypass Stack (malfunction): 12-month rolling total exceeds 40 hours Furnace Bypass Stack (idle mode): 12-month rolling total exceeds 1,400 hours	Operations Manager notified that daily production limits are being approached.	Compliance is demonstrated when the dryer bypass stack are used 50 hours or less on a 12-month rolling total basis, and the furnace bypass stack are used no more than 50 hours at full capacity, or no more than 1,500 hours in idle mode.



TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
004	Pelletizing Line No. 1	C.1.	The maximum process rate for Pelletizing Line 3 is 23.7 tons of pellets per hour on a 24-hour average basis calculated daily.	NA	Production rate as determined by the RPM of infeed screws.	88.4 revolutions per hour calculated on a 24-hour average basis based on a production factor of 0.268 tons per revolution.	Maximum hourly rate of 88.4 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 0.268 tons of pellets per revolution was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the daily number of revolutions of the screw conveyor divided by 24 hours is 23.7 tons or less.
		C.3.	PM emissions from Pellet Line 1 shall not exceed 59.77 TPY based on a 12-month rolling total.	Y	Monitor pressure differential for the Grinding Infeed Conveyor Aspiration System spot filter (common stack for all three grinding lines), for the Grinding Aspiration System baghouse, for the Pelleting Infeed Conveyor Aspiration System spot filter (common stack for all three pelletizing lines), and for the Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System baghouse.	Grinding Infeed Conveyor Aspiration System spot filters - 2.0 to 8.0 mb Grinding Aspiration System baghouse - 1.0 to 10.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 1.0 to 7.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Infeed Conveyor Aspiration System spot filters - 3.0 to 7.0 mb Grinding Aspiration System baghouse - 2.0 to 9.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 2.0 to 6.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that baghouses and/or spot filters are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all Pelletizing Lines shall not exceed 177.10 TPY on a 12-month rolling total.	N	Monthly pellet production.	Pellet production of 554,303 TPY (total all three lines) on a 12-month rolling total basis.	Pellet production of 500,000 TPY (total all three lines) on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 177.10 tons or less.
005	Pelletizing Line No. 2	C.1.	The maximum process rate for Pelletizing Line 2 is 29.6 tons of pellets per hour on a 24-hour average basis calculated daily.	NA	Production rate as determined by the RPM of infeed screws.	110.4 revolutions per hour calculated on a 24-hour average basis based on a production factor of 0.268 tons per revolution.	Maximum hourly rate of 110.4 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 0.268 tons of pellets per revolution was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the daily number of revolutions of the screw conveyor divided by 24 hours is 29.6 tons or less.
		C.3.	PM emissions from Pellet Line 2 shall not exceed 59.77 TPY based on a 12-month rolling total.	Y	Monitor pressure differential for the Grinding Infeed Conveyor Aspiration System spot filter (common stack for all three grinding lines), for the Grinding Aspiration System baghouse, for the Pelleting Infeed Conveyor Aspiration System spot filter (common stack for all three pelletizing lines), and for the Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System baghouse.	Grinding Infeed Conveyor Aspiration System spot filters - 2.0 to 8.0 mb Grinding Aspiration System baghouse - 1.0 to 10.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 1.0 to 7.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Infeed Conveyor Aspiration System spot filters - 3.0 to 7.0 mb Grinding Aspiration System baghouse - 2.0 to 9.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 2.0 to 6.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that baghouses and/or spot filters are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all Pelletizing Lines shall not exceed 177.10 TPY on a 12-month rolling total.	N	Annual pellet production.	Pellet production of 554,303 TPY (total all three lines) on a 12-month rolling total basis.	Pellet production of 500,000 TPY (total all three lines) on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 177.10 tons or less.



TABLE 1
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GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
006	Pelletizing Line No. 3	C.1.	The maximum process rate for Pelletizing Line 3 is 23.7 tons of pellets per hour on a 24-hour average basis calculated daily.	NA	Production rate as determined by the RPM of infeed screws.	88.4 revolutions per hour calculated on a 24-hour average basis based on a production factor of 0.268 tons per revolution.	Maximum hourly rate of 88.4 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 0.268 tons of pellets per revolution was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the daily number of revolutions of the screw conveyor divided by 24 hours is 23.7 tons or less.
		C.3.	PM emissions from Pellet Line 3 shall not exceed 59.77 TPY based on a 12-month rolling total.	Y	Monitor pressure differential for the Grinding Infeed Conveyor Aspiration System spot filter (common stack for all three grinding lines), for the Grinding Aspiration System baghouse, for the Pelletizing Infeed Conveyor Aspiration System spot filter (common stack for all three pelletizing lines), and for the Pelletizing Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System baghouse.	Grinding Infeed Conveyor Aspiration System spot filters - 2.0 to 8.0 mb Grinding Aspiration System baghouse - 1.0 to 10.0 mb Pelletizing Infeed Conveyor Aspiration System spot filters - 1.0 to 7.0 mb Pelletizing Outfeed Conveyor Aspiration System baghouse - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Infeed Conveyor Aspiration System spot filters - 3.0 to 7.0 mb Grinding Aspiration System baghouse - 2.0 to 9.0 mb Pelletizing Infeed Conveyor Aspiration System spot filters - 2.0 to 6.0 mb Pelletizing Outfeed Conveyor Aspiration System baghouse - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that baghouses and/or spot filters are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all Pelletizing Lines shall not exceed 177.10 TPY on a 12-month rolling total.	N	Annual pellet production.	Pellet production of 554,303 TPY (total all three lines) on a 12-month rolling total basis.	Pellet production of 500,000 TPY (total all three lines) on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 177.10 tons or less.
007	Bulk Load-Out Area	D.1.	The maximum process rate for bulk load out is 77 tons of pellets per hour on a daily average basis.	N	Weight of each load-out storage bin discharge, and record cumulative amount each day.	77 TPH on a daily average basis calculated daily.	70 TPH on a daily average basis calculated daily.	Operations Manager notified that daily production limits are being approached.	Compliance is demonstrated when the result of dividing the daily amount of pellets loaded by 24 hours is 77 tons or less.

NA = not applicable.



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Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
001	Wood Fiber Receiving and Storage Area	A.1.	The maximum allowable process rate is 180 incoming trucks per day on a rolling monthly average to be calculated monthly.	NA	Record number of trucks entering the facility.	5,400 trucks per month (180 trucks per day multiplied by 30 days per month) on a daily average basis	5,000 trucks per month recorded at gate.	Front gate notifies the Wood Yard Manager that allowable number of trucks is being approached.	
002	Dryer Line No. 1	B.1.a., B.1.b.	The maximum operation rate for each Dryer Line shall not exceed 80,220 lb/hr of dry wood (9% moisture or less).	NA	Production rate as determined by the RPM of the three infeed screw sets.	Total of 313.4 revolutions per hour total (104.4 revolutions per hour per each of three screw sets) based on a production factor of 256 pounds of wood chips (9% moisture) produced per revolution.	Maximum hourly rate of 300 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 256 pound of wood chips per revolution of each screw set was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the total hourly number of revolutions of the three screw sets is 80,220 pounds or less.
		B.2.a., B.2.b.	The maximum operation capacity for each Dryer Line combustor shall not exceed 125 MMBtu/hr heat input averaged over a 24-hour period.	NA	Number of strokes of hydraulic ram feeder to combustor.	51 strokes/hr on a daily average basis.	51 strokes on an hourly basis.	Operations Manager notified that continued operation at or above this rate may exceed allowable heat input limit of 125 MMBtu calculated on a daily average basis.	Based on 4,600 Btu per pound of wood 2.43 MMBtu/stroke as determined during compliance testing. Compliance is demonstrated when the result of dividing the daily number of strokes by 24 hours is less than or equal to 51 strokes.
		B.7.	NO _x emissions in each Dryer Line shall not exceed 122.65 tons per 12-month rolling total.	N	Monthly chip production, hours of the operation of the bypass stacks at full capacity and in idle mode.	12-month rolling total NO _x emission rate of 122.65 TPY or less (see comment).	12-month rolling total NO _x emission rate in excess of 100 TPY (see comment).	Operations Manager notified that 12-month rolling total NO _x emissions are approaching permit limit.	In accordance with Rule 62-210.370, F.A.C., a NO _x emissions factor of 0.331 lb NO _x lb ton of wood chips was developed from stack test results at normal operating mode. For malfunction modes, the emission factors 26.3 lb/hr for the Dryer Bypass Stack Operation, and 0.22 lb/MMBtu furnace bypass stack operation (while operating at either full capacity or in idle mode), as presented in the permit application, will be used. Compliance is demonstrated when annual NO _x emissions on a 12-month rolling total basis from the RTO stack, Dryer Bypass Stack, and the Furnace Bypass Stack, at each operating mode, are 122.65 tons, or less.
		B.8.	PM emissions from each Dryer Line shall not exceed 0.2 lb/MMBtu or 19.9 TPY on a 12-month rolling total calculated monthly.	Y	Stack testing to demonstrate compliance with 0.2 lb/MMBtu limit. WESP Secondary voltage, secondary current, and quench inlet and outlet temperature.	Secondary Voltage: minimum of 30 kV (1-hr avg.) Secondary Current: minimum of 250 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 210°F Quench Outlet Temperature: Maximum of 210°F	Secondary Voltage: minimum of 40 kV (1-hr avg.) Secondary Current: minimum of 325 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 200°F Quench Outlet Temperature: Maximum of 200°F	Operations Manager notified that WESP operating parameters are approaching design limits for proper operation. Should consider increased unit flushing, cleaning, and inspection of the flow line.	Compliance demonstrated when indicated parameters are within the specified ranges.
		B.9.	VOC emissions from each Dryer Line shall not exceed 24.10 TPY per 12-month rolling total.	Y	Temperature of RTO chamber, flow rate through the RTO chamber (fan speed), back pressure, and residence time.	Temperature: Minimum of 1,440°F (when operating); Fan Speed: >99% with corresponding back pressure of less than 10 inches of water (1-hour average).	Temperature: Minimum of 1,475°F (when operating); Fan Speed: >95% with corresponding back pressure of less than 8 inches of water (1-hour average).	Operations Manager notified that RTO operating parameters are approaching design limits for proper operation. Should consider checking the quench water flow, RTO fan speed, propane supply, dryer recirculation rate and the thermocouple used to measure quench water temperature.	The RTO is designed for 1.39 second residence time at 100% fan speed. At stated fan speeds, back pressures in excess of those presented can indicate plugging of RTO chambers and require investigation. Compliance is demonstrated when the temperature of the RTO chamber is greater than 1,440°F, the fan speed and corresponding back pressures are within the specified parameters, which indicate the minimum residence time is met.
		B.14.	Excess emissions resulting from startup, shutdown, or malfunctions, using the Dryer Line and furnace bypass stacks shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period, nor exceed 50 hours per 12-month rolling total for each Dryer Line.	N	Number of hours of operation where dryer and furnace bypass stacks are utilized, and for the furnace, whether the bypass stack is being used during malfunction or idle mode operation.	Dryer Bypass Stack: 50 hours Furnace Bypass Stack (malfunction): 50 hours Furnace Bypass Stack (idle mode): 1,500 hours	Dryer Bypass Stack: 12-month rolling total exceeds 40 hours Furnace Bypass Stack (malfunction): 12-month rolling total exceeds 40 hours Furnace Bypass Stack (idle mode): 12-month rolling total exceeds 1,400 hours	Operations Manager notified that permit limits are being approached for operation of the bypass stacks.	Compliance is demonstrated when the dryer bypass stack are used 50 hours or less on a 12-month rolling total basis, and the furnace bypass stack are used no more than 50 hours at full capacity, or no more than 1,500 hours in idle mode.



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GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
003	Dryer Line No. 2	B.1.a., B.1.b.	The maximum operation rate for each Dryer Line shall not exceed 80,220 lb/hr of dry wood (9% moisture or less).	NA	Production rate as determined by the RPM of the three infeed screw sets.	Total of 313.4 revolutions per hour total (104.4 revolutions per hour per each of three screw sets) based on a production factor of 256 pounds of wood chips (9% moisture) produced per revolution	Maximum hourly rate of 300 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 256 pound of wood chips per revolution of each screw set was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the total hourly number of revolutions of the three screw sets is 80,220 pounds or less.
		B.2.a., B.2.b.	The maximum operation capacity for each Dryer Line combustor shall not exceed 125 MMBtu/hr heat input averaged over a 24-hour period.	NA	Number of strokes of hydraulic ram feeder to combustor.	51 strokes/hr on a daily average basis.	51 strokes on an hourly basis.	Operations Manager notified that continued operation at or above this rate may exceed allowable heat input limit of 125 MMBtu calculated on a daily average basis.	Based on 4,600 Btu per pound of wood 2.43 MMBtu/stroke as determined during compliance testing. Compliance is demonstrated when the result of dividing the daily number of strokes by 24 hours is less than or equal to 51 strokes.
		B.7.	NO _x emissions in each Dryer Line shall not exceed 122.65 tons per 12-month rolling total.	N	Monthly chip production, hours of the operation of the bypass stacks at full capacity and in idle mode.	12-month rolling total NO _x emission rate of 122.65 TPY or less (see comment).	12-month rolling total NO _x emission rate in excess of 100 TPY (see comment).	Operations Manager notified that 12-month rolling total NO _x emissions are approaching permit limit.	In accordance with Rule 62-210.370, a NO _x emissions factor of 0.331 lb NO _x lb ton of wood chips was developed from stack test results at normal operating mode. For malfunction modes, the emission factors 26.3 lb/hr for the Dryer Bypass Stack Operation, and 0.22 lb/MMBtu furnace bypass stack operation (while operating at either full capacity or in idle mode), as presented in the permit application, will be used. Compliance is demonstrated when annual NO _x emissions on a 12-month rolling total basis from the RTO stack, Dryer Bypass Stack, and the Furnace Bypass Stack, at each operating mode, are 122.65 tons, or less.
		B.8.	PM emission from each Dryer Line shall not exceed 0.2 lb/MMBtu or 19.9 TPY on a 12-month rolling total calculated monthly.	Y	Stack testing to demonstrate compliance with 0.2 lb/MMBtu limit. WESP Secondary voltage, secondary current, and quench inlet and outlet temperature.	Secondary Voltage: minimum of 30 kV (1-hr avg.) Secondary Current: minimum of 250 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 210°F Quench Outlet Temperature: Maximum of 210°F	Secondary Voltage: minimum of 40 kV (1-hr avg.) Secondary Current: minimum of 325 mA (1-hr avg.) Quench Inlet Temperature: Maximum of 200°F Quench Outlet Temperature: Maximum of 200°F	Operations Manager notified that WESP operating parameters are approaching design limits for proper operation. Should consider increased unit flushing, cleaning, and inspection of the flow line.	Compliance demonstrated when indicated parameters are within the specified ranges.
		B.9.	VOC emissions from each Dryer Line shall not exceed 24.10 TPY per 12-month rolling total.	Y	Temperature of RTO chamber, flow rate through the RTO chamber (fan speed), back pressure, and residence time.	Temperature: Minimum of 1,440°F (when operating); Fan Speed: >99% with corresponding back pressure of less than 10 inches of water (1-hour average).	Temperature: Minimum of 1,475°F (when operating); Fan Speed: >95% with corresponding back pressure of less than 8 inches of water (1-hour average).	Operations Manager notified that RTO operating parameters are approaching design limits for proper operation. Should consider checking the quench water flow, RTO fan speed, propane supply, dryer recirculation rate and the thermocouple used to measure quench water temperature.	The RTO is designed for 1.39 second residence time at 100% fan speed. At stated fan speeds, back pressures in excess of those presented can indicate plugging of RTO chambers and require investigation. Compliance is demonstrated when the temperature of the RTO chamber is greater than 1,440°F, the fan speed and corresponding back pressures are within the specified parameters, which indicate the minimum residence time is met.
		B.14.	Excess emissions resulting from startup, shutdown, or malfunctions, using the Dryer Line and furnace bypass stacks shall be permitted provided that best operational practices to minimize emissions are adhered to and the duration of excess emissions shall be minimized but in no case exceed 2 hours in any 24-hour period, nor exceed 50 hours per 12-month rolling total for each Dryer Line.	N	Number of hours of operation where dryer and furnace bypass stacks are utilized, and for the furnace, whether the bypass stack is being used during malfunction or idle mode operation.	Dryer Bypass Stack: 50 hours Furnace Bypass Stack (malfunction): 50 hours Furnace Bypass Stack (idle mode): 1,500 hours	Dryer Bypass Stack: 12-month rolling total exceeds 40 hours Furnace Bypass Stack (malfunction): 12-month rolling total exceeds 40 hours Furnace Bypass Stack (idle mode): 12-month rolling total exceeds 1,400 hours	Operations Manager notified that daily production limits are being approached.	Compliance is demonstrated when the dryer bypass stack are used 50 hours or less on a 12-month rolling total basis, and the furnace bypass stack are used no more than 50 hours at full capacity, or no more than 1,500 hours in idle mode.



TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
004	Pelletizing Line No. 1	C.1.a.	The maximum process rate for Pelletizing Line 3 is 23.7 tons of pellets per hour on a 24-hour average basis calculated daily.	NA	Production rate as determined by the RPM of infeed screws.	88.4 revolutions per hour calculated on a 24-hour average basis based on a production factor of 0.268 tons per revolution.	Maximum hourly rate of 88.4 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 0.268 tons of pellets per revolution was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the daily number of revolutions of the screw conveyor divided by 24 hours is 23.7 tons or less.
		C.3.	PM emissions from Pellet Line 1 shall not exceed 58.80 TPY based on a 12-month rolling total.	Y	Monitor pressure differential for the Grinding Infeed Conveyor Aspiration System spot filter (common stack for all three grinding lines), for the Grinding Aspiration System baghouse, for the Pelleting Infeed Conveyor Aspiration System spot filter (common stack for all three pelletizing lines), and for the Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System baghouse.	Grinding Infeed Conveyor Aspiration System spot filters - 2.0 to 8.0 mb Grinding Aspiration System baghouse - 1.0 to 10.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 1.0 to 7.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Infeed Conveyor Aspiration System spot filters - 3.0 to 7.0 mb Grinding Aspiration System baghouse - 2.0 to 9.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 2.0 to 6.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that baghouses and/or spot filters are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all Pelletizing Lines shall not exceed 177.10 TPY on a 12-month rolling total.	N	Monthly pellet production.	Pellet production of 554,303 TPY (total all three lines) on a 12-month rolling total basis.	Pellet production of 500,000 TPY (total all three lines) on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 177.10 tons or less.
005	Pelletizing Line No. 2	C.1.a.	The maximum process rate for Pelletizing Line 2 is 29.6 tons of pellets per hour on a 24-hour average basis calculated daily.	NA	Production rate as determined by the RPM of infeed screws.	110.4 revolutions per hour calculated on a 24-hour average basis based on a production factor of 0.268 tons per revolution.	Maximum hourly rate of 110.4 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 0.268 tons of pellets per revolution was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the daily number of revolutions of the screw conveyor divided by 24 hours is 29.6 tons or less.
		C.3.	PM emissions from Pellet Line 2 shall not exceed 58.80 TPY based on a 12-month rolling total.	Y	Monitor pressure differential for the Grinding Infeed Conveyor Aspiration System spot filter (common stack for all three grinding lines), for the Grinding Aspiration System baghouse, for the Pelleting Infeed Conveyor Aspiration System spot filter (common stack for all three pelletizing lines), and for the Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System baghouse.	Grinding Infeed Conveyor Aspiration System spot filters - 2.0 to 8.0 mb Grinding Aspiration System baghouse - 1.0 to 10.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 1.0 to 7.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Infeed Conveyor Aspiration System spot filters - 3.0 to 7.0 mb Grinding Aspiration System baghouse - 2.0 to 9.0 mb Pelleting Infeed Conveyor Aspiration System spot filters - 2.0 to 6.0 mb Pelleting Outfeed Conveyor Aspiration System baghouse - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that baghouses and/or spot filters are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all Pelletizing Lines shall not exceed 177.10 TPY on a 12-month rolling total.	N	Annual pellet production.	Pellet production of 554,303 TPY (total all three lines) on a 12-month rolling total basis.	Pellet production of 500,000 TPY (total all three lines) on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 177.10 tons or less.



