

Appendix A – Applicability Reports

ver 12/10/08

Note: A MS Word version of this Appendix can be found at:

<http://www.colorado.gov/cs/Satellite/CDPHE-AP/CBON/1251597655816>

DISCLAIMER:

These are only example reports and do not cover all possible requirements.

Engine AOS Applicability Report Certification Language

All information for the Applicability Reports must be certified by either 1) for Operating Permits, a Responsible Official as defined in Colorado Regulation No. 3, Part A, Section I.B.38. or 2) for Construction and General Permits, the person legally authorized to act on behalf of the source. This signed certification document must be packaged with the documents being submitted.

I have reviewed this certification in its entirety and, based on information and belief formed after reasonable inquiry, I certify that the statements and information contained in this certification are true, accurate and complete. Further, I agree that by signing and submitting these documents I agree that any new requirements identified in the Applicability Report(s) shall be considered to be Applicable Requirements as defined in Colorado Regulation No. 3, section I.B.9., and that such requirements shall be enforceable by the Division and its agents and shall be considered to be revisions to the underlying permit(s) referenced in the Report(s) until such time as the Permit is revised to reflect the new requirements.

Please note that the Colorado Statutes state that any person who knowingly, as defined in § 18-1-501(6), C.R.S., makes any false material statement, representation, or certification in this document is guilty of a misdemeanor and may be punished in accordance with the provisions of § 25-7 122.1, C.R.S.

Printed or Typed Name

Title

Signature

Date Signed

**Colorado Regulation No. 7
Sections XVI and XVII.E**

DISCLAIMER: This is only an example report and does not cover all possible Reg 7 requirements.

Company: Acme Gas Processing
Source ID: 999/1234/001
Permit #: 93OPXX999
Date: October 1, 2008

Determination of compliance and reporting requirements for a

Manufacturer: BestEngineCompany
Model: 777 LowNox
Nameplate HP: 1340
Construction date: July 1, 2007

Note: If the engine is exempt from a requirement due to construction date or was relocated from within Colorado, supporting documentation must be provided.

Determination of Regulation No. 7 requirements:

Regulation No. 7, § XVI

Does not apply to this engine. Engine is not located in the ozone nonattainment area or does not have a manufacturer's design rate greater than 500 horsepower or did not commence operation on or after June 1, 2004.

Does apply to this engine and applicable emissions controls have been installed.

Regulation No. 7, § XVII.E

Does not apply to this engine. Engine does not have a maximum horsepower greater than 100 or the construction or relocation date precedes the applicability dates.

Does apply to this engine. The following emission limits apply to the engine:

NO_x (g/hp-hr): 2.0
CO (g/hp-hr): 4.0
VOC (g/hp-hr): 1.0

Max Engine HP	Construction or Relocation Date	Emission Standards in g/hp-hr		
		NO _x	CO	VOC
100<Hp<500	January 1, 2008	2.0	4.0	1.0
	January 1, 2011	1.0	2.0	0.7
500≤Hp	July 1, 2007	2.0	4.0	1.0
	July 1, 2010	1.0	2.0	0.7

NSPS JJJJ Example Report Format

DISCLAIMER: This is only an example report and does not cover all possible JJJJ requirements.

Note that as of September 1, 2008 that the Division has not yet adopted NSPS JJJJ. Until such time as it does, any engine subject to NSPS will be subject only under Federal law. Once the Division adopts NSPS JJJJ, there will be an additional step added to the determination of the NSPS. Under the provisions of Regulation No. 6, Part B, § I.B (which is referenced in Part A), any engine relocated from outside of the State of Colorado into the State of Colorado is considered to be a new source, subject to the requirements of NSPS JJJJ.

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

Company: Acme Gas Processing
Source ID: 999/1234/001
Permit #: 93OPXX999
Date: October 1, 2008

Manufacturer: BestEngineCompany
Model: 777 LowNox
Nameplate HP: 1340
Engine Type: 2 Stroke Rich Burn
Manufacture Date: July 1, 2007
Date Engine Ordered: April 1, 2007

Note: If the engine is exempt from a requirement due to construction/manufacture date, supporting documentation must be provided.

Upon adoption of NSPS Subpart JJJJ into Colorado Regulation No. 6, Part A, if the engine is exempt because the engine was relocated within the state of Colorado, supporting documentation must be provided.

NSPS JJJJ **does not apply** to this engine.

NSPS JJJJ **does apply** to this engine.

Note: Using the format below, the source must submit to the Division an analysis of all of the NSPS JJJJ applicable requirements that apply to this specific engine. **The analysis below is an example only**, based on a hypothetical engine that is a rich burn engine, greater than 500 HP, with a manufacture date after July 1, 2007.

