



Report to the Board of Health To Approve For Expedited Process

Prepared by the Maricopa County Air Quality Department

Case #/Title: AQ-2015-004-Rule 324

Meeting Date: April 25, 2016

Supervisor Districts: All Districts

Applicant: Staff

Request: Approve for Expedited Process revisions to Rule 324 (Stationary Internal Combustion (IC) Engines)

Discussion:

Rule 324 limits the discharge of carbon monoxide, nitrogen oxides (NO_x), sulfur oxides, volatile organic compounds (VOCs), and particulate matter emissions from stationary internal combustion (IC) engines. Revisions to Rule 324 are being proposed to address the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). Rule 324 revisions will include Reasonably Available Control Technology (RACT) for NO_x.

Support/Opposition:

Stakeholders expressed a general understanding for the need for rule revisions based on the department’s nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered “RACT” and what is considered “beyond RACT”. In addition, questions were raised regarding the following:

- The correlation of Rule 324 with New Source Performance Standards (NSPS)
- The emission limitations for existing engines and new engines
- The compliance schedule for equipment being removed from service

For a detailed discussion of comments received during and after the Stakeholder Workshops, please refer to Section 5 in the attached Notice of Proposed Rulemaking.

Department Recommendation: Approve for Expedited Process

Per the Enhanced Regulatory Outreach Program Policy, Section IV(E), the Expedited Process may only be used if the following criteria have been met:

1. The proposed amendment has been subject to at least one Stakeholder Workshop (posted on the County’s web site at least two weeks in advance) and one Citizens’ Board or Commission meeting;
2. A draft of the regulatory change was available on the Enhanced Regulatory Outreach Program web site at least two weeks prior to the Citizens’ Board or Commission meeting and was forwarded to the Board/Commission at least one week in advance of their review meeting;
3. No comments of opposition to the amendment have been received from the public;
4. The Citizens’ Board or Commission reviewing the amendment recommends approval.

AQ-2015-004-Rule 324 has met the criteria for the Expedited Process:

1. Three Stakeholder Workshops were held: August 3, 2015, November 19, 2015, and January 27, 2016. Announcements of the workshops were posted on the County’s web site at least two weeks in advance;

2. A draft of the regulatory change was available on the Enhanced Regulatory Outreach Program web site at least two weeks prior to the Board of Health meeting;
3. No comments of opposition to the amendment have been received from the public;
4. The department is requesting the Board of Health approve for Expedited Process.

Regulatory Process:

This regulatory change will follow the Enhanced Regulatory Outreach Program Policy and workflow process. The County Manager briefed the Board of Supervisors (BOS) regarding this rulemaking in May 2015.

Three Stakeholder Workshops were held: August 3, 2015, November 19, 2015, and January 27, 2016. Comments from the workshops have been incorporated into this rulemaking.

If the Board of Health approves this regulatory change for the Expedited Process, then this regulatory change will proceed with a 30-day public comment period through May 2016 and an anticipated Board of Supervisors' public hearing in late 2016. This regulatory change will take immediate effect upon approval by the Board of Supervisors.

Presented By: Philip A. McNeely, R.G., Director

Prepared By: Hether Krause

Attachments: [Preamble required by A.R.S. § 49-471.05](#) (See Notice of Proposed Rulemaking)

[Summary of the proposed regulatory change](#) (See Item 5 of the Notice of Proposed Rulemaking)

[Language of the proposed regulatory changes](#) (See Item 14 of the Notice of Proposed Rulemaking)

[Copies of all written and electronic Stakeholder input](#)

[County Manager Case Approval](#)

DRAFT – FOR PURPOSES OF BOARD OF HEALTH MEETING ON APRIL 25, 2016

NOTICE OF PROPOSED RULEMAKING

MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS

REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 324: STATIONARY INTERNAL COMBUSTION (IC) ENGINES

PREAMBLE

- 1. Rule affected** **Rulemaking action**
Rule 324: Stationary Internal Combustion (IC) Engines Amend

- 2. Statutory authority for the rulemaking:**
Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480
Implementing Statute: A.R.S. § 49-112

- 3. List of all previous notices appearing in the Register addressing the rulemaking:**
Notice Of Briefing To Maricopa County Manager: May 2015
Notice Of Stakeholder Workshops: August 3, 2015, November 19, 2015, and January 27, 2016

- 4. Name and address of department personnel with whom persons may communicate regarding the rulemaking:**
Name: Johanna M. Kuspert or Hether Krause
 Maricopa County Air Quality Department
 Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
 Phoenix, Arizona 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

5. Explanation of the rule, including the department's reasons for initiating the rulemaking:

Summary:

[Return to list of Attachments](#)

Rule 324 (Stationary Internal Combustion (IC) Engines) limits the discharge of carbon monoxide, nitrogen oxides (NO_x), sulfur oxides, volatile organic compounds (VOCs), and particulate matter emissions from stationary internal combustion (IC) engines. Revisions to Rule 324 are being proposed to address the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). Rule 324 revisions will include Reasonably Available Control Technology (RACT) for NO_x.