TABLE 1
COMPLIANCE MONITORING PLAN SUMMARY
GREEN CIRCLE BIO ENERGY, INC., COTTONDALE WOOD PELLET PLANT

Emission Unit No.	Emission Unit Name	Permit Condition No.	Permit Condition	CAM Applicable? (Y/N)	Monitored Parameter	Compliance Value	Action Value	Action Response	Comment
006	Pelletizing Line No. 3	C.1.a.	The maximum process rate for Pelletizing Line 3 is 23.7 tons of pellets per hour on a 24-hour average basis calculated daily.	NA	Production rate as determined by the RPM of infeed screws.	88.4 revolutions per hour calculated on a 24-hour average basis based on a production factor of 0.268 tons per revolution.	Maximum hourly rate of 88.4 revolutions per hour.	Operations Manager notified that continued hourly operation at this rate will approach permit limits for production.	An average production factor of 0.268 tons of pellets per revolution was measured during compliance testing for the infeed screws. Compliance is demonstrated when the result of multiplying the production factor by the daily number of revolutions of the screw conveyor divided by 24 hours is 23.7 tons or less.
		C.3.	PM emissions from Pellet Line 3 shall not exceed 58.80 TPY based on a 12-month rolling total.	Y	Monitor pressure differential for the Grinding Infeed Conveyor Aspiration System spot filter (common stack for all three grinding lines), for the Grinding Aspiration System baghouse, for the Pelletizing Infeed Conveyor Aspiration System spot filter (common stack for all three pelletizing lines), and for the Pelletizing Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System baghouse.	Grinding Infeed Conveyor Aspiration System spot filters - 2.0 to 8.0 mb Grinding Aspiration System baghouse - 1.0 to 10.0 mb Pelletizing Infeed Conveyor Aspiration System spot filters - 1.0 to 7.0 mb Pelletizing Outfeed Conveyor Aspiration System baghouse - 0.5 to 6.0 mb Cyclones - 1.0 to 4.0 inches of water	Grinding Infeed Conveyor Aspiration System spot filters - 3.0 to 7.0 mb Grinding Aspiration System baghouse - 2.0 to 9.0 mb Pelletizing Infeed Conveyor Aspiration System spot filters - 2.0 to 6.0 mb Pelletizing Outfeed Conveyor Aspiration System baghouse - 1.5 to 5.0 mb Cyclones - 1.5 to 3.5 inches of water	Operations Manager notified that baghouses and/or spot filters are approaching design limits for proper operation.	Compliance values based on vendor design information for proper operation of the control device. Compliance is demonstrated when pressure differentials are measured within the range specified.
		C.5.	VOC emissions from all Pelletizing Lines shall not exceed 177.10 TPY on a 12-month rolling total.	N	Annual pellet production.	Pellet production of 554,303 TPY (total all three lines) on a 12-month rolling total basis.	Pellet production of 500,000 TPY (total all three lines) on a 12-month rolling total basis.	Operations Manager notified that annual production limits are being approached.	An emission factor of 0.639 pounds of VOCs per ton of pellets produced was determined during stack testing. Compliance will be demonstrated when annual VOC emissions are calculated by multiplying the monthly number of tons of pellets produced by the established emission factor and the result added to the previous total for the previous 12 months and the 12-month rolling total is 177.10 tons or less.
007	Bulk Load-Out Area	D.1.	The maximum process rate for bulk load out is 77 tons of pellets per hour on a daily average basis.	N	Weight of each load-out storage bin discharge, and record cumulative amount each day.	77 TPH on a daily average basis calculated daily.	70 TPH on a daily average basis calculated daily.	Operations Manager notified that daily production limits are being approached.	Compliance is demonstrated when the result of dividing the daily amount of pellets loaded by 24 hours is 77 tons or less.

NA = not applicable.



Wet Electrostatic Precipitator				
	Indicator No. 1	Indicator No. 2	Indicator No. 3	Indicator No. 4
Indicator	Secondary Voltage.	Secondary Current.	Quench Water Inlet Temperature.	Quench Water Outlet Temperature.
Measurement Approach	Continuous measurement of secondary voltage.	Continuous measurement of secondary current.	Continuous measurement of the quench water inlet temperature.	Continuous measurement of the quench water outlet temperature.
Indicator Range	An excursion is defined as an average measured secondary voltage for the three chambers of less than 30 kilovolts (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as an average measured secondary current of less than 250 milliamps (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a measured water temperature greater than 210 deg. F (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a measured water temperature greater than 210 deg. F (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The secondary voltage is measured using a volt meter.	The secondary current is measured using an amp meter	The inlet quench water temperature is measured with a thermocouple.	The outlet quench water temperature is measured with a thermocouple.
Verification of Operational Status	NA	NA	NA	NA
QA/QC Practices and Criteria	Confirm the volt meter reads zero when the unit is not operating. Calibrate unit annually.	Confirm the amp meter reads zero when the unit is not operating. Calibrate unit annually.	Calibrate the thermocouple unit annually.	Calibrate the thermocouple unit annually.
Monitoring Frequency	The voltage will be measured every 5 seconds.	The current will be measured every 5 seconds.	The temperature will be measured every 5 seconds.	The temperature will be measured every 5 seconds.
Data Collection Procedures	Hourly averages are computed for each chamber from readings every hour and then averaged together.	Hourly averages are computed for each chamber from readings every hour and then averaged together.	Hourly averages are computed from readings every hour.	Hourly averages are computed from readings every hour.
Averaging Period	1-hour block average.	1-hour block average.	1-hour block average.	1-hour block average.

Regenerative Thermal Oxidizer		
	Indicator No. 1	Indicator No. 2
Indicator	Combustion Chamber Temperature.	Fan Speed
Measurement Approach	Continuous measurement of the combustion chamber temperature.	Continuous measurement of fan speed as a percent (1-hr avg.) with a corresponding measurement of back pressure as an indicator that the proper residence time for the RTO of 1.39 seconds is maintained by not exceeding the design air flow.
Indicator Range	An excursion is defined as an average temperature for the four combustion chambers of less than 1,440 deg. F (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.	An excursion is defined as a measured fan speed greater than 99% (1-hr avg.) with a corresponding back pressure of less than 10 inches of waters (1-hr avg.). Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The combustion chamber temperature is measured with a thermocouple.	The frequency of the variable frequency drive of the fan is measured, where 60 hertz is equivalent to 100% fan speed. The back pressure the RTO is also simultaneously measured with a pressure transmitter as a back pressure greater than 10 inches of water, could incorrectly indicate that the fan is operating at >99%, but in actuality the fan is unable to overcome the back pressure to pull sufficient air through the RTO to result in a drop in residence time.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	Calibrate the thermocouple unit annually.	Calibrate the variable frequency drive and pressure transmitter annually.
Monitoring Frequency	The temperature is measured every 5 seconds.	The fan capacity will be measured every 5 seconds.
Data Collection Procedures	Measure temperature continually recorded hourly.	1-hour averages are computed from readings every hour.
Averaging Period	1-hour block average.	1-hour block average.

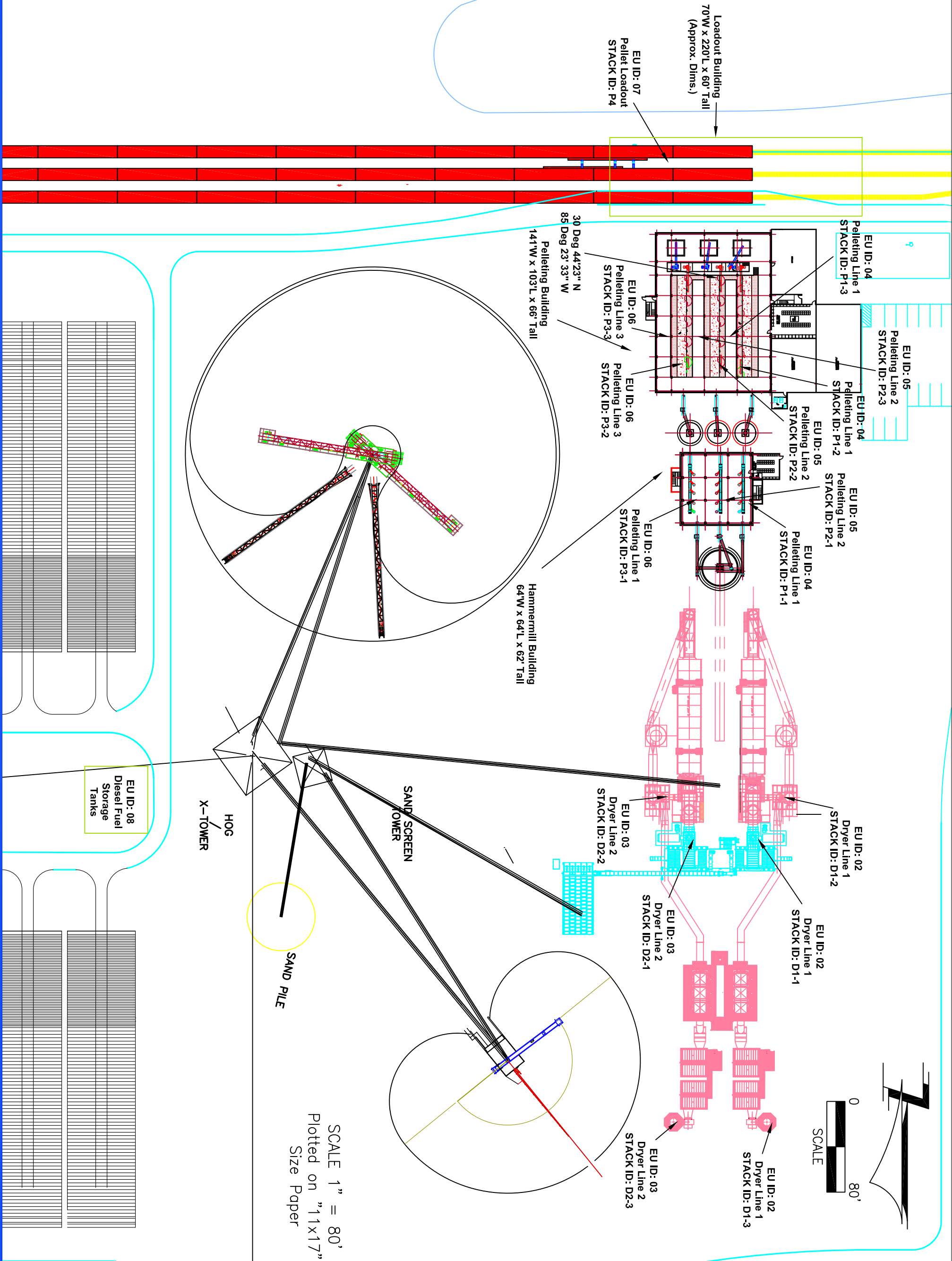
Cyclones	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the cyclone pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 1.0 to 4.0 inches of water. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.

Grinding Infeed Conveyor Aspiration System Spot Filters	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the baghouse pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 2.0 to 8.0 millibars. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.

Grinding Aspiration System Baghouses	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the baghouse pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 1.0 to 10.0 millibars. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.

Pelleting Infeed Conveyor Aspiration System Spot Filters	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the baghouse pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 1.0 to 7.0 millibars. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.

Pelleting Outfeed Conveyor/Pre Cooler Bucket Elevator Aspiration System Baghouses	
	Indicator No. 1
Indicator	Pressure Differential
Measurement Approach	Once per shift measurement of the baghouse pressure differential.
Indicator Range	An excursion is defined as a measured pressure differential outside the range of 0.5 to 6.0 millibars. Excursions trigger an inspection, corrective action, and a reporting requirement.
Data Representativeness	The pressure differential is measured by a magnehelic.
Verification of Operational Status	NA
QA/QC Practices and Criteria	Verify magnehelic unit reads zero when not operating and calibrate the magnehelic annually.
Monitoring Frequency	The pressure differential is measured once per shift.
Data Collection Procedures	The pressure differential is recorded once per shift.
Averaging Period	No averaging period.



APPENDIX CAM

Compliance Assurance Monitoring Requirements

Version Date: May 2010

Compliance Assurance Monitoring Requirements

Pursuant to Rule 62-213.440(1)(b)1.a., F.A.C., the CAM plans that are included in this appendix contain the monitoring requirements necessary to satisfy 40 CFR 64. Conditions 1 – 17 are generic conditions applicable to all emissions units that are subject to the CAM requirements. Specific requirements related to each emissions unit are contained in the attached Appendix CMP, as submitted by the applicant and approved by the Department.

40 CFR 64.6 Approval of Monitoring.

1. The attached CAM plan(s), as submitted by the applicant, is/are approved for the purposes of satisfying the requirements of 40 CFR 64.3. [40 CFR 64.6(a)]
2. The attached CAM plan(s) include the following information:
 - (i) The indicator(s) to be monitored (such as temperature, pressure drop, emissions, or similar parameter);
 - (ii) The means or device to be used to measure the indicator(s) (such as temperature measurement device, visual observation, or CEMS); and
 - (iii) The performance requirements established to satisfy 40 CFR 64.3(b) or (d), as applicable.[40 CFR 64.6(c)(1)]
3. The attached CAM plan(s) describe the means by which the owner or operator will define an exceedance of the permitted limits or an excursion from the stated indicator ranges and averaging periods for purposes of responding to (see **CAM Conditions 5 - 14**) and reporting exceedances or excursions (see **CAM Conditions 15 – 16**). [40 CFR 64.6(c)(2)]
4. The permittee is required to conduct the monitoring specified in the attached CAM plan(s) and shall fulfill the obligations specified in the conditions below (see **CAM Conditions 5. - 16.**). [40 CFR 64.6(c)(3)]

40 CFR 64.7 Operation of Approved Monitoring.

5. Commencement of operation. The owner or operator shall conduct the monitoring required under this appendix upon the effective date of this Title V permit. [40 CFR 64.7(a)]
6. Proper maintenance. At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment. [40 CFR 64.7(b)]
7. Continued operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. 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. [40 CFR 64.7(c)]

8. Response to excursions or exceedances.

- a. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. 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, if allowed by this permit). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or 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.
- b. Determination of whether the owner or operator 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, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

[40 CFR 64.7(d)(1) & (2)]

9. Documentation of need for improved monitoring. If the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters. [40 CFR 64.7(e)]

40 CFR 64.8 Quality Improvement Plan (QIP) Requirements.

10. Based on the results of a determination made under **CAM Condition 8.b.**, above, the permitting authority may require the owner or operator to develop and implement a QIP. Consistent with **CAM Condition 4.**, an accumulation of exceedances or excursions exceeding 5 percent duration of a pollutant-specific emissions unit's operating time for a reporting period, may require the implementation of a QIP. The threshold may be set at a higher or lower percent or may rely on other criteria for purposes of indicating whether a pollutant-specific emissions unit is being maintained and operated in a manner consistent with good air pollution control practices. [40 CFR 64.8(a)]

11. Elements of a QIP:

- a. The owner or operator shall maintain a written QIP, if required, and have it available for inspection.
- b. The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:
 - (i) Improved preventive maintenance practices.
 - (ii) Process operation changes.
 - (iii) Appropriate improvements to control methods.
 - (iv) Other steps appropriate to correct control performance.
 - (v) More frequent or improved monitoring (only in conjunction with one or more steps under **CAM Condition 11.b(i) through (iv)**, above).

[40 CFR 64.8(b)]

12. If a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the permitting authority if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined. [40 CFR 64.8(c)]
13. Following implementation of a QIP, upon any subsequent determination pursuant to **CAM Condition 8.b.**, the permitting authority may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have:
- a. Failed to address the cause of the control device performance problems; or
 - b. Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- [40 CFR 64.8(d)]
14. Implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. [40 CFR 64.8(e)]

40 CFR 64.9 Reporting And Recordkeeping Requirements.

15. General reporting requirements.

- a. Commencing from the effective date of this permit, the owner or operator shall submit monitoring reports semi-annually to the compliance authority in accordance with Rule 62-213.440(1)(b)3.a., F.A.C. In addition to deviations from any other permit requirement, the semi-annual reports shall also include all instances of deviations from the CAM requirements.
- b. A report for monitoring under this part shall include, at a minimum, the information required under Rule 62-213.440(1)(b)3.a., F.A.C., and the following information, as applicable:
 - (i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;
 - (ii) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and
 - (iii) A description of the actions taken to implement a QIP during the reporting period as specified in **CAM Conditions 10 through 14** Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

[40 CFR 64.9(a)]

16. General recordkeeping requirements.

- a. The owner or operator shall comply with the recordkeeping requirements specified in Rule 62-213.440(1)(b)2., F.A.C. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to **CAM Conditions 10 through 14** and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).
- b. Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

[40 CFR 64.9(b)]

40 CFR 64.10 Savings Provisions.

17. It should be noted that nothing in this appendix shall:

- a. Excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. The requirements of this appendix shall not be used to justify the approval of monitoring less stringent than the monitoring which is required under separate legal authority and are not intended to establish minimum requirements for the purpose of determining the monitoring to be imposed under separate authority under the Act, including monitoring in permits issued pursuant to title I of the Act. The purpose of this part is to require, as part of the issuance of a permit under Title V of the Act, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of this part.
- b. Restrict or abrogate the authority of the Administrator or the permitting authority to impose additional or more stringent monitoring, recordkeeping, testing, or reporting requirements on any owner or operator of a source under any provision of the Act, including but not limited to sections 114(a)(1) and 504(b), or state law, as applicable.
- c. Restrict or abrogate the authority of the Administrator or permitting authority to take any enforcement action under the Act for any violation of an applicable requirement or of any person to take action under section 304 of the Act.