Determination of NSPS JJJJ requirements:

60.4230 Applicability

- (a)(4)(i) Applies to this engine since it is a rich burn engine, greater than 500 HP, with a manufacture date after July 1, 2007.

60.4233 Emission Standards for Owners and Operators

- (e) Owners and operators of stationary SI ICE with a maximum engine power greater than 100 HP must comply with the standards in Table 1.
Non-Emergency SI, Natural Gas, HP \geq 500, Manufactured after 7/1/2007
- | | |
|-----------------|---|
| NO _x | 2.0 g/HP-hr or 160 ppmvd@15% O ₂ |
| CO | 4.0 g/HP-hr or 540 ppmvd@15% O ₂ |
| VOC | 1.0 g/HP-hr or 86 ppmvd@15% O ₂ |

Other Requirements for Owners and Operators

- 60.4234 Emission standards must be met for the lifetime of the engine.
60.4235 N/A - Sulfur content of gasoline.
60.4236 N/A (for now) - After July 1, 2009 owners and operators may not install engines with a power rating \geq 500HP that do not meet the emissions standards in 60.4230.
60.4237 N/A - Emergency Engines.

60.4238 - 60.4242 Compliance Requirements for Manufacturers – (Not Applicable)

60.4243 Compliance Requirements for Owners and Operators

- (b)(2)(ii) To maintain compliance with the emission limits in 60.4233, owners of SI ICE \geq 500HP must:
- Keep a maintenance plan;
 - Keep records of conducted maintenance;
 - Maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions;
 - Conduct an initial performance test; and
 - Conduct subsequent performance tests every 8,760 hours or every three years, which ever comes first, in order to demonstrate compliance with the emission limits.
- (g) Air to fuel ratio controllers (AFRCs) must be maintained and operated appropriately in order to ensure proper operation of the engine and control device to minimize emissions at all times.

60.4244 Testing Requirements for Owners and Operators

- (a) Each performance test must be conducted within 10% of the highest achievable load and must comply with the testing requirements listed in 60.8 and Table 2 of NSPS JJJJ.

- (b) Performance tests may not be conducted during periods of startup, shutdown, or malfunction, as specified in 60.8(c). If the engine is non-operational when a performance test is due, the engine does not need to be started up just to test it, but will need to be tested immediately upon startup.
- (c) Three separate test runs must be conducted for each performance test as specified by 60.8(f). Each run must be within 10% of max load and be at least 1 hour in duration.
- (d) To determine compliance with the NO_x, CO, and VOC mass per unit output emission limitations, the measured concentration must be converted using the equations outlined in this section of NSPS JJJJ.

60.4245 Notification, Reports, and Records for Owners and Operators

- (a) Owners of all stationary SI ICE must keep records of the following:
 - (1) All notifications submitted to comply with this subpart;
 - (2) Maintenance conducted on the engine;
 - (3) N/A - Manufacturer information for certified engines, and
 - (4) Documentation that shows non-certified engines are in compliance with the emission standards.
- (b) N/A – For emergency engines only.
- (c) Owners of non-certified engines \geq 500HP must submit an initial notification as required in 60.7(a)(1) which includes the following information:
 - (1) Name and address of the owner or operator;
 - (2) The address of the affected source;
 - (3) Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement;
 - (4) Emission control equipment; and
 - (5) Fuel used.

CONCLUSION OF FINDINGS (EXAMPLE ONLY)

In general, Acme's 1,235HP, Waukesha 7042 GSI engine is subject to the emissions limitations summarized in Table 1 of NSPS JJJJ. ACME will meet these emission limitations using an AFRC and a non-selective catalytic converter (NSCR). These emission rates will be met throughout the life of the engine. A maintenance plan will be kept and all maintenance activities will be recorded. Compliance with the emission limits will be confirmed by the initial performance tests, which shall be conducted following the procedures outlined in 60.4244. Copies of performance test results will be submitted within 60 days of the completion of each test. Since this is an uncertified engine, an initial notification will be submitted including all of the requested information in 40.4245 within 30 days of startup. ACME will keep records of all compliance related materials.

MACT ZZZZ Area Source Example Report Format

DISCLAIMER: This is only an example report and does not cover all possible ZZZZ requirements.

MACT Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Company: Acme Gas Processing
Source ID: 999/1234/001
Permit #: 93OPXX999
Date: October 1, 2008

Manufacturer: Best Engine Company
Model: 777 LowNox
Nameplate HP: 1340
Engine Type: 2 Stroke Rich Burn
Manufacture Date: July 1, 2007
Date Engine Ordered: April 1, 2007

Note: If the engine is exempt from a requirement due to construction/reconstruction date, supporting documentation must be provided.