In addition, the proposed amendments correct typographical or other clerical errors; make minor grammatical changes to improve readability or clarity; modify the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or make various other minor changes of a purely editorial nature. As these changes do not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the “underline/ strikeout” version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During This Rulemaking Process:

Stakeholders expressed a general understanding for the need for rule revisions based on the department’s nonattainment status; however, Stakeholders were concerned about the emission limitations and what is considered “RACT” and what is considered “beyond RACT”. In addition, questions were raised regarding the following:

- The correlation of Rule 324 with New Source Performance Standards (NSPS)
- The emission limitations for existing engines and new engines
- The compliance schedule for equipment being removed from service

Description of Proposed Amendments:

Regarding The Title Of The Rule: The title of the rule is proposed to be changed to “Stationary Reciprocating Internal Combustion Engines (RICE)” and the term “stationary internal combustion (IC) engine” is proposed to be changed to “stationary reciprocating internal combustion engine (RICE)” in the definitions and throughout the rule.

Regarding Applicability:

- Section 102 (Applicability): Rule 324 is proposed to continue to apply to spark-ignition engines or compression-ignition engines including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 250 and to also apply to a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250. Rule 324 is proposed to be revised to also apply to stationary RICE that are subject to federal standards of performance.

Regarding Exemptions:

- Section 103.2 (Exemptions): Rule 324 is proposed to clarify that nonroad internal combustion (IC) engines are not considered stationary RICE; to include nonroad internal combustion (IC) engines in new Section 103.2 and to add that a nonroad internal combustion (IC) engine must be operated and approved by the Control Officer as a nonroad internal combustion (IC) engine in order for such engine to be exempt from all of the requirements of Rule 324.
- Sections 104, 105, and 106 (Partial Exemptions): Rule 324 is proposed to add “as defined in this rule” after “emergency engine” to clarify that the provision that an emergency engine shall not exceed 500 hours of operation applies to the definition of “emergency engine” and applies to an emergency engine

subject to Section 104, to clarify which provisions in Rule 324 apply to low usage non-emergency engines, and to add a partial exemption for engines subject to 40 CFR Part 63, Subpart ZZZZ.

Regarding Definitions:

- The requirements in Rule 324 are proposed to be harmonized with New Source Performance Standards (NSPS) IIII, JJJJ, and Most Achievable Control Technology (MACT) ZZZZ. The definitions of “existing engine” and “new engine” are proposed to be deleted from Rule 324; the terms will not be used in the rule. Rule 324 is proposed to refer to the dates before and after which NSPS were promulgated. Rule 324 is proposed to apply to spark-ignition engines and compression-ignition engines with a rated brake horsepower of greater than 250 and to any stationary reciprocating internal combustion engine subject to the federal standards of performance set forth in 40 CFR 60, Subpart IIII for compression-ignition engines or 40 CFR 60, Subpart JJJJ for spark-ignition engine.
- The definition of “Identical Replacement Engine” is proposed to be made consistent with the definition of “Equivalent Replacement Engine” and the definition of “Internal Combustion (IC) Engine, Nonroad” is proposed to be clarified, so the text corresponds with the introductory text and corresponds with the definition of “Nonroad” in 40 CFR 1068.30; criteria that a nonroad IC engine must be approved by the Control Officer is proposed to be added to the definition.
- The term “Prime Engine” is proposed to be changed to “Non-Emergency Engine” and the definition of “Non-Emergency Engine” is proposed to be added, which is proposed to be the same definition as the definition of “Prime Engine”. The term “prime engine” is proposed to be changed to “non-emergency engine” throughout the rule.
- The definition of “Internal Combustion (IC) Engine, Nonroad” is proposed to be changed to “Nonroad Internal Combustion (IC) Engine”, since “nonroad” is the most important term.
- The definition of “Internal Combustion (IC) Engine, Stationary” is proposed to be changed to “Stationary Internal Combustion Engine (RICE)”, since “stationary” is the most important term.

Regarding Good Combustion Practices:

- Section 302 (Good Combustion Practices/Tuning Procedure For Stationary RICE): Rule 323 is proposed to include a provision that a handheld monitor may be used by the Control Officer to determine compliance.

Regarding Limitations For Non-Emergency Engines:

- Section 304 (Limitations For Non-Emergency Engines): Rule 324 is proposed to clarify the three options that non-emergency engines have for complying with Rule 324. A source can comply with either the provisions for add-on control equipment for non-emergency engines or emission limitations (the current emission limitations in Rule 324 or federal standards of performance for non-emergency engines). The current emission limits in Rule 324 are proposed to be retained; such limits apply to:
 - Engines manufactured prior to October 22, 2003 (the date when Rule 324 was adopted)
 - Engines manufactured on or after October 22, 2003 but prior to July 11, 2005 (the date the New Source Performance Standards were adopted for compression-ignition engines)

- Engines manufactured on or after October 22, 2003 but prior to June 12, 2006 (the date the New Source Performance Standards were adopted for spark-ignition engines)

Rule 324 is proposed to be revised to include a requirement that spark-ignition engines manufactured after June 12, 2006 and compression-ignition engines manufactured after July 11, 2005 comply with federal standards of performance.