[40 CFR 64.10]

APPENDIX ICE

REQUIREMENTS FOR INTERNAL COMBUSTION ENGINES

This Title V facility contains stationary internal combustion engines that have been exempted from the requirement to obtain an air construction permit because they qualify for one of the categorical exemptions listed in Rule 62-210.300(3)(a), Florida Administrative Code (F.A.C.). However, they are included in this permit as regulated emissions units because they are subject to one or more of the following federal rules:

- 40 CFR 60, Subpart IIII—Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.
- 40 CFR 60, Subpart JJJJ—Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.
- 40 CFR 63, Subpart ZZZZ—National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines.

The below listed engines are subject to the specified federal rules.

<u>E.U. ID</u>	<u>Year</u>	<u>Displacement or</u>	<u>Rule Applicability</u>
<u>No.</u>	<u>Built</u>	<u>Horsepower</u>	
010	Emergency Fire Pump Engine (CI-ICE)	2007	110 Hp
			40 CFR 60 IIII

The engines listed above are currently demonstrating compliance with the emissions limitations of the applicable federal rule through the retention of a manufacturer's certification statement. So long as that certification is able to be retained, no additional compliance demonstration is required. At such time that the manufacturer's certification is no longer valid (i.e. due to operation or maintenance practices that are inconsistent with the manufacturer's recommendations), the permittee shall begin demonstrating compliance with the standards listed in the applicable federal rule (included in the appendices as an enforceable part of this permit) in a manner that is prescribed by that rule.

Appendix A-1, Abbreviations, Acronyms, Citations, and Identification Numbers

Abbreviations and Acronyms:

°F: Degrees Fahrenheit
BACT: Best Available Control Technology
CFR: Code of Federal Regulations
DEP: State of Florida, Department of Environmental Protection
DARM: Division of Air Resource Management
EPA: United States Environmental Protection Agency
F.A.C.: Florida Administrative Code
F.S.: Florida Statute
ISO: International Standards Organization
LAT: Latitude
LONG: Longitude
MMBtu: million British thermal units
MW: Megawatt
ORIS: Office of Regulatory Information Systems
SOA: Specific Operating Agreement
UTM: Universal Transverse Mercator

Citations:

The following examples illustrate the methods used in this permit to abbreviate and cite the references of rules, regulations, guidance memorandums, permit numbers, and ID numbers.

Code of Federal Regulations:

Example: [40 CFR 60.334]

Where:	40	reference to	Title 40
	CFR	reference to	Code of Federal Regulations
	60	reference to	Part 60
	60.334	reference to	Regulation 60.334

Florida Administrative Code (F.A.C.) Rules:

Example: [Rule 62-213, F.A.C.]

Where:	62	reference to	Title 62
	62-213	reference to	Chapter 62-213
	62-213.205	reference to	Rule 62-213.205, F.A.C.

ISO: International Standards Organization refers to those conditions at 288 degrees K, 60 percent relative humidity, and 101.3 kilopascals pressure.

**Appendix A-1, Abbreviations, Acronyms, Citations, and Identification Numbers
(version dated 02/05/97) (continued)**

Identification Numbers:

Facility Identification (ID) Number:

Example: Facility ID No.: 1050221

Where:

105	=	3-digit number code identifying the facility is located in Polk County
0221	=	4-digit number assigned by state database.

Permit Numbers:

Example: 1050221-002-AV, or
1050221-001-AC

Where:

AC	=	Air Construction Permit
AV	=	Air Operation Permit (Title V Source)
105	=	3-digit number code identifying the facility is located in Polk County
0221	=	4-digit number assigned by permit tracking database
001 or 002	=	3-digit sequential project number assigned by permit tracking database

Example: PSD-FL-185
PA95-01
AC53-208321

Where:

PSD	=	Prevention of Significant Deterioration Permit
PA	=	Power Plant Siting Act Permit
AC	=	old Air Construction Permit numbering

Federal Regulations Adopted by Reference

In accordance with Rule 62-204.800, F.A.C., the following federal regulation in Title 40 of the Code of Federal Regulations (CFR) was adopted by reference. The original federal rule numbering has been retained.

Federal Revision Date: January 28, 2009

State Rule Effective Date: November 18, 2009

Standardized Conditions Revision Date: February 5, 2010

Subpart A-General Provisions

40 CFR 60.1 - Applicability

- (a) Except as provided in Subparts B and C, the provisions of this part apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of any standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.
- (b) Any new or revised standard of performance promulgated pursuant to section 111(b) of the Act shall apply to the owner or operator of any stationary source which contains an affected facility, the construction or modification of which is commenced after the date of publication in this part of such new or revised standard (or, if earlier, the date of publication of any proposed standard) applicable to that facility.
- (c) In addition to complying with the provisions of this part, the owner or operator of an affected facility may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to Title V of the Clean Air Act (Act) as amended November 15, 1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see 40 CFR 70 of this chapter.
- (d) Site-specific standard for Merck & Co., Inc.'s Stonewall Plant in Elkton, Virginia. {Not Applicable}

[40 FR 53346, Nov. 17, 1975, as amended at 55 FR 51382, Dec. 13, 1990; 59 FR 12427, Mar. 16, 1994; 62 FR 52641, Oct. 8, 1997]

40 CFR 60.2 - Definitions

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 et seq.)

Administrator means the Administrator of the Environmental Protection Agency or his authorized representative.

Affected facility means, with reference to a stationary source, any apparatus to which a standard is applicable.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference or equivalent method but which has been demonstrated to the Administrator's satisfaction to, in specific cases, produce results adequate for his determination of compliance.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of 40 CFR 70 of this chapter or a Federal permit program established in this chapter pursuant to Title V of the Act (42 U.S.C. 7661).

Capital expenditure means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair allowance percentage" specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the existing facility's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes.

Clean coal technology demonstration project means a project using funds appropriated under the heading 'Department of Energy-Clean Coal Technology', up to a total amount of \$2,500,000,000 for commercial demonstrations of clean coal technology, or similar projects funded through appropriations for the Environmental Protection Agency.

Commenced means, with respect to the definition of *new source* in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a

contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Construction means fabrication, erection, or installation of an affected facility.

Continuous monitoring system means the total equipment, required under the emission monitoring sections in applicable Subparts, used to sample and condition (if applicable), to analyze, and to provide a permanent record of emissions or process parameters.

Electric utility steam generating unit means any steam electric generating unit that is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electrical output to any utility power distribution system for sale. Any steam supplied to a steam distribution system for the purpose of providing steam to a steam-electric generator that would produce electrical energy for sale is also considered in determining the electrical energy output capacity of the affected facility.

Equivalent method means any method of sampling and analyzing for an air pollutant which has been demonstrated to the Administrator's satisfaction to have a consistent and quantitatively known relationship to the reference method, under specified conditions.

Excess Emissions and Monitoring Systems Performance Report is a report that must be submitted periodically by a source in order to provide data on its compliance with stated emission limits and operating parameters, and on the performance of its monitoring systems.

Existing facility means, with reference to a stationary source, any apparatus of the type for which a standard is promulgated in this part, and the construction or modification of which was commenced before the date of proposal of that standard; or any apparatus which could be altered in such a way as to be of that type.

Force majeure means, for purposes of 40 CFR 60.8, an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents the owner or operator from complying with the regulatory requirement to conduct performance tests within the specified timeframe despite the affected facility's best efforts to fulfill the obligation. Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility.

Isokinetic sampling means sampling in which the linear velocity of the gas entering the sampling nozzle is equal to that of the undisturbed gas stream at the sample point.

Issuance of a 40 CFR 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of 40 CFR 70 of this chapter and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a Title V permit occurs immediately after the EPA takes final action on the final permit.

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. Failures that are caused in part by poor maintenance or careless operation are not malfunctions.

Modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted.

Monitoring device means the total equipment, required under the monitoring of operations sections in applicable Subparts, used to measure and record (if applicable) process parameters.

Nitrogen oxides means all oxides of nitrogen except nitrous oxide, as measured by test methods set forth in this part.

One-hour period means any 60-minute period commencing on the hour.

Opacity means the degree to which emissions reduce the transmission of light and obscure the view of an object in the background.

Owner or operator means any person who owns, leases, operates, controls, or supervises an affected facility or a stationary source of which an affected facility is a part.

Part 70 permit means any permit issued, renewed, or revised pursuant to 40 CFR 70 of this chapter.

Particulate matter means any finely divided solid or liquid material, other than uncombined water, as measured by the reference methods specified under each applicable Subpart, or an equivalent or alternative method.

Permit program means a comprehensive State operating permit system established pursuant to Title V of the Act (42 U.S.C. 7661) and regulations codified in 40 CFR 70 of this chapter and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to Title V of the Act and regulations codified in this chapter.

Permitting authority means:

- (1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under 40 CFR 70 of this chapter; or
- (2) The Administrator, in the case of EPA-implemented permit programs under Title V of the Act (42 U.S.C. 7661).

Proportional sampling means sampling at a rate that produces a constant ratio of sampling rate to stack gas flow rate.

Reactivation of a very clean coal-fired electric utility steam generating unit means any physical change or change in the method of operation associated with the commencement of commercial operations by a coal-fired utility unit after a period of discontinued operation where the unit:

- (1) Has not been in operation for the two-year period prior to the enactment of the Clean Air Act Amendments of 1990, and the emissions from such unit continue to be carried in the permitting authority's emissions inventory at the time of enactment;
- (2) Was equipped prior to shut-down with a continuous system of emissions control that achieves a removal efficiency for sulfur dioxide of no less than 85 percent and a removal efficiency for particulates of no less than 98 percent;
- (3) Is equipped with low-NO_x burners prior to the time of commencement of operations following reactivation; and
- (4) Is otherwise in compliance with the requirements of the Clean Air Act.

Reference method means any method of sampling and analyzing for an air pollutant as specified in the applicable Subpart.

Repowering means replacement of an existing coal-fired boiler with one of the following clean coal technologies: atmospheric or pressurized fluidized bed combustion, integrated gasification combined cycle, magnetohydrodynamics, direct and indirect coal-fired turbines, integrated gasification fuel cells, or as determined by the Administrator, in consultation with the Secretary of Energy, a derivative of one or more of these technologies, and any other technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of November 15, 1990. Repowering shall also include any oil and/or gas-fired unit which has been awarded clean coal technology demonstration funding as of January 1, 1991, by the Department of Energy.

Run means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Shutdown means the cessation of operation of an affected facility for any purpose.

Six-minute period means any one of the 10 equal parts of a one-hour period.

Standard means a standard of performance proposed or promulgated under this part.

Standard conditions means a temperature of 293 °K (68 °F) and a pressure of 101.3 kilopascals (29.92 in Hg).

Startup means the setting in operation of an affected facility for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement: (1) The provisions of this part; and/or (2) the permit program established under 40 CFR 70 of this chapter. The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement Title V of the Act (42 U.S.C. 7661). A Title V permit issued by a State permitting authority is called a 40 CFR 70 permit in this part.

Volatile Organic Compound means any organic compound which participates in atmospheric photochemical reactions; or which is measured by a reference method, an equivalent method, an alternative method, or which is determined by procedures specified under any Subpart.

[44 FR 55173, Sept. 25, 1979, as amended at 45 FR 5617, Jan. 23, 1980; 45 FR 85415, Dec. 24, 1980; 54 FR 6662, Feb. 14, 1989; 55 FR 51382, Dec. 13, 1990; 57 FR 32338, July 21, 1992; 59 FR 12427, Mar. 16, 1994; 72 FR 27442, May 16, 2007]

40 CFR 60.3 - Units and abbreviations

Used in this part are abbreviations and symbols of units of measure. These are defined as follows:

(a) System International (SI) units of measure:

A - ampere
g - gram
Hz - hertz
J - joule
K - degree Kelvin
kg - kilogram
m - meter
m³ - cubic meter
mg – milligram - 10⁻³ gram
mm – millimeter - 10⁻³ meter
Mg - megagram - 10⁶ gram
mol - mole
N - newton
ng – nanogram - 10⁻⁹ gram
nm - nanometer - 10⁻⁹ meter
Pa - pascal
s - second
V - volt
W - watt
Ω - ohm
μg – microgram - 10⁻⁶ gram

(b) Other units of measure:

Btu - British thermal unit
°C - degree Celsius (centigrade)
cal - calorie
cfm - cubic feet per minute
cu ft - cubic feet
dcf - dry cubic feet
dcm - dry cubic meter
dscf - dry cubic feet at standard conditions
dscm - dry cubic meter at standard conditions
eq - equivalent
°F - degree Fahrenheit
ft - feet
gal - gallon
gr - grain
g-eq - gram equivalent
hr - hour
in - inch
k - 1,000
l - liter
lpm - liter per minute
lb - pound
meq - milliequivalent
min - minute
ml - milliliter
mol. wt. - molecular weight
ppb - parts per billion
ppm - parts per million

psia - pounds per square inch absolute
psig - pounds per square inch gage
°R - degree Rankine
Scf - cubic feet at standard conditions
Scfh - cubic feet per hour at standard conditions
Scm - cubic meter at standard conditions
Sec - second
sq ft - square feet
std - at standard conditions

(c) Chemical nomenclature:

CdS - cadmium sulfide
CO - carbon monoxide
CO₂ - carbon dioxide
HCl - hydrochloric acid
Hg - mercury
H₂O - water
H₂S - hydrogen sulfide
H₂SO₄ - sulfuric acid
N₂ - nitrogen
NO - nitric oxide
NO₂ - nitrogen dioxide
NO_x - nitrogen oxides
O₂ - oxygen
SO₂ - sulfur dioxide
SO₃ - sulfur trioxide
SO_x - sulfur oxides

(d) Miscellaneous:

A.S.T.M.-American Society for Testing and Materials

[42 FR 37000, July 19, 1977; 42 FR 38178, July 27, 1977]

40 CFR 60.4 - Address

All addresses that pertain to Florida have been incorporated. To see the complete list of addresses please go to <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div6&view=text&node=40:6.0.1.1.1.1&idno=40>.

[Link to an amendment published at 73 FR 18164, Apr. 3, 2008.](#)

- (a) All requests, reports, applications, submittals, and other communications to the Administrator pursuant to this part shall be submitted in duplicate to the appropriate Regional Office of the U.S. Environmental Protection Agency to the attention of the Director of the Division indicated in the following list of EPA Regional Offices.

Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee), Director, Air and Waste Management Division, U.S. Environmental Protection Agency, 345 Courtland Street, NE., Atlanta, GA 30365.

- (b) Section 111(c) directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce standards of performance for new stationary sources located in such State. All information required to be submitted to EPA under paragraph (a) of this section, must also be submitted to the appropriate State Agency of any State to which this authority has been delegated (provided, that each specific delegation may except sources from a certain Federal or State reporting requirement). The appropriate mailing address for those States whose delegation request has been approved is as follows:

(K) Bureau of Air Quality Management, Department of Environmental Regulation, Twin Towers Office Building, 2600 Blair Stone Road, Tallahassee, FL 32301.

[40 FR 18169, Apr. 25, 1975]

Editorial Note: For Federal Register citations affecting 40 CFR 60.4 see the List of CFR Sections Affected which appears in the Finding Aids section of the printed volume and on GPO Access.

40 CFR 60.5 - Determination of construction or modification

- (a) When requested to do so by an owner or operator, the Administrator will make a determination of whether action taken or intended to be taken by such owner or operator constitutes construction (including reconstruction) or modification or the commencement thereof within the meaning of this part.
- (b) The Administrator will respond to any request for a determination under paragraph (a) of this section within 30 days of receipt of such request.

[40 FR 58418, Dec. 16, 1975]

40 CFR 60.6 - Review of plans

- (a) When requested to do so by an owner or operator, the Administrator will review plans for construction or modification for the purpose of providing technical advice to the owner or operator.
- (b)
 - (1) A separate request shall be submitted for each construction or modification project.
 - (2) Each request shall identify the location of such project, and be accompanied by technical information describing the proposed nature, size, design, and method of operation of each affected facility involved in such project, including information on any equipment to be used for measurement or control of emissions.
- (c) Neither a request for plans review nor advice furnished by the Administrator in response to such request shall (1) relieve an owner or operator of legal responsibility for compliance with any provision of this part or of any applicable State or local requirement, or (2) prevent the Administrator from implementing or enforcing any provision of this part or taking any other action authorized by the Act.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974]

40 CFR 60.7 - Notification and record keeping

- (a) Any owner or operator subject to the provisions of this part shall furnish the Administrator written notification or, if acceptable to both the Administrator and the owner or operator of a source, electronic notification, as follows:
 - (1) A notification of the date construction (or reconstruction as defined under 40 CFR 60.15) of an affected facility is commenced postmarked no later than 30 days after such date. This requirement shall not apply in the case of mass-produced facilities which are purchased in completed form.
 - (2) [Reserved]
 - (3) A notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.
 - (4) A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted under an applicable Subpart or in 40 CFR 60.14(e). This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.
 - (5) A notification of the date upon which demonstration of the continuous monitoring system performance commences in accordance with 40 CFR 60.13(c). Notification shall be postmarked not less than 30 days prior to such date.
 - (6) A notification of the anticipated date for conducting the opacity observations required by 40 CFR 60.11(e)(1) of this part. The notification shall also include, if appropriate, a request for the Administrator to provide a visible emissions reader during a performance test. The notification shall be postmarked not less than 30 days prior to such date.
 - (7) A notification that continuous opacity monitoring system data results will be used to determine compliance with the applicable opacity standard during a performance test required by 40 CFR 60.8 in lieu of Method 9 observation data

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as allowed by 40 CFR 60.11(e)(5) of this part. This notification shall be postmarked not less than 30 days prior to the date of the performance test.

- (b) Any owner or operator subject to the provisions of this part shall maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative.
- (c) Each owner or operator required to install a continuous monitoring device shall submit excess emissions and monitoring systems performance report (excess emissions are defined in applicable Subparts) and/or summary report form (see paragraph (d) of this section) to the Administrator semiannually, except when: more frequent reporting is specifically required by an applicable Subpart; or the Administrator, on a case-by-case basis, determines that more frequent reporting is necessary to accurately assess the compliance status of the source. All reports shall be postmarked by the 30th day following the end of each six-month period. Written reports of excess emissions shall include the following information:
 - (1) The magnitude of excess emissions computed in accordance with 40 CFR 60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.
 - (2) Specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.
 - (3) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.
 - (4) When no excess emissions have occurred or the continuous monitoring system(s) have not been inoperative, repaired, or adjusted, such information shall be stated in the report.
- (d) The summary report form shall contain the information and be in the format shown in figure 1 unless otherwise specified by the Administrator. One summary report form shall be submitted for each pollutant monitored at each affected facility.
 - (1) If the total duration of excess emissions for the reporting period is less than 1 percent of the total operating time for the reporting period and CMS downtime for the reporting period is less than 5 percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in 40 CFR 60.7(c) need not be submitted unless requested by the Administrator.
 - (2) If the total duration of excess emissions for the reporting period is 1 percent or greater of the total operating time for the reporting period or the total CMS downtime for the reporting period is 5 percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in 40 CFR 60.7(c) shall both be submitted.