MACT ZZZZ **does not apply** to this engine.

MACT ZZZZ **does apply** to this engine.

Note: Using the format below, the source must submit to the Division an analysis of all of the area source MACT ZZZZ applicable requirements that apply to this specific engine. **The analysis below is an example only**, based on a hypothetical new engine located at an area source of HAP emissions.

Determination of MACT ZZZZ requirements:

63.6585 Applicability

This subpart is applicable to Acme's engine since they are going to be operating a new stationary reciprocating internal combustion engine (RICE) at an area source of HAP emissions.

63.6590 What Parts of My Plant Does This Subpart Cover?

- (c) A new or reconstructed stationary RICE located at an area source of HAP emissions that is subject to 40 CFR Part 60, must meet the requirements of this part by meeting the requirements of 40 CFR Part 60 subpart JJJJ.

CONCLUSION OF FINDINGS (EXAMPLE ONLY)

Since this engine is subject to NSPS JJJJ, no additional requirements apply under MACT ZZZZ.

MACT ZZZZ Major Source Example Report Format

DISCLAIMER: This is only an example report and does not cover all possible ZZZZ requirements.

MACT Subpart ZZZZ: National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

Company: Acme Gas Processing
Source ID: 999/1234/001
Permit #: 93OPXX999
Date: October 1, 2008

Manufacturer: BestEngineCompany
Model: 777 LowNox
Nameplate HP: 1340
Engine Type: 2 Stroke Rich Burn
Manufacture Date: July 1, 2007
Date Engine Ordered: April 1, 2007

Note: If the engine is exempt from a requirement due to construction/reconstruction date, supporting documentation must be provided.

MACT ZZZZ **does not apply** to this engine.

MACT ZZZZ **does apply** to this engine.

Note: Using the format below, the source must submit to the Division an analysis of all of the major source MACT ZZZZ applicable requirements that apply to this specific engine. **The analysis below is an example only**, based on a hypothetical new engine located at a major source of HAP emissions.

Determination of MACT ZZZZ requirements:

63.6585 Applicability

This subpart is applicable to Acme's engine since they are going to be operating a new stationary reciprocating internal combustion engine (RICE) at a major source of HAP emissions.

63.6590 What Parts of My Plant Does This Subpart Cover?

This subpart covers Acme's new stationary reciprocating internal combustion engine.

63.6595 When do I have to comply with this Subpart?

(a)(5) The engine must comply with the applicable emission limitations and operating limitations upon startup.

63.6600 Emission and operating limitations for RICE site rated at more than 500 hp

- (a) The engine is subject to the emission limits in table 1a and the operating limits in table 1b. ACME will meet the emission limitations by reducing formaldehyde emissions by 76 percent and will maintain the catalyst such that the pressure drop does not change by more than 2 inches of H₂O at 100 % load plus or minus 10 percent from the pressure drop measured during the initial performance test and will maintain the temperature of the engine exhaust so that the catalyst inlet temperature is greater than or equal to 750 ° F and less than or equal to 1250 ° F.

The engine will be equipped with non-selective catalytic reduction and an air fuel controller to meet the emission limitations.

63.6601 & 63.6611 Requirements for 4SLB engines between 250 and 200 hp

These requirements do not apply.

63.6605 General Requirements

- (a) The engine will comply with the emission and operating limitations at all times, except during periods of startup, shutdown and malfunction (SSM)
- (b) The engine, including air pollution control and monitoring equipment shall be operating in a manner consistent with good air pollution control practices for minimizing emissions at all times, including during SSM.

63.6610 Initial performance test

- (a) the performance tests specified in Table 4 (select sampling port and measure O₂, moisture and formaldehyde at inlet and outlet of the control device) shall be conducted within 180 days of startup.
- (b) & (c) not applicable construction did not commence between 12/19/02 and 6/15/04.
- (d) previous performance tests have not been conducted on this unit within two years, therefore, this provision does not apply.

63.6615 Subsequent performance tests

Subsequent tests will be conducted as specified in Table 3. No additional testing is required for 4SRB engines meeting the formaldehyde percent reduction requirements.

63.6620 Performance test procedures

- (b) tests must be conducted at 100 % load plus or minus 10%
- (c) tests may not be conducted during periods of SSM.
- (d) must conduct three 1-hr test runs
- (e) equation (e)(1) shall be used to determine compliance with the percent reduction requirement.
- (f), (g) & (h) Not applicable
- (i) engine load during test shall be determined as specified in this paragraph.