Figure 1 - Summary Report - Gaseous and Opacity Excess Emission and Monitoring System Performance

Pollutant (Circle One—SO₂/NO_x/TRS/H₂S/CO/Opacity)

Reporting period dates: From _____ to _____

Company: _____

Emission Limitation _____

Address: _____

Monitor Manufacturer and Model No. _____

Date of Latest CMS Certification or Audit _____

Process Unit(s) Description: _____

Total source operating time in reporting period¹ _____

Emission data summary ¹		CMS performance summary ¹	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Startup/shutdown		a. Monitor equipment malfunctions	
b. Control equipment problems		b. Non-Monitor equipment malfunctions	
c. Process problems		c. Quality assurance calibration	
d. Other known causes		d. Other known causes	

e. Unknown causes		e. Unknown causes	
2. Total duration of excess emission		2. Total CMS Downtime	
3. Total duration of excess emissions \times (100) [Total source operating time]	% ²	3. [Total CMS Downtime] \times (100) [Total source operating time]	% ²

²For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report described in 40 CFR 60.7(c) shall be submitted.

Name	Signature
Title	Date

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permanent form suitable for inspection. The file shall be retained for at least two years following the date of such measurements, maintenance, reports, and records, except as follows:

- (1) This paragraph applies to owners or operators required to install a continuous emissions monitoring system (CEMS) where the CEMS installed is automated, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. An automated CEMS records and reduces the measured data to the form of the pollutant emission standard through the use of a computerized data acquisition system. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain the most recent consecutive three averaging periods of subhourly measurements and a file that contains a hard copy of the data acquisition system algorithm used to reduce the measured data into the reportable form of the standard.
 - (2) This paragraph applies to owners or operators required to install a CEMS where the measured data is manually reduced to obtain the reportable form of the standard, and where the calculated data averages do not exclude periods of CEMS breakdown or malfunction. In lieu of maintaining a file of all CEMS subhourly measurements as required under paragraph (f) of this section, the owner or operator shall retain all subhourly measurements for the most recent reporting period. The subhourly measurements shall be retained for 120 days from the date of the most recent summary or excess emission report submitted to the Administrator.
 - (3) The Administrator or delegated authority, upon notification to the source, may require the owner or operator to maintain all measurements as required by paragraph (f) of this section, if the Administrator or the delegated authority determines these records are required to more accurately assess the compliance status of the affected source.
- (g) If notification substantially similar to that in paragraph (a) of this section is required by any other State or local agency, sending the Administrator a copy of that notification will satisfy the requirements of paragraph (a) of this section.
- (h) Individual Subparts of this part may include specific provisions which clarify or make inapplicable the provisions set forth in this section.

[36 FR 24877, Dec. 28, 1971, as amended at 40 FR 46254, Oct. 6, 1975; 40 FR 58418, Dec. 16, 1975; 45 FR 5617, Jan. 23, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 53113, Dec. 27, 1985; 52 FR 9781, Mar. 26, 1987; 55 FR 51382, Dec. 13, 1990; 59 FR 12428, Mar. 16, 1994; 59 FR 47265, Sep. 15, 1994; 64 FR 7463, Feb. 12, 1999]

40 CFR 60.8 - Performance tests

- (a) Except as specified in paragraphs (a)(1), (a)(2), (a)(3), and (a)(4) of this section, within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial startup of such facility, or at such other times specified by this part, and at such other times as may be required by the Administrator under section 114 of the Act, the owner or operator of such facility shall conduct performance test(s) and furnish the Administrator a written report of the results of such performance test(s).
- (1) If a force majeure is about to occur, occurs, or has occurred for which the affected owner or operator intends to assert a claim of force majeure, the owner or operator shall notify the Administrator, in writing as soon as practicable following the date the owner or operator first knew, or through due diligence should have known that the event may cause or caused a delay in testing beyond the regulatory deadline, but the notification must occur before the performance test deadline unless the initial force majeure or a subsequent force majeure event delays the notice, and in such cases, the notification shall occur as soon as practicable.
 - (2) The owner or operator shall provide to the Administrator a written description of the force majeure event and a rationale for attributing the delay in testing beyond the regulatory deadline to the force majeure; describe the measures taken or to be taken to minimize the delay; and identify a date by which the owner or operator proposes to conduct the performance test. The performance test shall be conducted as soon as practicable after the force majeure occurs.
 - (3) The decision as to whether or not to grant an extension to the performance test deadline is solely within the discretion of the Administrator. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an extension as soon as practicable.
 - (4) Until an extension of the performance test deadline has been approved by the Administrator under paragraphs (a)(1), (2), and (3) of this section, the owner or operator of the affected facility remains strictly subject to the requirements of this part.

- (b) Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable Subpart unless the Administrator (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance, (4) waives the requirement for performance tests because the owner or operator of a source has demonstrated by other means to the Administrator's satisfaction that the affected facility is in compliance with the standard, or (5) approves shorter sampling times and smaller sample volumes when necessitated by process variables or other factors. Nothing in this paragraph shall be construed to abrogate the Administrator's authority to require testing under section 114 of the Act.
- (c) Performance tests shall be conducted under such conditions as the Administrator shall specify to the plant operator based on representative performance of the affected facility. The owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of the performance tests. Operations during periods of startup, shutdown, and malfunction shall not constitute representative conditions for the purpose of a performance test nor shall emissions in excess of the level of the applicable emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.
- (d) The owner or operator of an affected facility shall provide the Administrator at least 30 days prior notice of any performance test, except as specified under other Subparts, to afford the Administrator the opportunity to have an observer present. If after 30 days notice for an initially scheduled performance test, there is a delay (due to operational problems, etc.) in conducting the scheduled performance test, the owner or operator of an affected facility shall notify the Administrator (or delegated State or local agency) as soon as possible of any delay in the original test date, either by providing at least 7 days prior notice of the rescheduled date of the performance test, or by arranging a rescheduled date with the Administrator (or delegated State or local agency) by mutual agreement.
- (e) The owner or operator of an affected facility shall provide, or cause to be provided, performance testing facilities as follows:
 - (1) Sampling ports adequate for test methods applicable to such facility. This includes (i) constructing the air pollution control system such that volumetric flow rates and pollutant emission rates can be accurately determined by applicable test methods and procedures and (ii) providing a stack or duct free of cyclonic flow during performance tests, as demonstrated by applicable test methods and procedures.
 - (2) Safe sampling platform(s).
 - (3) Safe access to sampling platform(s).
 - (4) Utilities for sampling and testing equipment.
- (f) Unless otherwise specified in the applicable Subpart, each performance test shall consist of three separate runs using the applicable test method. Each run shall be conducted for the time and under the conditions specified in the applicable standard. For the purpose of determining compliance with an applicable standard, the arithmetic means of results of the three runs shall apply. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of forced shutdown, failure of an irreplaceable portion of the sample train, extreme meteorological conditions, or other circumstances, beyond the owner or operator's control, compliance may, upon the Administrator's approval, be determined using the arithmetic mean of the results of the two other runs.

[36 FR 24877, Dec. 23, 1971, as amended at 39 FR 9314, Mar. 8, 1974; 42 FR 57126, Nov. 1, 1977; 44 FR 33612, June 11, 1979; 54 FR 6662, Feb. 14, 1989; 54 FR 21344, May 17, 1989; 64 FR 7463, Feb. 12, 1999; 72 FR 27442, May 16, 2007]

40 CFR 60.9 - Availability of information

The availability to the public of information provided to, or otherwise obtained by, the Administrator under this part shall be governed by part 2 of this chapter. (Information submitted voluntarily to the Administrator for the purposes of 40 CFR 60.5 and 60.6 is governed by 40 CFR 2.201 through 2.213 of this chapter and not by 40 CFR 2.301 of this chapter.)

40 CFR 60.10 - State authority

The provisions of this part shall not be construed in any manner to preclude any State or political subdivision thereof from:

- (a) Adopting and enforcing any emission standard or limitation applicable to an affected facility, provided that such emission standard or limitation is not less stringent than the standard applicable to such facility.
- (b) Requiring the owner or operator of an affected facility to obtain permits, licenses, or approvals prior to initiating construction, modification, or operation of such facility.

40 CFR 60.11 - Compliance with standards and maintenance requirements

- (a) Compliance with standards in this part, other than opacity standards, shall be determined in accordance with performance tests established by 40 CFR 60.8, unless otherwise specified in the applicable standard.
- (b) Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Method 9 in Appendix A of this part, any alternative method that is approved by the Administrator, or as provided in paragraph (e)(5) of this section. For purposes of determining initial compliance, the minimum total time of observations shall be 3 hours (30 6-minute averages) for the performance test or other set of observations (meaning those fugitive-type emission sources subject only to an opacity standard).
- (c) The opacity standards set forth in this part shall apply at all times except during periods of startup, shutdown, malfunction, and as otherwise provided in the applicable standard.
- (d) At all times, including periods of startup, shutdown, and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating 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, opacity observations, review of operating and maintenance procedures, and inspection of the source.
- (e)
 - (1) For the purpose of demonstrating initial compliance, opacity observations shall be conducted concurrently with the initial performance test required in 40 CFR 60.8 unless one of the following conditions apply. If no performance test under 40 CFR 60.8 is required, then opacity observations shall be conducted within 60 days after achieving the maximum production rate at which the affected facility will be operated but no later than 180 days after initial startup of the facility. If visibility or other conditions prevent the opacity observations from being conducted concurrently with the initial performance test required under 40 CFR 60.8, the source owner or operator shall reschedule the opacity observations as soon after the initial performance test as possible, but not later than 30 days thereafter, and shall advise the Administrator of the rescheduled date. In these cases, the 30-day prior notification to the Administrator required in 40 CFR 60.7(a)(6) shall be waived. The rescheduled opacity observations shall be conducted (to the extent possible) under the same operating conditions that existed during the initial performance test conducted under 40 CFR 60.8. The visible emissions observer shall determine whether visibility or other conditions prevent the opacity observations from being made concurrently with the initial performance test in accordance with procedures contained in Method 9 of Appendix B of this part. Opacity readings of portions of plumes which contain condensed, uncombined water vapor shall not be used for purposes of determining compliance with opacity standards. The owner or operator of an affected facility shall make available, upon request by the Administrator, such records as may be necessary to determine the conditions under which the visual observations were made and shall provide evidence indicating proof of current visible observer emission certification. Except as provided in paragraph (e)(5) of this section, the results of continuous monitoring by transmissometer which indicate that the opacity at the time visual observations were made was not in excess of the standard are probative but not conclusive evidence of the actual opacity of an emission, provided that the source shall meet the burden of proving that the instrument used meets (at the time of the alleged violation) Performance Specification 1 in Appendix B of this part, has been properly maintained and (at the time of the alleged violation) that the resulting data have not been altered in any way.
 - (2) Except as provided in paragraph (e)(3) of this section, the owner or operator of an affected facility to which an opacity standard in this part applies shall conduct opacity observations in accordance with paragraph (b) of this section, shall record the opacity of emissions, and shall report to the Administrator the opacity results along with the results of the initial performance test required under 40 CFR 60.8. The inability of an owner or operator to secure a visible emissions observer shall not be considered a reason for not conducting the opacity observations concurrent with the initial performance test.
 - (3) The owner or operator of an affected facility to which an opacity standard in this part applies may request the Administrator to determine and to record the opacity of emissions from the affected facility during the initial performance test and at such times as may be required. The owner or operator of the affected facility shall report the

opacity results. Any request to the Administrator to determine and to record the opacity of emissions from an affected facility shall be included in the notification required in 40 CFR 60.7(a)(6). If, for some reason, the Administrator cannot determine and record the opacity of emissions from the affected facility during the performance test, then the provisions of paragraph (e)(1) of this section shall apply.

- (4) An owner or operator of an affected facility using a continuous opacity monitor (transmissometer) shall record the monitoring data produced during the initial performance test required by 40 CFR 60.8 and shall furnish the Administrator a written report of the monitoring results along with Method 9 and 40 CFR 60.8 performance test results.
- (5) An owner or operator of an affected facility subject to an opacity standard may submit, for compliance purposes, continuous opacity monitoring system (COMS) data results produced during any performance test required under 40 CFR 60.8 in lieu of Method 9 observation data. If an owner or operator elects to submit COMS data for compliance with the opacity standard, he shall notify the Administrator of that decision, in writing, at least 30 days before any performance test required under 40 CFR 60.8 is conducted. Once the owner or operator of an affected facility has notified the Administrator to that effect, the COMS data results will be used to determine opacity compliance during subsequent tests required under 40 CFR 60.8 until the owner or operator notifies the Administrator, in writing, to the contrary. For the purpose of determining compliance with the opacity standard during a performance test required under 40 CFR 60.8 using COMS data, the minimum total time of COMS data collection shall be averages of all 6-minute continuous periods within the duration of the mass emission performance test. Results of the COMS opacity determinations shall be submitted along with the results of the performance test required under 40 CFR 60.8. The owner or operator of an affected facility using a COMS for compliance purposes is responsible for demonstrating that the COMS meets the requirements specified in 40 CFR 60.13(c) of this part, that the COMS has been properly maintained and operated, and that the resulting data have not been altered in any way. If COMS data results are submitted for compliance with the opacity standard for a period of time during which Method 9 data indicates noncompliance, the Method 9 data will be used to determine compliance with the opacity standard.
- (6) Upon receipt from an owner or operator of the written reports of the results of the performance tests required by 40 CFR 60.8, the opacity observation results and observer certification required by 40 CFR 60.11(e)(1), and the COMS results, if applicable, the Administrator will make a finding concerning compliance with opacity and other applicable standards. If COMS data results are used to comply with an opacity standard, only those results are required to be submitted along with the performance test results required by 40 CFR 60.8. If the Administrator finds that an affected facility is in compliance with all applicable standards for which performance tests are conducted in accordance with 40 CFR 60.8 of this part but during the time such performance tests are being conducted fails to meet any applicable opacity standard, he shall notify the owner or operator and advise him that he may petition the Administrator within 10 days of receipt of notification to make appropriate adjustment to the opacity standard for the affected facility.
- (7) The Administrator will grant such a petition upon a demonstration by the owner or operator that the affected facility and associated air pollution control equipment was operated and maintained in a manner to minimize the opacity of emissions during the performance tests; that the performance tests were performed under the conditions established by the Administrator; and that the affected facility and associated air pollution control equipment were incapable of being adjusted or operated to meet the applicable opacity standard.
- (8) The Administrator will establish an opacity standard for the affected facility meeting the above requirements at a level at which the source will be able, as indicated by the performance and opacity tests, to meet the opacity standard at all times during which the source is meeting the mass or concentration emission standard. The Administrator will promulgate the new opacity standard in the Federal Register.
- (f) Special provisions set forth under an applicable Subpart shall supersede any conflicting provisions in paragraphs (a) through (e) of this section.
- (g) For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test or procedure had been performed.

[38 FR 28565, Oct. 15, 1973, as amended at 39 FR 39873, Nov. 12, 1974; 43 FR 8800, Mar. 3, 1978; 45 FR 23379, Apr. 4, 1980; 48 FR 48335, Oct. 18, 1983; 50 FR 53113, Dec. 27, 1985; 51 FR 1790, Jan. 15, 1986; 52 FR 9781, Mar. 26, 1987; 62 FR 8328, Feb. 24, 1997; 65 FR 61749, Oct. 17, 2000]

40 CFR 60.12 - Circumvention

No owner or operator subject to the provisions of this part shall build, erect, install, or use any article, machine, equipment or process, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance with an opacity standard or with a standard which is based on the concentration of a pollutant in the gases discharged to the atmosphere.

[39 FR 9314, Mar. 8, 1974]

40 CFR 60.13 - Monitoring requirements

- (a) For the purposes of this section, all continuous monitoring systems required under applicable Subparts shall be subject to the provisions of this section upon promulgation of performance specifications for continuous monitoring systems under appendix B to this part and, if the continuous monitoring system is used to demonstrate compliance with emission limits on a continuous basis, Appendix F to this part, unless otherwise specified in an applicable Subpart or by the Administrator. Appendix F is applicable December 4, 1987.
- (b) All continuous monitoring systems and monitoring devices shall be installed and operational prior to conducting performance tests under 40 CFR 60.8. Verification of operational status shall, as a minimum, include completion of the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device.
- (c) If the owner or operator of an affected facility elects to submit continuous opacity monitoring system (COMS) data for compliance with the opacity standard as provided under 40 CFR 60.11(e)(5), he shall conduct a performance evaluation of the COMS as specified in Performance Specification 1, Appendix B, of this part before the performance test required under 40 CFR 60.8 is conducted. Otherwise, the owner or operator of an affected facility shall conduct a performance evaluation of the COMS or continuous emission monitoring system (CEMS) during any performance test required under 40 CFR 60.8 or within 30 days thereafter in accordance with the applicable performance specification in Appendix B of this part. The owner or operator of an affected facility shall conduct COMS or CEMS performance evaluations at such other times as may be required by the Administrator under section 114 of the Act.
 - (1) The owner or operator of an affected facility using a COMS to determine opacity compliance during any performance test required under 40 CFR 60.8 and as described in 40 CFR 60.11(e)(5) shall furnish the Administrator two or, upon request, more copies of a written report of the results of the COMS performance evaluation described in paragraph (c) of this section at least 10 days before the performance test required under 40 CFR 60.8 is conducted.
 - (2) Except as provided in paragraph (c)(1) of this section, the owner or operator of an affected facility shall furnish the Administrator within 60 days of completion two or, upon request, more copies of a written report of the results of the performance evaluation.
- (d)
 - (1) Owners and operators of a CEMS installed in accordance with the provisions of this part, must check the zero (or low level value between 0 and 20 percent of span value) and span (50 to 100 percent of span value) calibration drifts at least once daily in accordance with a written procedure. The zero and span must, as a minimum, be adjusted whenever either the 24-hour zero drift or the 24-hour span drift exceeds two times the limit of the applicable performance specification in Appendix B of this part. The system must allow the amount of the excess zero and span drift to be recorded and quantified whenever specified. Owners and operators of a COMS installed in accordance with the provisions of this part, must automatically, intrinsic to the opacity monitor, check the zero and upscale (span) calibration drifts at least once daily. For a particular COMS, the acceptable range of zero and upscale calibration materials is as defined in the applicable version of PS-1 in Appendix B of this part. For a COMS, the optical surfaces, exposed to the effluent gases, must be cleaned before performing the zero and upscale drift adjustments, except for systems using automatic zero adjustments. The optical surfaces must be cleaned when the cumulative automatic zero compensation exceeds 4 percent opacity.
 - (2) Unless otherwise approved by the Administrator, the following procedures must be followed for a COMS. Minimum procedures must include an automated method for producing a simulated zero opacity condition and an upscale opacity condition using a certified neutral density filter or other related technique to produce a known obstruction of the light beam. Such procedures must provide a system check of all active analyzer internal optics with power or curvature, all active electronic circuitry including the light source and photodetector assembly, and electronic or electro-mechanical systems and hardware and or software used during normal measurement operation.

- (e) Except for system breakdowns, repairs, calibration checks, and zero and span adjustments required under paragraph (d) of this section, all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows:
 - (1) All continuous monitoring systems referenced by paragraph (c) of this section for measuring opacity of emissions shall 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.
 - (2) All continuous monitoring systems referenced by paragraph (c) of this section for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.
- (f) All continuous monitoring systems or monitoring devices shall be installed such that representative measurements of emissions or process parameters from the affected facility are obtained. Additional procedures for location of continuous monitoring systems contained in the applicable Performance Specifications of Appendix B of this part shall be used.
- (g) When the effluents from a single affected facility or two or more affected facilities subject to the same emission standards are combined before being released to the atmosphere, the owner or operator may install applicable continuous monitoring systems on each effluent or on the combined effluent. When the affected facilities are not subject to the same emission standards, separate continuous monitoring systems shall be installed on each effluent. When the effluent from one affected facility is released to the atmosphere through more than one point, the owner or operator shall install an applicable continuous monitoring system on each separate effluent unless the installation of fewer systems is approved by the Administrator. When more than one continuous monitoring system is used to measure the emissions from one affected facility (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required from each continuous monitoring system.
- (h)
 - (1) Owners or operators of all continuous monitoring systems for measurement of opacity shall reduce all data to 6-minute averages and for continuous monitoring systems other than opacity to 1-hour averages for time periods as defined in 40 CFR 60.2. Six-minute opacity averages shall be calculated from 36 or more data points equally spaced over each 6-minute period.
 - (2) For continuous monitoring systems other than opacity, 1-hour averages shall be computed as follows, except that the provisions pertaining to the validation of partial operating hours are only applicable for affected facilities that are required by the applicable Subpart to include partial hours in the emission calculations:
 - (i) Except as provided under paragraph (h)(2)(iii) of this section, for a full operating hour (any clock hour with 60 minutes of unit operation), at least four valid data points are required to calculate the hourly average, i.e., one data point in each of the 15-minute quadrants of the hour.
 - (ii) Except as provided under paragraph (h)(2)(iii) of this section, for a partial operating hour (any clock hour with less than 60 minutes of unit operation), at least one valid data point in each 15-minute quadrant of the hour in which the unit operates is required to calculate the hourly average.
 - (iii) For any operating hour in which required maintenance or quality-assurance activities are performed:
 - (A) If the unit operates in two or more quadrants of the hour, a minimum of two valid data points, separated by at least 15 minutes, is required to calculate the hourly average; or
 - (B) If the unit operates in only one quadrant of the hour, at least one valid data point is required to calculate the hourly average.
 - (iv) If a daily calibration error check is failed during any operating hour, all data for that hour shall be invalidated, unless a subsequent calibration error test is passed in the same hour and the requirements of paragraph (h)(2)(iii) of this section are met, based solely on valid data recorded after the successful calibration.
 - (v) For each full or partial operating hour, all valid data points shall be used to calculate the hourly average.
 - (vi) Except as provided under paragraph (h)(2)(vii) of this section, data recorded during periods of continuous monitoring system breakdown, repair, calibration checks, and zero and span adjustments shall not be included in the data averages computed under this paragraph.
 - (vii) Owners and operators complying with the requirements of 40 CFR 60.7(f)(1) or (2) must include any data recorded during periods of monitor breakdown or malfunction in the data averages.

- (viii) When specified in an applicable Subpart, hourly averages for certain partial operating hours shall not be computed or included in the emission averages (e.g. hours with < 30 minutes of unit operation under 40 CFR 60.47b(d)).
- (ix) Either arithmetic or integrated averaging of all data may be used to calculate the hourly averages. The data may be recorded in reduced or nonreduced form (e.g., ppm pollutant and percent O₂ or ng/J of pollutant).
- (3) All excess emissions shall be converted into units of the standard using the applicable conversion procedures specified in the applicable Subpart. After conversion into units of the standard, the data may be rounded to the same number of significant digits used in the applicable Subpart to specify the emission limit.
 - (i) After receipt and consideration of written application, the Administrator may approve alternatives to any monitoring procedures or requirements of this part including, but not limited to the following:
 - (1) Alternative monitoring requirements when installation of a continuous monitoring system or monitoring device specified by this part would not provide accurate measurements due to liquid water or other interferences caused by substances in the effluent gases.
 - (2) Alternative monitoring requirements when the affected facility is infrequently operated.
 - (3) Alternative monitoring requirements to accommodate continuous monitoring systems that require additional measurements to correct for stack moisture conditions.
 - (4) Alternative locations for installing continuous monitoring systems or monitoring devices when the owner or operator can demonstrate that installation at alternate locations will enable accurate and representative measurements.
 - (5) Alternative methods of converting pollutant concentration measurements to units of the standards.
 - (6) Alternative procedures for performing daily checks of zero and span drift that do not involve use of span gases or test cells.
 - (7) Alternatives to the A.S.T.M. test methods or sampling procedures specified by any Subpart.
 - (8) Alternative continuous monitoring systems that do not meet the design or performance requirements in Performance Specification 1, Appendix B, but adequately demonstrate a definite and consistent relationship between its measurements and the measurements of opacity by a system complying with the requirements in Performance Specification 1. The Administrator may require that such demonstration be performed for each affected facility.
 - (9) Alternative monitoring requirements when the effluent from a single affected facility or the combined effluent from two or more affected facilities is released to the atmosphere through more than one point.
- (j) An alternative to the relative accuracy (RA) test specified in Performance Specification 2 of Appendix B may be requested as follows:
 - (1) An alternative to the reference method tests for determining RA is available for sources with emission rates demonstrated to be less than 50 percent of the applicable standard. A source owner or operator may petition the Administrator to waive the RA test in Section 8.4 of Performance Specification 2 and substitute the procedures in Section 16.0 if the results of a performance test conducted according to the requirements in 40 CFR 60.8 of this Subpart or other tests performed following the criteria in 40 CFR 60.8 demonstrate that the emission rate of the pollutant of interest in the units of the applicable standard is less than 50 percent of the applicable standard. For sources subject to standards expressed as control efficiency levels, a source owner or operator may petition the Administrator to waive the RA test and substitute the procedures in Section 16.0 of Performance Specification 2 if the control device exhaust emission rate is less than 50 percent of the level needed to meet the control efficiency requirement. The alternative procedures do not apply if the continuous emission monitoring system is used to determine compliance continuously with the applicable standard. The petition to waive the RA test shall include a detailed description of the procedures to be applied. Included shall be location and procedure for conducting the alternative, the concentration or response levels of the alternative RA materials, and the other equipment checks included in the alternative procedure. The Administrator will review the petition for completeness and applicability. The determination to grant a waiver will depend on the intended use of the CEMS data (e.g., data collection purposes other than NSPS) and may require specifications more stringent than in Performance Specification 2 (e.g., the applicable emission limit is more stringent than NSPS).
 - (2) The waiver of a CEMS RA test will be reviewed and may be rescinded at such time, following successful completion of the alternative RA procedure, that the CEMS data indicate that the source emissions are approaching

the level. The criterion for reviewing the waiver is the collection of CEMS data showing that emissions have exceeded 70 percent of the applicable standard for seven, consecutive, averaging periods as specified by the applicable regulation(s). For sources subject to standards expressed as control efficiency levels, the criterion for reviewing the waiver is the collection of CEMS data showing that exhaust emissions have exceeded 70 percent of the level needed to meet the control efficiency requirement for seven, consecutive, averaging periods as specified by the applicable regulation(s) [e.g., 40 CFR 60.45(g) (2) and (3), 40 CFR 60.73(e), and 40 CFR 60.84(e)]. It is the responsibility of the source operator to maintain records and determine the level of emissions relative to the criterion on the waiver of RA testing. If this criterion is exceeded, the owner or operator must notify the Administrator within 10 days of such occurrence and include a description of the nature and cause of the increasing emissions. The Administrator will review the notification and may rescind the waiver and require the owner or operator to conduct a RA test of the CEMS as specified in Section 8.4 of Performance Specification 2.

[40 FR 46255, Oct. 6, 1975; 40 FR 59205, Dec. 22, 1975, as amended at 41 FR 35185, Aug. 20, 1976; 48 FR 13326, Mar. 30, 1983; 48 FR 23610, May 25, 1983; 48 FR 32986, July 20, 1983; 52 FR 9782, Mar. 26, 1987; 52 FR 17555, May 11, 1987; 52 FR 21007, June 4, 1987; 64 FR 7463, Feb. 12, 1999; 65 FR 48920, Aug. 10, 2000; 65 FR 61749, Oct. 17, 2000; 66 FR 44980, Aug. 27, 2001; 71 FR 31102, June 1, 2006; 72 FR 32714, June 13, 2007]

Editorial Note: At 65 FR 61749, Oct. 17, 2000, 40 CFR 60.13 was amended by revising the words “ng/J of pollutant” to read “ng of pollutant per J of heat input” in the sixth sentence of paragraph (h). However, the amendment could not be incorporated because the words “ng/J of pollutant” do not exist in the sixth sentence of paragraph (h).

40 CFR 60.14 - Modification

- (a) Except as provided under paragraphs (e) and (f) of this section, any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning of section 111 of the Act. Upon modification, an existing facility shall become an affected facility for each pollutant to which a standard applies and for which there is an increase in the emission rate to the atmosphere.
- (b) Emission rate shall be expressed as kg/hr of any pollutant discharged into the atmosphere for which a standard is applicable. The Administrator shall use the following to determine emission rate:
 - (1) Emission factors as specified in the latest issue of “Compilation of Air Pollutant Emission Factors,” EPA Publication No. AP-42, or other emission factors determined by the Administrator to be superior to AP-42 emission factors, in cases where utilization of emission factors demonstrates that the emission level resulting from the physical or operational change will either clearly increase or clearly not increase.
 - (2) Material balances, continuous monitor data, or manual emission tests in cases where utilization of emission factors as referenced in paragraph (b)(1) of this section does not demonstrate to the Administrator's satisfaction whether the emission level resulting from the physical or operational change will either clearly increase or clearly not increase, or where an owner or operator demonstrates to the Administrator's satisfaction that there are reasonable grounds to dispute the result obtained by the Administrator utilizing emission factors as referenced in paragraph (b)(1) of this section. When the emission rate is based on results from manual emission tests or continuous monitoring systems, the procedures specified in Appendix C of this part shall be used to determine whether an increase in emission rate has occurred. Tests shall be conducted under such conditions as the Administrator shall specify to the owner or operator based on representative performance of the facility. At least three valid test runs must be conducted before and at least three after the physical or operational change. All operating parameters which may affect emissions must be held constant to the maximum feasible degree for all test runs.
- (c) The addition of an affected facility to a stationary source as an expansion to that source or as a replacement for an existing facility shall not by itself bring within the applicability of this part any other facility within that source.
- (d) [Reserved]
- (e) The following shall not, by themselves, be considered modifications under this part:
 - (1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category, subject to the provisions of paragraph (c) of this section and 40 CFR 60.15.
 - (2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on that facility.

- (3) An increase in the hours of operation.
- (4) Use of an alternative fuel or raw material if, prior to the date any standard under this part becomes applicable to that source type, as provided by 40 CFR 60.1, the existing facility was designed to accommodate that alternative use. A facility shall be considered to be designed to accommodate an alternative fuel or raw material if that use could be accomplished under the facility's construction specifications as amended prior to the change. Conversion to coal required for energy considerations, as specified in section 111(a)(8) of the Act, shall not be considered a modification.
- (5) The addition or use of any system or device whose primary function is the reduction of air pollutants, except when an emission control system is removed or is replaced by a system which the Administrator determines to be less environmentally beneficial.
- (6) The relocation or change in ownership of an existing facility.
- (f) Special provisions set forth under an applicable Subpart of this part shall supersede any conflicting provisions of this section.
- (g) Within 180 days of the completion of any physical or operational change subject to the control measures specified in paragraph (a) of this section, compliance with all applicable standards must be achieved.
- (h) No physical change, or change in the method of operation, at an existing electric utility steam generating unit shall be treated as a modification for the purposes of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the 5 years prior to the change.
- (i) Repowering projects that are awarded funding from the Department of Energy as permanent clean coal technology demonstration projects (or similar projects funded by EPA) are exempt from the requirements of this section provided that such change does not increase the maximum hourly emissions of any pollutant regulated under this section above the maximum hourly emissions achievable at that unit during the five years prior to the change.
- (j)
 - (1) Repowering projects that qualify for an extension under section 409(b) of the Clean Air Act are exempt from the requirements of this section, provided that such change does not increase the actual hourly emissions of any pollutant regulated under this section above the actual hourly emissions achievable at that unit during the 5 years prior to the change.
 - (2) This exemption shall not apply to any new unit that:
 - (i) Is designated as a replacement for an existing unit;
 - (ii) Qualifies under section 409(b) of the Clean Air Act for an extension of an emission limitation compliance date under section 405 of the Clean Air Act; and
 - (iii) Is located at a different site than the existing unit.
- (k) The installation, operation, cessation, or removal of a temporary clean coal technology demonstration project is exempt from the requirements of this section. A *temporary clean coal control technology demonstration project*, for the purposes of this section is a clean coal technology demonstration project that is operated for a period of 5 years or less, and which complies with the State implementation plan for the State in which the project is located and other requirements necessary to attain and maintain the national ambient air quality standards during the project and after it is terminated.
- (l) The reactivation of a very clean coal-fired electric utility steam generating unit is exempt from the requirements of this section.

[40 FR 58419, Dec. 16, 1975, as amended at 43 FR 34347, Aug. 3, 1978; 45 FR 5617, Jan. 23, 1980; 57 FR 32339, July 21, 1992; 65 FR 61750, Oct. 17, 2000]

40 CFR 60.15 - Reconstruction

- (a) An existing facility, upon reconstruction, becomes an affected facility, irrespective of any change in emission rate.
- (b) "Reconstruction" means the replacement of components of an existing facility to such an extent that:

- (1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and
- (2) It is technologically and economically feasible to meet the applicable standards set forth in this part.
- (c) “Fixed capital cost” means the capital needed to provide all the depreciable components.
- (d) If an owner or operator of an existing facility proposes to replace components, and the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, he shall notify the Administrator of the proposed replacements. The notice must be postmarked 60 days (or as soon as practicable) before construction of the replacements is commenced and must include the following information:
 - (1) Name and address of the owner or operator.
 - (2) The location of the existing facility.
 - (3) A brief description of the existing facility and the components which are to be replaced.
 - (4) A description of the existing air pollution control equipment and the proposed air pollution control equipment.
 - (5) An estimate of the fixed capital cost of the replacements and of constructing a comparable entirely new facility.
 - (6) The estimated life of the existing facility after the replacements.
 - (7) A discussion of any economic or technical limitations the facility may have in complying with the applicable standards of performance after the proposed replacements.
- (e) The Administrator will determine, within 30 days of the receipt of the notice required by paragraph (d) of this section and any additional information he may reasonably require, whether the proposed replacement constitutes reconstruction.
- (f) The Administrator's determination under paragraph (e) shall be based on:
 - (1) The fixed capital cost of the replacements in comparison to the fixed capital cost that would be required to construct a comparable entirely new facility;
 - (2) The estimated life of the facility after the replacements compared to the life of a comparable entirely new facility;
 - (3) The extent to which the components being replaced cause or contribute to the emissions from the facility; and
 - (4) Any economic or technical limitations on compliance with applicable standards of performance which are inherent in the proposed replacements.
- (g) Individual Subparts of this part may include specific provisions which refine and delimit the concept of reconstruction set forth in this section.

[40 FR 58420, Dec. 16, 1975]

40 CFR 60.16 - Priority list

A list of prioritized major source categories may be found at the following EPA web site:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&rgn=div6&view=text&node=40:6.0.1.1.1.1&idno=40>

[47 FR 951, Jan. 8, 1982, as amended at 47 FR 31876, July 23, 1982; 51 FR 42796, Nov. 25, 1986; 52 FR 11428, Apr. 8, 1987; 61 FR 9919, Mar. 12, 1996]

40 CFR 60.17 - Incorporations by reference

The materials listed below are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of the Federal Register on the date listed. These materials are incorporated as they exist on the date of the approval, and a notice of any change in these materials will be published in the Federal Register. The materials are available for purchase at the corresponding address noted below, and all are available for inspection at the Library (C267-01), U.S. EPA, Research Triangle Park, NC or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

- (a) The following materials are available for purchase from at least one of the following addresses: American Society for Testing and Materials (ASTM), 100 Barr Harbor Drive, Post Office Box C700, West Conshohocken, PA 19428-2959; or ProQuest, 300 North Zeeb Road, Ann Arbor, MI 48106.
- (1) ASTM A99-76, 82 (Reapproved 1987), Standard Specification for Ferromanganese, incorporation by reference (IBR) approved for 40 CFR 60.261.
 - (2) ASTM A100-69, 74, 93, Standard Specification for Ferrosilicon, IBR approved for 40 CFR 60.261.
 - (3) ASTM A101-73, 93, Standard Specification for Ferrochromium, IBR approved for 40 CFR 60.261.
 - (4) ASTM A482-76, 93, Standard Specification for Ferrochromesilicon, IBR approved for 40 CFR 60.261.
 - (5) ASTM A483-64, 74 (Reapproved 1988), Standard Specification for Silicomanganese, IBR approved for 40 CFR 60.261.
 - (6) ASTM A495-76, 94, Standard Specification for Calcium-Silicon and Calcium Manganese-Silicon, IBR approved for 40 CFR 60.261.
 - (7) ASTM D86-78, 82, 90, 93, 95, 96, Distillation of Petroleum Products, IBR approved for 40 CFR 60.562-2(d), 60.593(d), 60.593a(d), and 60.633(h).
 - (8) ASTM D129-64, 78, 95, 00, Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for 40 CFR 60.106(j)(2), 60.335(b)(10)(i), and Appendix A: Method 19, 12.5.2.2.3.
 - (9) ASTM D129-00 (Reapproved 2005), Standard Test Method for Sulfur in Petroleum Products (General Bomb Method), IBR approved for 40 CFR 60.4415(a)(1)(i).
 - (10) ASTM D240-76, 92, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter, IBR approved for 40 CFR 60.46(c), 60.296(b), and Appendix A: Method 19, Section 12.5.2.2.3.
 - (11) ASTM D270-65, 75, Standard Method of Sampling Petroleum and Petroleum Products, IBR approved for Appendix A: Method 19, Section 12.5.2.2.1.
 - (12) ASTM D323-82, 94, Test Method for Vapor Pressure of Petroleum Products (Reid Method), IBR approved for 40 CFR 60.111(l), 60.111a(g), 60.111b(g), and 60.116b(f)(2)(ii).
 - (13) ASTM D388-77, 90, 91, 95, 98a, 99 (Reapproved 2004)^{ε1}, Standard Specification for Classification of Coals by Rank, IBR approved for 40 CFR 60.24(h)(8), 60.41 of Subpart D of this part, 60.45(f)(4)(i), 60.45(f)(4)(ii), 60.45(f)(4)(vi), 60.41Da of Subpart Da of this part, 60.41b of Subpart Db of this part, 60.41c of Subpart Dc of this part, and 60.4102.
 - (14) ASTM D388-77, 90, 91, 95, 98a, Standard Specification for Classification of Coals by Rank, IBR approved for 40 CFR 60.251(b) and (c) of Subpart Y of this part.
 - (15) ASTM D396-78, 89, 90, 92, 96, 98, Standard Specification for Fuel Oils, IBR approved for 40 CFR 60.41b of Subpart Db of this part, 60.41c of Subpart Dc of this part, 60.111(b) of Subpart K of this part, and 60.111a(b) of Subpart Ka of this part.
 - (16) ASTM D975-78, 96, 98a, Standard Specification for Diesel Fuel Oils, IBR approved for 40 CFR 60.111(b) of Subpart K of this part and 60.111a(b) of Subpart Ka of this part.
 - (17) ASTM D1072-80, 90 (Reapproved 1994), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for 40 CFR 60.335(b)(10)(ii).
 - (18) ASTM D1072-90 (Reapproved 1999), Standard Test Method for Total Sulfur in Fuel Gases, IBR approved for 40 CFR 60.4415(a)(1)(ii).
 - (19) ASTM D1137-53, 75, Standard Method for Analysis of Natural Gases and Related Types of Gaseous Mixtures by the Mass Spectrometer, IBR approved for 40 CFR 60.45(f)(5)(i).
 - (20) ASTM D1193-77, 91, Standard Specification for Reagent Water, IBR approved for Appendix A: Method 5, Section 7.1.3; Method 5E, Section 7.2.1; Method 5F, Section 7.2.1; Method 6, Section 7.1.1; Method 7, Section 7.1.1; Method 7C, Section 7.1.1; Method 7D, Section 7.1.1; Method 10A, Section 7.1.1; Method 11, Section 7.1.3; Method 12, Section 7.1.3; Method 13A, Section 7.1.2; Method 26, Section 7.1.2; Method 26A, Section 7.1.2; and Method 29, Section 7.2.2.