63.6625 Monitoring, installation, operation and maintenance requirements

- (a), (c) & (d) Not applicable
- (b) a continuous parameter monitoring system (CPMS) shall be installed to measure the catalyst inlet temperature. The CPMS will meet the requirements in § 63.8

63.6630 Demonstrating initial compliance

- (a) initial compliance shall be determined in accordance with table 5 (initial performance test must indicate formaldehyde reduction of 76 percent or more, a CPMS must be installed to measure inlet temperature of the catalyst and the pressure drop and catalyst inlet temperature must be recorded during the initial performance test).
- (b) pressure differential will be established during the initial performance test.
- (c) Notification of compliance status will be submitted and will contain the results of the initial compliance demonstration.

63.6635 Monitoring to demonstrate continuous compliance

- (b) except for monitor malfunctions, associated repairs, and required QA/QC activities monitoring must be continuous at all time the engine is operating.
- (c) data recorded during monitoring malfunctions, associated repairs and required QA/QC activities must not be used in data averages and calculations to report operating levels, however, all the valid data collected during other periods shall be used.

63.6640 Demonstrating continuous compliance

- (a) continuous compliance will be demonstrated as specified in table 6 (collect catalyst inlet temperature data, reduce that data to 4-hr rolling average and maintain the 4-hr rolling averages to within the operating limitation and measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop meets the operating limitation.
- (b) deviations from the emission and operating limitations must be reported per § 63.6550.
If catalyst is changed the operating parameters established during the initial performance test must be re-established.
When operating parameters re-established a performance test must also be conducted.

63.6645 Notifications

- (a) Submit notifications in §§ 63.7(b) & (c), 63.8(e), (f)(4) and (f)(6), 63.9(b) thru (e) & (g) & (h) that apply by dates specified.
- (b) Not applicable. Acme unit started after effective dated for Subpart ZZZZ.
- (c) Submit initial notification within 120 days after becoming subject to Subpart ZZZZ.
- (d) thru (f) Not applicable. Acme engine greater than 500 hp and subject to requirements in Subpart ZZZZ.

- (g) & (h) Submit notification of intent to conduct performance test and notification of compliance status.

63.6650 Reports

- (a) Submit reports required by table 7 (compliance report and SSM reports (if actions inconsistent with SSM plan)
- (b) Not applicable, an alternate schedule for report submittal has been approved. Reports will be submitted with title v reports
- (c) Compliance reports to contain the following information: company name and address, statement by responsible official certifying accuracy, date of report and beginning and end of reporting period, if SSM the information in 63.10(d)(5)(i), if no deviations a statement saying that, if no periods when CPMS out of control a statement saying that.
- (d) Not applicable, using CPMS
- (e) For each deviation the information in (e)(1) thru (e)(12) shall be provided.
- (f) Applicable. Compliance reports are submitted with title v reports. Compliance reports under Subpart ZZZZ include all necessary info for title v deviation report with respect to Subpart ZZZZ requirements.
- (g) Not applicable. Acme engine not firing landfill or digester gas.

63.6655 Recordkeeping

- (a) Retain records as follows: copy of each notification and report (including all documentation supporting any initial notification or notification of compliance status), records in 63.6(e)(iii) thru (v) related to SSM, and records of performance tests and evaluations.
- (b) CPMS records including records in 63.10(b)(2)(vi) thru (xi), previous versions of the performance evaluation plan required by 63.8(d)(3) and requests for alternatives to the relative accuracy test for CPMS as required by 63.8(f)(6)(i).
- (c) Not applicable. Acme engine not firing landfill or digester gas.
- (d) Will keep records required in Table 6 (monthly pressure drop readings, 4-hr averages of catalyst inlet temperature) to show continuous compliance with emission and operating limits.

63.6660 Form and length of records

- (a) records must be in a form suitable and readily available for expeditions review
- (b) records must be retained for five years
- (c) records must be retained on-site for first 2 years, may be retained off-site for the remaining 3 years

63.6665 General Provisions

This engine must comply with the general provisions as indicated in Table 8.

CONCLUSION OF FINDINGS (EXAMPLE ONLY)

Since this engine is subject to the requirements of MACT Subpart ZZZZ. The engine will be installed with a non-selective catalyst to meet the formaldehyde reduction requirement of 76% or more. An initial performance test will be conducted within 180 days of startup to demonstrate compliance with the formaldehyde percent reduction requirement. During the initial performance test, the pressure drop across the catalyst will be measured. A CPMS will be installed to measure the catalyst inlet temperature. Continuous compliance will be demonstrated by keeping the 4-hr rolling averages of catalyst inlet temperature within the operating limitations and recording the pressure drop across the catalyst monthly and demonstrating that the pressure drop is within the operating limitation.

Records, notifications and reports will be submitted as required. To that end required reports and notifications include initial notification, notice of intent to conduct performance test, notification of compliance status, SSM reports (if required) and semi-annual compliance reports.