- (21) ASTM D1266-87, 91, 98, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for 40 CFR 60.106(j)(2) and 60.335(b)(10)(i).
- (22) ASTM D1266-98 (Reapproved 2003)e1, Standard Test Method for Sulfur in Petroleum Products (Lamp Method), IBR approved for 40 CFR 60.4415(a)(1)(i).
- (23) ASTM D1475-60 (Reapproved 1980), 90, Standard Test Method for Density of Paint, Varnish Lacquer, and Related Products, IBR approved for 40 CFR 60.435(d)(1), Appendix A: Method 24, Section 6.1; and Method 24A, Sections 6.5 and 7.1.
- (24) ASTM D1552-83, 95, 01, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for 40 CFR 60.106(j)(2), 60.335(b)(10)(i), and Appendix A: Method 19, Section 12.5.2.2.3.
- (25) ASTM D1552-03, Standard Test Method for Sulfur in Petroleum Products (High-Temperature Method), IBR approved for 40 CFR 60.4415(a)(1)(i).
- (26) ASTM D1826-77, 94, Standard Test Method for Calorific Value of Gases in Natural Gas Range by Continuous Recording Calorimeter, IBR approved for 40 CFR 60.45(f)(5)(ii), 60.46(c)(2), 60.296(b)(3), and Appendix A: Method 19, Section 12.3.2.4.
- (27) ASTM D1835-87, 91, 97, 03a, Standard Specification for Liquefied Petroleum (LP) Gases, IBR approved for 40 CFR 60.41Da of Subpart Da of this part, 60.41b of Subpart Db of this part, and 60.41c of Subpart Dc of this part.
- (28) ASTM D1945-64, 76, 91, 96, Standard Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for 40 CFR 60.45(f)(5)(i).
- (29) ASTM D1946-77, 90 (Reapproved 1994), Standard Method for Analysis of Reformed Gas by Gas Chromatography, IBR approved for 40 CFR 60.18(f)(3), 60.45(f)(5)(i), 60.564(f)(1), 60.614(e)(2)(ii), 60.614(e)(4), 60.664(e)(2)(ii), 60.664(e)(4), 60.704(d)(2)(ii), and 60.704(d)(4).
- (30) ASTM D2013-72, 86, Standard Method of Preparing Coal Samples for Analysis, IBR approved for Appendix A: Method 19, Section 12.5.2.1.3.
- (31) ASTM D2015-77 (Reapproved 1978), 96, Standard Test Method for Gross Calorific Value of Solid Fuel by the Adiabatic Bomb Calorimeter, IBR approved for 40 CFR 60.45(f)(5)(ii), 60.46(c)(2), and Appendix A: Method 19, Section 12.5.2.1.3.
- (32) ASTM D2016-74, 83, Standard Test Methods for Moisture Content of Wood, IBR approved for Appendix A: Method 28, Section 16.1.1.
- (33) ASTM D2234-76, 96, 97b, 98, Standard Methods for Collection of a Gross Sample of Coal, IBR approved for Appendix A: Method 19, Section 12.5.2.1.1.
- (34) ASTM D2369-81, 87, 90, 92, 93, 95, Standard Test Method for Volatile Content of Coatings, IBR approved for Appendix A: Method 24, Section 6.2.
- (35) ASTM D2382-76, 88, Heat of Combustion of Hydrocarbon Fuels by Bomb Calorimeter (High-Precision Method), IBR approved for 40 CFR 60.18(f)(3), 60.485(g)(6), 60.485a(g)(6), 60.564(f)(3), 60.614(e)(4), 60.664(e)(4), and 60.704(d)(4).
- (36) ASTM D2504-67, 77, 88 (Reapproved 1993), Noncondensable Gases in C3 and Lighter Hydrocarbon Products by Gas Chromatography, IBR approved for 40 CFR 60.485(g)(5) and 60.485a(g)(5).
- (37) ASTM D2584-68 (Reapproved 1985), 94, Standard Test Method for Ignition Loss of Cured Reinforced Resins, IBR approved for 40 CFR 60.685(c)(3)(i).
- (38) ASTM D2597-94 (Reapproved 1999), Standard Test Method for Analysis of Demethanized Hydrocarbon Liquid Mixtures Containing Nitrogen and Carbon Dioxide by Gas Chromatography, IBR approved for 40 CFR 60.335(b)(9)(i).
- (39) ASTM D2622-87, 94, 98, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for 40 CFR 60.106(j)(2) and 60.335(b)(10)(i).
- (40) ASTM D2622-05, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry, IBR approved for 40 CFR 60.4415(a)(1)(i).

- (41) ASTM D2879-83, 96, 97, Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope, IBR approved for 40 CFR 60.111b(f)(3), 60.116b(e)(3)(ii), 60.116b(f)(2)(i), 60.485(e)(1), and 60.485a(e)(1).
- (42) ASTM D2880-78, 96, Standard Specification for Gas Turbine Fuel Oils, IBR approved for 40 CFR 60.111(b), 60.111a(b), and 60.335(d).
- (43) ASTM D2908-74, 91, Standard Practice for Measuring Volatile Organic Matter in Water by Aqueous-Injection Gas Chromatography, IBR approved for 40 CFR 60.564(j).
- (44) ASTM D2986-71, 78, 95a, Standard Method for Evaluation of Air, Assay Media by the Monodisperse DOP (Diocetyl Phthalate) Smoke Test, IBR approved for Appendix A: Method 5, Section 7.1.1; Method 12, Section 7.1.1; and Method 13A, Section 7.1.1.2.
- (45) ASTM D3173-73, 87, Standard Test Method for Moisture in the Analysis Sample of Coal and Coke, IBR approved for Appendix A: Method 19, Section 12.5.2.1.3.
- (46) ASTM D3176-74, 89, Standard Method for Ultimate Analysis of Coal and Coke, IBR approved for 40 CFR 60.45(f)(5)(i) and Appendix A: Method 19, Section 12.3.2.3.
- (47) ASTM D3177-75, 89, Standard Test Method for Total Sulfur in the Analysis Sample of Coal and Coke, IBR approved for Appendix A: Method 19, Section 12.5.2.1.3.
- (48) ASTM D3178-73 (Reapproved 1979), 89, Standard Test Methods for Carbon and Hydrogen in the Analysis Sample of Coal and Coke, IBR approved for 40 CFR 60.45(f)(5)(i).
- (49) ASTM D3246-81, 92, 96, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for 40 CFR 60.335(b)(10)(ii).
- (50) ASTM D3246-05, Standard Test Method for Sulfur in Petroleum Gas by Oxidative Microcoulometry, IBR approved for 40 CFR 60.4415(a)(1)(ii).
- (51) ASTM D3270-73T, 80, 91, 95, Standard Test Methods for Analysis for Fluoride Content of the Atmosphere and Plant Tissues (Semiautomated Method), IBR approved for Appendix A: Method 13A, Section 16.1.
- (52) ASTM D3286-85, 96, Standard Test Method for Gross Calorific Value of Coal and Coke by the Isoperibol Bomb Calorimeter, IBR approved for Appendix A: Method 19, Section 12.5.2.1.3.
- (53) ASTM D3370-76, 95a, Standard Practices for Sampling Water, IBR approved for 40 CFR 60.564(j).
- (54) ASTM D3792-79, 91, Standard Test Method for Water Content of Water-Reducible Paints by Direct Injection into a Gas Chromatograph, IBR approved for Appendix A: Method 24, Section 6.3.
- (55) ASTM D4017-81, 90, 96a, Standard Test Method for Water in Paints and Paint Materials by the Karl Fischer Titration Method, IBR approved for Appendix A: Method 24, Section 6.4.
- (56) ASTM D4057-81, 95, Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for Appendix A: Method 19, Section 12.5.2.2.3.
- (57) ASTM D4057-95 (Reapproved 2000), Standard Practice for Manual Sampling of Petroleum and Petroleum Products, IBR approved for 40 CFR 60.4415(a)(1).
- (58) ASTM D4084-82, 94, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for 40 CFR 60.334(h)(1).
- (59) ASTM D4084-05, Standard Test Method for Analysis of Hydrogen Sulfide in Gaseous Fuels (Lead Acetate Reaction Rate Method), IBR approved for 40 CFR 60.4360 and 60.4415(a)(1)(ii).
- (60) ASTM D4177-95, Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for Appendix A: Method 19, Section 12.5.2.2.1.
- (61) ASTM D4177-95 (Reapproved 2000), Standard Practice for Automatic Sampling of Petroleum and Petroleum Products, IBR approved for 40 CFR 60.4415(a)(1).
- (62) ASTM D4239-85, 94, 97, Standard Test Methods for Sulfur in the Analysis Sample of Coal and Coke Using High Temperature Tube Furnace Combustion Methods, IBR approved for Appendix A: Method 19, Section 12.5.2.1.3.

- (63) ASTM D4294-02, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for 40 CFR 60.335(b)(10)(i).
- (64) ASTM D4294-03, Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectrometry, IBR approved for 40 CFR 60.4415(a)(1)(i).
- (65) ASTM D4442-84, 92, Standard Test Methods for Direct Moisture Content Measurement in Wood and Wood-base Materials, IBR approved for Appendix A: Method 28, Section 16.1.1.
- (66) ASTM D4444-92, Standard Test Methods for Use and Calibration of Hand-Held Moisture Meters, IBR approved for Appendix A: Method 28, Section 16.1.1.
- (67) ASTM D4457-85 (Reapproved 1991), Test Method for Determination of Dichloromethane and 1, 1, 1-Trichloroethane in Paints and Coatings by Direct Injection into a Gas Chromatograph, IBR approved for Appendix A: Method 24, Section 6.5.
- (68) ASTM D4468-85 (Reapproved 2000), Standard Test Method for Total Sulfur in Gaseous Fuels by Hydrogenolysis and Rateometric Colorimetry, IBR approved for 40 CFR 60.335(b)(10)(ii) and 60.4415(a)(1)(ii).
- (69) ASTM D4629-02, Standard Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection, IBR approved for 40 CFR 60.49b(e) and 60.335(b)(9)(i).
- (70) ASTM D4809-95, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), IBR approved for 40 CFR 60.18(f)(3), 60.485(g)(6), 60.485a(g)(6), 60.564(f)(3), 60.614(d)(4), 60.664(e)(4), and 60.704(d)(4).
- (71) ASTM D4810-88 (Reapproved 1999), Standard Test Method for Hydrogen Sulfide in Natural Gas Using Length of Stain Detector Tubes, IBR approved for 40 CFR 60.4360 and 60.4415(a)(1)(ii).
- (72) ASTM D5287-97 (Reapproved 2002), Standard Practice for Automatic Sampling of Gaseous Fuels, IBR approved for 40 CFR 60.4415(a)(1).
- (73) ASTM D5403-93, Standard Test Methods for Volatile Content of Radiation Curable Materials, IBR approved for Appendix A: Method 24, Section 6.6.
- (74) ASTM D5453-00, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for 40 CFR 60.335(b)(10)(i).
- (75) ASTM D5453-05, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Motor Fuels and Oils by Ultraviolet Fluorescence, IBR approved for 40 CFR 60.4415(a)(1)(i).
- (76) ASTM D5504-01, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence, IBR approved for 40 CFR 60.334(h)(1) and 60.4360.
- (77) ASTM D5762-02, Standard Test Method for Nitrogen in Petroleum and Petroleum Products by Boat-Inlet Chemiluminescence, IBR approved for 40 CFR 60.335(b)(9)(i).
- (78) ASTM D5865-98, Standard Test Method for Gross Calorific Value of Coal and Coke, IBR approved for 40 CFR 60.45(f)(5)(ii), 60.46(c)(2), and Appendix A: Method 19, Section 12.5.2.1.3.
- (79) ASTM D6216-98, Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications, IBR approved for Appendix B, Performance Specification 1.
- (80) ASTM D6228-98, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for 40 CFR 60.334(h)(1).
- (81) ASTM D6228-98 (Reapproved 2003), Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Flame Photometric Detection, IBR approved for 40 CFR 40 CFR 60.4360 and 60.4415.
- (82) ASTM D6348-03, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, IBR approved for table 7 of Subpart IIII of this part and table 2 of Subpart JJJJ of this part.
- (83) ASTM D6366-99, Standard Test Method for Total Trace Nitrogen and Its Derivatives in Liquid Aromatic Hydrocarbons by Oxidative Combustion and Electrochemical Detection, IBR approved for 40 CFR 60.335(b)(9)(i).

- (84) ASTM D6420-99 (Reapproved 2004) Standard Test Method for Determination of Gaseous Organic Compounds by Direct Interface Gas Chromatography-Mass Spectrometry, IBR approved for Table 2 of Subpart JJJJ of this part.
- (85) ASTM D6522-00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for 40 CFR 60.335(a).
- (86) ASTM D6522-00 (Reapproved 2005), Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide, and Oxygen Concentrations in Emissions from Natural Gas-Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers, IBR approved for Table 2 of Subpart JJJJ of this part.
- (87) ASTM D6667-01, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for 40 CFR 60.335(b)(10)(ii).
- (88) ASTM D6667-04, Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, IBR approved for 40 CFR 60.4415(a)(1)(ii).
- (89) ASTM D6784-02, Standard Test Method for Elemental, Oxidized, Particle-Bound and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method), IBR approved for Appendix B to 40 CFR 60, Performance Specification 12A, Section 8.6.2.
- (90) ASTM E168-67, 77, 92, General Techniques of Infrared Quantitative Analysis, IBR approved for 40 CFR 60.485a(d)(1), 60.593(b)(2), 60.593a(b)(2), and 60.632(f).
- (91) ASTM E169-63, 77, 93, General Techniques of Ultraviolet Quantitative Analysis, IBR approved for 40 CFR 60.485a(d)(1), 60.593(b)(2), 60.593a(b)(2), and 60.632(f).
- (92) ASTM E260-73, 91, 96, General Gas Chromatography Procedures, IBR approved for 40 CFR 60.485a(d)(1), 60.593(b)(2), 60.593a(b)(2), and 60.632(f).
- (b) The following material is available for purchase from the Association of Official Analytical Chemists, 1111 North 19th Street, Suite 210, Arlington, VA 22209.
 - (1) AOAC Method 9, Official Methods of Analysis of the Association of Official Analytical Chemists, 11th edition, 1970, pp. 11-12, IBR approved January 27, 1983 for 40 CFR 60.204(b)(3), 60.214(b)(3), 60.224(b)(3), 60.234(b)(3).
- (c) The following material is available for purchase from the American Petroleum Institute, 1220 L Street NW., Washington, DC 20005.
 - (1) API Publication 2517, Evaporation Loss from External Floating Roof Tanks, Second Edition, February 1980, IBR approved January 27, 1983, for 40 CFR 60.111(i), 60.111a(f), 60.111a(f)(1) and 60.116b(e)(2)(i).
- (d) The following material is available for purchase from the Technical Association of the Pulp and Paper Industry (TAPPI), Dunwoody Park, Atlanta, GA 30341.
 - (1) TAPPI Method T624 os-68, IBR approved January 27, 1983 for 40 CFR 60.285(d)(3).
- (e) The following material is available for purchase from the Water Pollution Control Federation (WPCF), 2626 Pennsylvania Avenue NW., Washington, DC 20037.
 - (1) Method 209A, Total Residue Dried at 103-105 °C, in Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, IBR approved February 25, 1985 for 40 CFR 60.683(b).
- (f) The following material is available for purchase from the following address: Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.
 - (1) UL 103, Sixth Edition revised as of September 3, 1986, Standard for Chimneys, Factory-built, Residential Type and Building Heating Appliance.
- (g) The following material is available for purchase from the following address: West Coast Lumber Inspection Bureau, 6980 SW. Barnes Road, Portland, OR 97223.
 - (1) West Coast Lumber Standard Grading Rules No. 16, pages 5-21 and 90 and 91, September 3, 1970, revised 1984.
- (h) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990.

- (1) ASME QRO-1-1994, Standard for the Qualification and Certification of Resource Recovery Facility Operators, IBR approved for 40 CFR 60.56a, 60.54b(a), 60.54b(b), 60.1185(a), 60.1185(c)(2), 60.1675(a), and 60.1675(c)(2).
- (2) ASME PTC 4.1-1964 (Reaffirmed 1991), Power Test Codes: Test Code for Steam Generating Units (with 1968 and 1969 Addenda), IBR approved for 40 CFR 60.46b of Subpart Db of this part, 60.58a(h)(6)(ii), 60.58b(i)(6)(ii), 60.1320(a)(3) and 60.1810(a)(3).
- (3) ASME Interim Supplement 19.5 on Instruments and Apparatus: Application, Part II of Fluid Meters, 6th Edition (1971), IBR approved for 40 CFR 60.58a(h)(6)(ii), 60.58b(i)(6)(ii), 60.1320(a)(4), and 60.1810(a)(4).
- (4) ANSI/ASME PTC 19.10-1981, Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus], IBR approved for Tables 1 and 3 of Subpart EEEE, Tables 2 and 4 of Subpart FFFF, Table 2 of Subpart JJJJ, and 40 CFR 60.4415(a)(2) and 60.4415(a)(3) of Subpart KKKK of this part.
- (i) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods,” EPA Publication SW-846 Third Edition (November 1986), as amended by Updates I (July 1992), II (September 1994), IIA (August, 1993), IIB (January 1995), and III (December 1996). This document may be obtained from the U.S. EPA, Office of Solid Waste and Emergency Response, Waste Characterization Branch, Washington, DC 20460, and is incorporated by reference for appendix A to 40 CFR 60, Method 29, Sections 7.5.34; 9.2.1; 9.2.3; 10.2; 10.3; 11.1.1; 11.1.3; 13.2.1; 13.2.2; 13.3.1; and Table 29-3.
- (j) “Standard Methods for the Examination of Water and Wastewater,” 16th edition, 1985. Method 303F: “Determination of Mercury by the Cold Vapor Technique.” This document may be obtained from the American Public Health Association, 1015 18th Street, NW., Washington, DC 20036, and is incorporated by reference for appendix A to 40 CFR 60, Method 29, Sections 9.2.3; 10.3; and 11.1.3.
- (k) This material is available for purchase from the American Hospital Association (AHA) Service, Inc., Post Office Box 92683, Chicago, Illinois 60675-2683. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-124), Room M-1500, 1200 Pennsylvania Ave., NW., Washington, DC.
 - (1) An Ounce of Prevention: Waste Reduction Strategies for Health Care Facilities. American Society for Health Care Environmental Services of the American Hospital Association. Chicago, Illinois. 1993. AHA Catalog No. 057007. ISBN 0-87258-673-5. IBR approved for 40 CFR 60.35e and 40 CFR 60.55c.
- (l) This material is available for purchase from the National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22161. You may inspect a copy at EPA's Air and Radiation Docket and Information Center (Docket A-91-61, Item IV-J-125), Room M-1500, 1200 Pennsylvania Ave., NW., Washington, DC.
 - (1) OMB Bulletin No. 93-17: Revised Statistical Definitions for Metropolitan Areas. Office of Management and Budget, June 30, 1993. NTIS No. PB 93-192-664. IBR approved for 40 CFR 60.31e.
- (m) This material is available for purchase from at least one of the following addresses: The Gas Processors Association, 6526 East 60th Street, Tulsa, OK, 74145; or Information Handling Services, 15 Inverness Way East, PO Box 1154, Englewood, CO 80150-1154. You may inspect a copy at EPA's Air and Radiation Docket and Information Center, Room B108, 1301 Constitution Ave., NW., Washington, DC 20460.
 - (1) Gas Processors Association Method 2377-86, Test for Hydrogen Sulfide and Carbon Dioxide in Natural Gas Using Length of Stain Tubes, IBR approved for 40 CFR 60.334(h)(1), 60.4360, and 60.4415(a)(1)(ii).
 - (2) [Reserved]
- (n) This material is available for purchase from IHS Inc., 15 Inverness Way East, Englewood, CO 80112.
 - (1) International Organization for Standards 8178-4: 1996(E), Reciprocating Internal Combustion Engines - Exhaust Emission Measurement - Part 4: Test Cycles for Different Engine Applications, IBR approved for 40 CFR 60.4241(b).
 - (2) [Reserved]

[48 FR 3735, Jan. 27, 1983]

Editorial Note: For Federal Register citations affecting 40 CFR 60.17, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

40 CFR 60.18 - General control device and work practice requirements

(a) Introduction.

- (1) This section contains requirements for control devices used to comply with applicable Subparts of 40 CFR 60 and 61. The requirements are placed here for administrative convenience and apply only to facilities covered by Subparts referring to this section.
- (2) This section also contains requirements for an alternative work practice used to identify leaking equipment. This alternative work practice is placed here for administrative convenience and is available to all Subparts in 40 CFR 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR 60 Appendix A-7, Method 21 monitor.

(b) Flares. Paragraphs (c) through (f) apply to flares.

(c)

- (1) Flares shall be designed for and operated with no visible emissions as determined by the methods specified in paragraph (f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
- (2) Flares shall be operated with a flame present at all times, as determined by the methods specified in paragraph (f).
- (3) An owner/operator has the choice of adhering to either the heat content specifications in paragraph (c)(3)(ii) of this section and the maximum tip velocity specifications in paragraph (c)(4) of this section, or adhering to the requirements in paragraph (c)(3)(i) of this section.

(i)

- (A) Flares shall be used that have a diameter of 3 inches or greater, are nonassisted, have a hydrogen content of 8.0 percent (by volume), or greater, and are designed for and operated with an exit velocity less than 37.2 m/sec (122 ft/sec) and less than the velocity, V_{max} , as determined by the following equation:

$$V_{max} = (X_{H_2} - K_1) * K_2$$

Where:

V_{max} = Maximum permitted velocity, m/sec.

K_1 = Constant, 6.0 volume-percent hydrogen.

K_2 = Constant, 3.9(m/sec)/volume-percent hydrogen.

X_{H_2} = The volume-percent of hydrogen, on a wet basis, as calculated by using the American Society for Testing and Materials (ASTM) Method D1946-77. (Incorporated by reference as specified in 40 CFR 60.17).

- (B) The actual exit velocity of a flare shall be determined by the method specified in paragraph (f)(4) of this section.

- (ii) Flares shall be used only with the net heating value of the gas being combusted being 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted being 7.45 MJ/scm (200 Btu/scf) or greater if the flare is nonassisted. The net heating value of the gas being combusted shall be determined by the methods specified in paragraph (f)(3) of this section.

(4)

- (i) Steam-assisted and nonassisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4) of this section, less than 18.3 m/sec (60 ft/sec), except as provided in paragraphs (c)(4) (ii) and (iii) of this section.
- (ii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf).
- (iii) Steam-assisted and nonassisted flares designed for and operated with an exit velocity, as determined by the methods specified in paragraph (f)(4), less than the velocity, V_{max} , as determined by the method specified in paragraph (f)(5), and less than 122 m/sec (400 ft/sec) are allowed.
- (5) Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max} , as determined by the method specified in paragraph (f)(6).

- (6) Flares used to comply with this section shall be steam-assisted, air-assisted, or nonassisted.
- (d) Owners or operators of flares used to comply with the provisions of this Subpart shall monitor these control devices to ensure that they are operated and maintained in conformance with their designs. Applicable Subparts will provide provisions stating how owners or operators of flares shall monitor these control devices.
- (e) Flares used to comply with provisions of this Subpart shall be operated at all times when emissions may be vented to them.
- (f)
 - (1) Method 22 of Appendix A to this part shall be used to determine the compliance of flares with the visible emission provisions of this Subpart. The observation period is 2 hours and shall be used according to Method 22.
 - (2) The presence of a flare pilot flame shall be monitored using a thermocouple or any other equivalent device to detect the presence of a flame.
 - (3) The net heating value of the gas being combusted in a flare shall be calculated using the following equation:

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

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where:

H_T = Net heating value of the sample, MJ/scm; where the net enthalpy per mole of offgas is based on combustion at 25 °C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 °C;

$$K = \text{Constant}, 1.740 \times 10^{-7} \left(\frac{1}{\text{ppm}} \right) \left(\frac{\text{g mole}}{\text{scm}} \right) \left(\frac{\text{MJ}}{\text{kcal}} \right)$$

where the standard temperature for $\left(\frac{\text{g mole}}{\text{scm}} \right)$ is 20°C;

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C_i = Concentration of sample component i in ppm on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77 or 90 (Reapproved 1994) (Incorporated by reference as specified in 40 CFR 60.17); and

H_i = Net heat of combustion of sample component i, kcal/g mole at 25 °C and 760 mm Hg. The heats of combustion may be determined using ASTM D2382-76 or 88 or D4809-95 (incorporated by reference as specified in 40 CFR 60.17) if published values are not available or cannot be calculated.

- (4) The actual exit velocity of a flare shall be determined by dividing the volumetric flowrate (in units of standard temperature and pressure), as determined by Reference Methods 2, 2A, 2C, or 2D as appropriate; by the unobstructed (free) cross sectional area of the flare tip.
- (5) The maximum permitted velocity, V_{\max} , for flares complying with paragraph (c)(4)(iii) shall be determined by the following equation.

$$\text{Log}_{10}(V_{\max}) = (H_T + 28.8) / 31.7$$

V_{\max} = Maximum permitted velocity, M/sec

28.8 = Constant

31.7 = Constant

H_T = The net heating value as determined in paragraph (f)(3).

- (6) The maximum permitted velocity, V_{\max} , for air-assisted flares shall be determined by the following equation.

$$V_{\max} = 8.706 + 0.7084 (H_T)$$

V_{\max} = Maximum permitted velocity, m/sec

8.706 = Constant

0.7084 = Constant

H_T = The net heating value as determined in paragraph (f)(3).

- (g) Alternative work practice for monitoring equipment for leaks. Paragraphs (g), (h), and (i) of this section apply to all equipment for which the applicable Subpart requires monitoring with a 40 CFR 60 Appendix A-7, Method 21 monitor, except for closed vent systems, equipment designated as leakless, and equipment identified in the applicable Subpart as having no detectable emissions, as indicated by an instrument reading of less than 500 ppm above background. An owner or operator may use an optical gas imaging instrument instead of a 40 CFR 60 Appendix A-7, Method 21 monitor. Requirements in the existing Subparts that are specific to the Method 21 instrument do not apply under this section. All other requirements in the applicable Subpart that are not addressed in paragraphs (g), (h), and (i) of this section apply to this standard. For example, equipment specification requirements, and non-Method 21 instrument recordkeeping and reporting requirements in the applicable Subpart continue to apply. The terms defined in paragraphs (g)(1) through (5) of this section have meanings that are specific to the alternative work practice standard in paragraphs (g), (h), and (i) of this section.
- (1) *Applicable Subpart* means the Subpart in 40 CFR 60, 61, 63, or 65 that requires monitoring of equipment with a 40 CFR 60 Appendix A-7, Method 21 monitor.
 - (2) *Equipment* means pumps, valves, pressure relief valves, compressors, open-ended lines, flanges, connectors, and other equipment covered by the applicable Subpart that require monitoring with a 40 CFR 60 Appendix A-7, Method 21 monitor.
 - (3) *Imaging* means making visible emissions that may otherwise be invisible to the naked eye.
 - (4) *Optical gas imaging instrument* means an instrument that makes visible emissions that may otherwise be invisible to the naked eye.
 - (5) *Repair* means that equipment is adjusted, or otherwise altered, in order to eliminate a leak.
 - (6) *Leak* means:
 - (i) Any emissions imaged by the optical gas instrument;
 - (ii) Indications of liquids dripping;
 - (iii) Indications by a sensor that a seal or barrier fluid system has failed; or
 - (iv) Screening results using a 40 CFR 60 Appendix A-7, Method 21 monitor that exceed the leak definition in the applicable Subpart to which the equipment is subject.
- (h) The alternative work practice standard for monitoring equipment for leaks is available to all Subparts in 40 CFR 60, 61, 63, and 65 that require monitoring of equipment with a 40 CFR 60 Appendix A-7, Method 21 monitor.
- (1) An owner or operator of an affected source subject to 40 CFR 60, 61, 63, or 65 can choose to comply with the alternative work practice requirements in paragraph (i) of this section instead of using the 40 CFR 60 Appendix A-7, Method 21 monitor to identify leaking equipment. The owner or operator must document the equipment, process units, and facilities for which the alternative work practice will be used to identify leaks.
 - (2) Any leak detected when following the leak survey procedure in paragraph (i)(3) of this section must be identified for repair as required in the applicable Subpart.
 - (3) If the alternative work practice is used to identify leaks, re-screening after an attempted repair of leaking equipment must be conducted using either the alternative work practice or the 40 CFR 60 Appendix A-7, Method 21 monitor at the leak definition required in the applicable Subpart to which the equipment is subject.
 - (4) The schedule for repair is as required in the applicable Subpart.
 - (5) When this alternative work practice is used for detecting leaking equipment, choose one of the monitoring frequencies listed in Table 1 to Subpart A of this part in lieu of the monitoring frequency specified for regulated equipment in the applicable Subpart. Reduced monitoring frequencies for good performance are not applicable when using the alternative work practice.
 - (6) When this alternative work practice is used for detecting leaking equipment the following are not applicable for the equipment being monitored:
 - (i) Skip period leak detection and repair;
 - (ii) Quality improvement plans; or
 - (iii) Complying with standards for allowable percentage of valves and pumps to leak.

- (7) When the alternative work practice is used to detect leaking equipment, the regulated equipment in paragraph (h)(1)(i) of this section must also be monitored annually using a 40 CFR 60 Appendix A-7, Method 21 monitor at the leak definition required in the applicable Subpart. The owner or operator may choose the specific monitoring period (for example, first quarter) to conduct the annual monitoring. Subsequent monitoring must be conducted every 12 months from the initial period. Owners or operators must keep records of the annual Method 21 screening results, as specified in paragraph (i)(4)(vii) of this section.
- (i) An owner or operator of an affected source who chooses to use the alternative work practice must comply with the requirements of paragraphs (i)(1) through (i)(5) of this section.
- (1) Instrument Specifications. The optical gas imaging instrument must comply with the requirements in (i)(1)(i) and (i)(1)(ii) of this section.
- (i) Provide the operator with an image of the potential leak points for each piece of equipment at both the detection sensitivity level and within the distance used in the daily instrument check described in paragraph (i)(2) of this section. The detection sensitivity level depends upon the frequency at which leak monitoring is to be performed.
- (ii) Provide a date and time stamp for video records of every monitoring event.
- (2) Daily Instrument Check. On a daily basis, and prior to beginning any leak monitoring work, test the optical gas imaging instrument at the mass flow rate determined in paragraph (i)(2)(i) of this section in accordance with the procedure specified in paragraphs (i)(2)(ii) through (i)(2)(iv) of this section for each camera configuration used during monitoring (for example, different lenses used), unless an alternative method to demonstrate daily instrument checks has been approved in accordance with paragraph (i)(2)(v) of this section.
- (i) Calculate the mass flow rate to be used in the daily instrument check by following the procedures in paragraphs (i)(2)(i)(A) and (i)(2)(i)(B) of this section.
- (A) For a specified population of equipment to be imaged by the instrument, determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, within the distance to be used in paragraph (i)(2)(iv)(B) of this section, at or below the standard detection sensitivity level.
- (B) Multiply the standard detection sensitivity level, corresponding to the selected monitoring frequency in Table 1 of Subpart A of this part, by the mass fraction of detectable chemicals from the stream identified in paragraph (i)(2)(i)(A) of this section to determine the mass flow rate to be used in the daily instrument check, using the following equation.

$$E_{dic} = (E_{sds}) \sum_{i=1}^k x_i$$

Where:

E_{dic} = Mass flow rate for the daily instrument check, grams per hour

x_i = Mass fraction of detectable chemical(s) i seen by the optical gas imaging instrument, within the distance to be used in paragraph (i)(2)(iv)(B) of this section, at or below the standard detection sensitivity level, E_{sds} .

E_{sds} = Standard detection sensitivity level from Table 1 to Subpart A, grams per hour

k = Total number of detectable chemicals emitted from the leaking equipment and seen by the optical gas imaging instrument.

- (ii) Start the optical gas imaging instrument according to the manufacturer's instructions, ensuring that all appropriate settings conform to the manufacturer's instructions.
- (iii) Use any gas chosen by the user that can be viewed by the optical gas imaging instrument and that has a purity of no less than 98 percent.
- (iv) Establish a mass flow rate by using the following procedures:
- (A) Provide a source of gas where it will be in the field of view of the optical gas imaging instrument.
- (B) Set up the optical gas imaging instrument at a recorded distance from the outlet or leak orifice of the flow meter that will not be exceeded in the actual performance of the leak survey. Do not exceed the operating parameters of the flow meter.

- (C) Open the valve on the flow meter to set a flow rate that will create a mass emission rate equal to the mass rate specified in paragraph (i)(2)(i) of this section while observing the gas flow through the optical gas imaging instrument viewfinder. When an image of the gas emission is seen through the viewfinder at the required emission rate, make a record of the reading on the flow meter.
 - (v) Repeat the procedures specified in paragraphs (i)(2)(ii) through (i)(2)(iv) of this section for each configuration of the optical gas imaging instrument used during the leak survey.
 - (vi) To use an alternative method to demonstrate daily instrument checks, apply to the Administrator for approval of the alternative under 40 CFR 60.13(i).
- (3) Leak Survey Procedure. Operate the optical gas imaging instrument to image every regulated piece of equipment selected for this work practice in accordance with the instrument manufacturer's operating parameters. All emissions imaged by the optical gas imaging instrument are considered to be leaks and are subject to repair. All emissions visible to the naked eye are also considered to be leaks and are subject to repair.
- (4) Recordkeeping. You must keep the records described in paragraphs (i)(4)(i) through (i)(4)(vii) of this section:
- (i) The equipment, processes, and facilities for which the owner or operator chooses to use the alternative work practice.
 - (ii) The detection sensitivity level selected from Table 1 to Subpart A of this part for the optical gas imaging instrument.
 - (iii) The analysis to determine the piece of equipment in contact with the lowest mass fraction of chemicals that are detectable, as specified in paragraph (i)(2)(i)(A) of this section.
 - (iv) The technical basis for the mass fraction of detectable chemicals used in the equation in paragraph (i)(2)(i)(B) of this section.
 - (v) The daily instrument check. Record the distance, per paragraph (i)(2)(iv)(B) of this section, and the flow meter reading, per paragraph (i)(2)(iv)(C) of this section, at which the leak was imaged. Keep a video record of the daily instrument check for each configuration of the optical gas imaging instrument used during the leak survey (for example, the daily instrument check must be conducted for each lens used). The video record must include a time and date stamp for each daily instrument check. The video record must be kept for 5 years.
 - (vi) Recordkeeping requirements in the applicable Subpart. A video record must be used to document the leak survey results. The video record must include a time and date stamp for each monitoring event. A video record can be used to meet the recordkeeping requirements of the applicable Subparts if each piece of regulated equipment selected for this work practice can be identified in the video record. The video record must be kept for 5 years.
 - (vii) The results of the annual Method 21 screening required in paragraph (h)(7) of this section. Records must be kept for all regulated equipment specified in paragraph (h)(1) of this section. Records must identify the equipment screened, the screening value measured by Method 21, the time and date of the screening, and calibration information required in the existing applicable Subpart.
- (5) Reporting. Submit the reports required in the applicable Subpart. Submit the records of the annual Method 21 screening required in paragraph (h)(7) of this section to the Administrator via e-mail to *CCG-AWP@EPA.GOV*.

[51 FR 2701, Jan. 21, 1986, as amended at 63 FR 24444, May 4, 1998; 65 FR 61752, Oct. 17, 2000; 73 FR 78209, Dec. 22, 2008]

40 CFR 60.19 - General notification and reporting requirements

- (a) For the purposes of this part, time periods specified in days shall be measured in calendar days, even if the word “calendar” is absent, unless otherwise specified in an applicable requirement.
- (b) For the purposes of this part, if an explicit postmark deadline is not specified in an applicable requirement for the submittal of a notification, application, report, or other written communication to the Administrator, the owner or operator shall postmark the submittal on or before the number of days specified in the applicable requirement. For example, if a notification must be submitted 15 days before a particular event is scheduled to take place, the notification shall be postmarked on or before 15 days preceding the event; likewise, if a notification must be submitted 15 days after a particular event takes place, the notification shall be delivered or postmarked on or before 15 days following the end of

the event. The use of reliable non-Government mail carriers that provide indications of verifiable delivery of information required to be submitted to the Administrator, similar to the postmark provided by the U.S. Postal Service, or alternative means of delivery, including the use of electronic media, agreed to by the permitting authority, is acceptable.

- (c) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.
- (d) If an owner or operator of an affected facility in a State with delegated authority is required to submit periodic reports under this part to the State, and if the State has an established timeline for the submission of periodic reports that is consistent with the reporting frequency(ies) specified for such facility under this part, the owner or operator may change the dates by which periodic reports under this part shall be submitted (without changing the frequency of reporting) to be consistent with the State's schedule by mutual agreement between the owner or operator and the State. The allowance in the previous sentence applies in each State beginning 1 year after the affected facility is required to be in compliance with the applicable Subpart in this part. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.
- (e) If an owner or operator supervises one or more stationary sources affected by standards set under this part and standards set under 40 CFR 61, 63, or both such parts of this chapter, he/she may arrange by mutual agreement between the owner or operator and the Administrator (or the State with an approved permit program) a common schedule on which periodic reports required by each applicable standard shall be submitted throughout the year. The allowance in the previous sentence applies in each State beginning 1 year after the stationary source is required to be in compliance with the applicable Subpart in this part, or 1 year after the stationary source is required to be in compliance with the applicable 40 CFR 61 or 63 of this chapter standard, whichever is latest. Procedures governing the implementation of this provision are specified in paragraph (f) of this section.
- (f)
 - (1)
 - (i) Until an adjustment of a time period or postmark deadline has been approved by the Administrator under paragraphs (f)(2) and (f)(3) of this section, the owner or operator of an affected facility remains strictly subject to the requirements of this part.
 - (ii) An owner or operator shall request the adjustment provided for in paragraphs (f)(2) and (f)(3) of this section each time he or she wishes to change an applicable time period or postmark deadline specified in this part.
 - (2) Notwithstanding time periods or postmark deadlines specified in this part for the submittal of information to the Administrator by an owner or operator, or the review of such information by the Administrator, such time periods or deadlines may be changed by mutual agreement between the owner or operator and the Administrator. An owner or operator who wishes to request a change in a time period or postmark deadline for a particular requirement shall request the adjustment in writing as soon as practicable before the subject activity is required to take place. The owner or operator shall include in the request whatever information he or she considers useful to convince the Administrator that an adjustment is warranted.
 - (3) If, in the Administrator's judgment, an owner or operator's request for an adjustment to a particular time period or postmark deadline is warranted, the Administrator will approve the adjustment. The Administrator will notify the owner or operator in writing of approval or disapproval of the request for an adjustment within 15 calendar days of receiving sufficient information to evaluate the request.
 - (4) If the Administrator is unable to meet a specified deadline, he or she will notify the owner or operator of any significant delay and inform the owner or operator of the amended schedule.

[59 FR 12428, Mar. 16, 1994, as amended at 64 FR 7463, Feb. 12, 1998]

Table 1 to Subpart A to 40 CFR 60 - Detection Sensitivity Levels (grams per hour)

Monitoring frequency per Subpart^a	Detection sensitivity level
Bi-Monthly	60
Semi-Quarterly	85
Monthly	100

^aWhen this alternative work practice is used to identify leaking equipment, the owner or operator must choose one of the monitoring frequencies listed in this table in lieu of the monitoring frequency specified in the applicable Subpart. Bi-monthly means every other month. Semi-quarterly means twice per quarter. Monthly means once per month.

[73 FR 78211, Dec. 22, 2008]

PART 60-STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

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

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[Table 4 to Subpart III of Part 60-Emission Standards for Stationary Fire Pump Engines](#)

[Table 5 to Subpart III of Part 60-Labeling and Recordkeeping Requirements for New Stationary Emergency Engines](#)

[Table 6 to Subpart III of Part 60-Optional 3-Mode Test Cycle for Stationary Fire Pump Engines](#)

[Table 7 to Subpart III of Part 60-Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥30 Liters per Cylinder](#)

[Table 8 to Subpart III of Part 60-Applicability of General Provisions to Subpart III](#)

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

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What This Subpart Covers

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40 CFR 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 40 CFR 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 70 or 40 CFR 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 1068 Subpart C (or the exemptions described in 40 CFR 89 Subpart J and 40 CFR 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]

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Emission Standards for Manufacturers

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40 CFR 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 94 or, if Table 1 to 40 CFR 1042.1

identifies 40 CFR 1042 as being applicable, 40 CFR 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]

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40 CFR 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 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 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]

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40 CFR 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 40 CFR 40 CFR 60.4201 and 60.4202 during the certified emissions life of the engines.

[76 FR 37968, June 28, 2011]

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Emission Standards for Owners and Operators

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40 CFR 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 40 CFR 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 NO_x 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) $45 n^{-0.2}$ 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 and before January 1, 2016, limit the emissions of NO_x 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) For engines installed on or after January 1, 2016, limit the emissions of NO_x 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) $9.0 n^{-0.20}$ g / KW-hr ($6.7 n^{-0.20}$ 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 40 CFR 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]

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40 CFR 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 40 CFR 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 NO_x 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 NO_x 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 40 CFR 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]

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40 CFR 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 40 CFR 60.4204 and 60.4205 over the entire life of the engine.

[76 FR 37969, June 28, 2011]

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Fuel Requirements for Owners and Operators

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40 CFR 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 40 CFR 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]

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Other Requirements for Owners and Operators

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40 CFR 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 40 CFR 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]

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40 CFR 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 40 CFR 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 40 CFR 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]

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Compliance Requirements

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40 CFR 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 40 CFR 60.4201(a) through (c) and 40 CFR 60.4202(a), (b) and (d) using the certification procedures required in 40 CFR 89 Subpart B, or 40 CFR 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 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 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 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 40 CFR 60.4201(d) and (e) and 40 CFR 60.4202(e) and (f) using the certification procedures required in 40 CFR 94 Subpart C, or 40 CFR 1042 Subpart C, as applicable, and must test their engines as specified in 40 CFR 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 1068 for engines that are certified to the emission standards in 40 CFR 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR 89, 40 CFR 94 or 40 CFR 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 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 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 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 40 CFR 60.4202 but does not meet all the emission standards for non-emergency engines in 40 CFR 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 40 CFR 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]

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40 CFR 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 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 40 CFR 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 40 CFR 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 89 or 40 CFR 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 40 CFR 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 40 CFR 60.4204(b) or 40 CFR 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 40 CFR 60.4205(c), you must comply by purchasing an engine certified to the emission standards in 40 CFR 60.4204(b), or 40 CFR 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 40 CFR 60.4204(c) or 40 CFR 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 40 CFR 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 NO_x 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 NO_x 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 40 CFR 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 40 CFR 60.4204(e) or 40 CFR 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 40 CFR 60.4204(e) or 40 CFR 60.4205(f), as applicable.

(2) Conducting a performance test to demonstrate initial compliance with the emission standards according to the requirements specified in 40 CFR 60.4212 or 40 CFR 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 40 CFR 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]

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Testing Requirements for Owners and Operators

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40 CFR 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 1039 Subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR 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 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 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:

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

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 40 CFR 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 40 CFR 60.4204(a), 40 CFR 60.4205(a), or 40 CFR 60.4205(c) must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard in 40 CFR 60.4204(a), 40 CFR 60.4205(a), or 40 CFR 60.4205(c), determined from the equation in paragraph (c) of this section.

Where:

STD = The standard specified for that pollutant in 40 CFR 60.4204(a), 40 CFR 60.4205(a), or 40 CFR 60.4205(c).

Alternatively, stationary CI ICE that are complying with the emission standards for pre-2007 model year engines in 40 CFR 60.4204(a), 40 CFR 60.4205(a), or 40 CFR 60.4205(c) may follow the testing procedures specified in 40 CFR 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 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]

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40 CFR 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 40 CFR 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 40 CFR 60.8(c).

(c) You must conduct three separate test runs for each performance test required in this section, as specified in 40 CFR 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:

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

Where:

C_i = concentration of NO_x or PM at the control device inlet,

C_o = concentration of NO_x or PM at the control device outlet, and

R = percent reduction of NO_x or PM emissions.

(2) You must normalize the NO_x or PM concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen (O_2) using Equation 3 of this section, or an equivalent percent carbon dioxide (CO_2) using the procedures described in paragraph (d)(3) of this section.

$$C_{\text{adj}} = C_d \frac{5.9}{20.9 - \% \text{O}_2} \quad (\text{Eq. 3})$$

Where:

C_{adj} = Calculated NO_x or PM concentration adjusted to 15 percent O_2 .

C_d = Measured concentration of NO_x or PM, uncorrected.

5.9 = 20.9 percent O_2 - 15 percent O_2 , the defined O_2 correction value, percent.

$\% \text{O}_2$ = Measured O_2 concentration, dry basis, percent.

(3) If pollutant concentrations are to be corrected to 15 percent O_2 and CO_2 concentration is measured in lieu of O_2 concentration measurement, a CO_2 correction factor is needed. Calculate the CO_2 correction factor as described in paragraphs (d)(3)(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:

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

Where:

F_o = Fuel factor based on the ratio of O_2 volume to the ultimate CO_2 volume produced by the fuel at zero percent excess air.

0.209 = Fraction of air that is O_2 , 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 ($\text{dscf} / 10^6 \text{ Btu}$).

F_c = Ratio of the volume of CO_2 produced to the gross calorific value of the fuel from Method 19, dsm^3 / J ($\text{dscf} / 10^6 \text{ Btu}$).

(ii) Calculate the CO_2 correction factor for correcting measurement data to 15 percent O_2 , as follows:

$$X_{\text{CO}_2} = \frac{5.9}{F_o} \quad (\text{Eq. 5})$$

Where:

X_{CO_2} = 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 NO_x and PM gas concentrations adjusted to 15 percent O_2 using CO_2 as follows:

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

Where:

C_{adj} = Calculated NO_x or PM concentration adjusted to 15 percent O_2 .

C_d = Measured concentration of NO_x or PM, uncorrected.

$\%CO_2$ = Measured CO_2 concentration, dry basis, percent.

(e) 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 7 of this section:

$$ER = \frac{C_d \times 1.912 \times 10^{-3} \times Q \times T}{KW\text{-hour}} \quad (\text{Eq. 7})$$

Where:

ER = Emission rate in grams per KW-hour.

C_d = Measured NO_x concentration in ppm.

1.912×10^{-3} = Conversion constant for ppm NO_x 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:

$$ER = \frac{C_{adj} \times Q \times T}{KW\text{-hour}} \quad (\text{Eq. 8})$$

Where:

ER = Emission rate in grams per KW-hour.

C_{adj} = 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]

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Notification, Reports, and Records for Owners and Operators

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40 CFR 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 40 CFR 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 40 CFR 60.4211(f)(2)(ii) and (iii) or that operates for the purposes specified in 40 CFR 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 40 CFR 60.4211(f)(2)(ii) and (iii), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii).
- (vi) Number of hours the engine is contractually obligated to be available for the purposes specified in 40 CFR 60.4211(f)(2)(ii) and (iii).
- (vii) Hours spent for operation for the purposes specified in 40 CFR 60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR 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 40 CFR 60.4.

[71 FR 39172, July 11, 2006, as amended at 78 FR 6696, Jan. 30, 2013]

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Special Requirements

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40 CFR 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 40 CFR 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 40 CFR 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 NO_x 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 NO_x 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]

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40 CFR 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 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 94 or 1042, as appropriate, rather than the otherwise applicable requirements of 40 CFR 89 and 1039, as indicated in sections 40 CFR 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 40 CFR 60.4202 and 40 CFR 60.4205, and not those for non-emergency engines in 40 CFR 60.4201 and 40 CFR 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 40 CFR 60.4201 and 40 CFR 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 40 CFR 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 40 CFR 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 40 CFR 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]

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40 CFR 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 40 CFR 60.4204 or 40 CFR 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]

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General Provisions

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40 CFR 60.4218 - What parts of the General Provisions apply to me?

Table 8 to this subpart shows which parts of the General Provisions in 40 CFR 60.1 through 60.19 apply to you.

DEFINITIONS

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40 CFR 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 40 CFR 60.4211(f) in order to be considered emergency stationary ICE. If the engine does not comply with the requirements specified in 40 CFR 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 40 CFR 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 40 CFR 60.4211(f)(2)(ii) or (iii) and 40 CFR 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 60 Subpart III.

[71 FR 39172, July 11, 2006, as amended at 76 FR 37972, June 28, 2011; 78 FR 6696, Jan. 30, 2013]

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Table 1 to Subpart III of 40 CFR 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 40 CFR 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)		
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)

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Table 2 to Subpart IIII of 40 CFR 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 40 CFR 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 < 7 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)

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Table 3 to Subpart IIII of 40 CFR 60 - Certification Requirements for Stationary Fire Pump Engines

[As stated in 40 CFR 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 40 CFR 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

¹Manufacturers 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]

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Table 4 to Subpart IIII of 40 CFR 60 - Emission Standards for Stationary Fire Pump Engines

[As stated in 40 CFR 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)
$8 \leq \text{KW} < 19$ ($11 \leq \text{HP} < 25$)	2010 and earlier	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	2011+	7.5 (5.6)		0.40 (0.30)
$19 \leq \text{KW} < 37$ ($25 \leq \text{HP} < 50$)	2010 and earlier	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	2011+	7.5 (5.6)		0.30 (0.22)
$37 \leq \text{KW} < 56$ ($50 \leq \text{HP} < 75$)	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)
$56 \leq \text{KW} < 75$ ($75 \leq \text{HP} < 100$)	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)
$75 \leq \text{KW} < 130$ ($100 \leq \text{HP} < 175$)	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)
$130 \leq \text{KW} < 225$ ($175 \leq \text{HP} < 300$)	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)
$225 \leq \text{KW} < 450$ ($300 \leq \text{HP} < 600$)	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)
$450 \leq \text{KW} \leq 560$ ($600 \leq \text{HP} \leq 750$)	2008 and earlier	10.5 (7.8)	3.5 (2.6)	0.54 (0.40)
	2009+	4.0 (3.0)		0.20 (0.15)
$\text{KW} > 560$ ($\text{HP} > 750$)	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.

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Table 5 to Subpart IIII of 40 CFR 60 - Labeling and Recordkeeping Requirements for New Stationary Emergency Engines

[You must comply with the labeling requirements in 40 CFR 60.4210(f) and the recordkeeping requirements in 40 CFR 60.4214(b) for new emergency stationary CI ICE beginning in the following model years:]

Engine power	Starting model year
$19 \leq \text{KW} < 56$ ($25 \leq \text{HP} < 75$)	2013
$56 \leq \text{KW} < 130$ ($75 \leq \text{HP} < 175$)	2012
$\text{KW} \geq 130$ ($\text{HP} \geq 175$)	2011

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Table 6 to Subpart IIII of 40 CFR 60 - Optional 3-Mode Test Cycle for Stationary Fire Pump Engines

[As stated in 40 CFR 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.

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Table 7 to Subpart IIII of 40 CFR 60 - Requirements for Performance Tests for Stationary CI ICE With a Displacement of ≥ 30 Liters per Cylinder

[As stated in 40 CFR 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 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 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 60 Appendix A, Method 320 of 40 CFR 63 Appendix A, or ASTM D 6348-03 (incorporated by reference, see 40 CFR 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 60 Appendix A, Method 320 of 40 CFR 63 Appendix A, or ASTM D 6348-03 (incorporated by reference, see 40 CFR 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 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 ₂ concentration of the stationary internal combustion engine exhaust at the sampling port location; and,	(2) Method 3, 3A, or 3B of 40 CFR 60 Appendix A	(b) Measurements to determine O ₂ concentration must be made at the same time as the measurement for NO _x 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 60 Appendix A, Method 320 of 40 CFR 63 Appendix A, or ASTM D 6348-03 (incorporated by reference, see 40 CFR 60.17)	(c) Measurements to determine moisture content must be made at the same time as the measurement for NO _x concentration.
		iv. Measure NO _x at the exhaust of the stationary internal combustion engine	(4) Method 7E of 40 CFR 60 Appendix A, Method 320 of 40 CFR 63 Appendix A, or ASTM D 6348-03 (incorporated by reference, see 40 CFR 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.
	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 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 60 Appendix A	(b) Measurements to determine O ₂ concentration 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 60 Appendix A	(c) Measurements to determine and moisture content must be made at the same time as the measurements for PM concentration.
		iv. Measure PM at the inlet and outlet of the control device	(4) Method 5 of 40 CFR 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	i. Select the sampling	(1) Method 1 or 1A of 40	(a) If using a control device,

	concentration of PM in the stationary CI internal combustion engine exhaust	port location and the number of traverse points;	CFR 60 Appendix A	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; and	(2) Method 3, 3A, or 3B of 40 CFR 60 Appendix A	(b) Measurements to determine O ₂ concentration 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 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 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.

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Table 8 to Subpart IIII of 40 CFR 60 - Applicability of General Provisions to Subpart IIII

[As stated in 40 CFR 60.4218, you must comply with the following applicable General Provisions:]

General Provisions citation	Subject of citation	Applies to subpart	Explanation
40 CFR 60.1	General applicability of the General Provisions	Yes	
40 CFR 60.2	Definitions	Yes	Additional terms defined in 40 CFR 60.4219.
40 CFR 60.3	Units and abbreviations	Yes	
40 CFR 60.4	Address	Yes	
40 CFR 60.5	Determination of construction or modification	Yes	
40 CFR 60.6	Review of plans	Yes	
40 CFR 60.7	Notification and Recordkeeping	Yes	Except that 40 CFR 60.7 only applies as specified in 40 CFR 60.4214(a).
40 CFR 60.8	Performance tests	Yes	Except that 40 CFR 60.8 only applies to stationary CI ICE with a displacement of (≥ 30 liters per cylinder and engines that are not certified.
40 CFR 60.9	Availability of information	Yes	

40 CFR 60.10	State Authority	Yes	
40 CFR 60.11	Compliance with standards and maintenance requirements	No	Requirements are specified in Subpart IIII.
40 CFR 60.12	Circumvention	Yes	
40 CFR 60.13	Monitoring requirements	Yes	Except that 40 CFR 60.13 only applies to stationary CI ICE with a displacement of (\geq 30 liters per cylinder.
40 CFR 60.14	Modification	Yes	
40 CFR 60.15	Reconstruction	Yes	
40 CFR 60.16	Priority list	Yes	
40 CFR 60.17	Incorporations by reference	Yes	
40 CFR 60.18	General control device requirements	No	
40 CFR 60.19	General notification and reporting requirements	Yes	

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