- Section 306 (Equivalent Replacement Engine Or Identical Replacement Engine): Rule 324 is proposed to address if a modification is made to an equivalent replacement engine or an identical replacement engine and Section 401 (Compliance Schedule-Stationary RICE Being Removed From Service) is proposed to be revised to address if a RICE must be removed from service because such engine does not comply with the emission limits in Rule 324.
- Section 307 (Modification To A Stationary RICE): Rule 324 is proposed to add Section 307 to address if a modification is made to a stationary RICE.
- Section 401 (Compliance Schedule-Stationary RICE Being Removed From Service) is proposed to require that if a stationary RICE must be removed from service because such engine does not comply with the emission limits in Rule 324, then the stationary RICE that replaces such engine must comply with all applicable provisions of Rule 324, e.g., limitations for fuel, limitations for opacity, and with the federal standards of performance for non-emergency engines.
- Section 402 (Compliance Schedule-Non-Resetting Totalizing Hour Meter) is proposed to be added; a non-resetting totalizing hour meter must be installed, operated, and maintained on a stationary RICE.
- Section 501 (Compliance Determination) is proposed to be clarified regarding the compliance determination requirements for stationary RICE, an engine family, and engines with a displacement of greater than or equal to 30 liters per cylinder.
- Section 503 (Compliance Determination-Test Methods Incorporated By Reference) is proposed to be clarified to allow alternative test methods.

6. Demonstration of compliance with A.R.S. §49-112:

Under A.R.S. § 49-479(C), a county may not adopt a rule or ordinance that is more stringent than the rules adopted by the Director of the Arizona Department of Environmental Quality (ADEQ) for similar sources unless it demonstrates compliance with the applicable requirements of A.R.S. §49-112.

§ 49-112 County regulation; standards

§ 49-112(A)

When authorized by law, a county may adopt a rule, ordinance or other regulation that is more stringent than or in addition to a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if all of the following conditions are met:

1. The rule, ordinance or other regulation is necessary to address a peculiar local condition.

2. There is credible evidence that the rule, ordinance or other regulation is either;
 - (a) Necessary to prevent a significant threat to public health or the environment that results from a peculiar local condition and is technically and economically feasible.
 - (b) Required under a federal statute or regulation, or authorized pursuant to an intergovernmental agreement with the federal government to enforce federal statutes or regulations if the county rule, ordinance or other regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or other regulation will not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or other regulations in lieu of a state program that are as stringent as a provision of this title or rule adopted by the director or any board or commission authorized to adopt rules pursuant to this title if the county demonstrates that the cost of obtaining permits or other approvals from the county will approximately equal or be less than the fee or cost of obtaining similar permits or approvals under this title or any rule adopted pursuant to this title. If the state has not adopted a fee or tax for similar permits or approvals, the county may adopt a fee when authorized by law in the rule, ordinance or other regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. While currently classified as a “marginal” ozone nonattainment area, the county recently failed to meet 2008 8-hour ozone standard by the marginal area attainment date and anticipates EPA will issue a notice proposing to re-classify the area to “moderate”. Further, a portion of the county was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the county to continue to maintain the measures and requirements that allowed the county to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM₁₀ 24-hour standard. This is the only serious PM₁₀ nonattainment area in Arizona. Revisions to Rule 324 are being proposed to address the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The proposed amendments in Rule 324 include Reasonably Available Control Technology (RACT) for NO_x.

The department complies with A.R.S. § 49-112(B) in that the proposed amendments to Rule 324 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49, address the peculiar local conditions in Maricopa County, are authorized under A.R.S. Title 49, Chapter 3, Article 3, and are not in lieu of a state program.

7. Reference to any study relevant to the rule that the department reviewed and either proposes to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

Not applicable

8. Showing of good cause why the rule is necessary to promote a statewide interest if the rule will diminish a previous grant of authority of a political subdivision:

Not applicable

9. Preliminary summary of the economic, small business, and consumer impact:

A detailed preliminary summary of the economic, small business, and consumer impact will appear in the Notice of Proposed Rulemaking that is anticipated to be published in the Arizona Administrative Register on May 6, 2016.

There are about 600 sources in Maricopa County subject to this rule.

Permit fees are not changing due to this rulemaking.

10. Name and address of department personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact:

Name: Johanna M. Kuspert or Hether Krause
 Maricopa County Air Quality Department
 Planning and Analysis Division
Address: 1001 N Central Avenue, Suite 125
 Phoenix, AZ 85004
Telephone: (602) 506-6010
Fax: (602) 506-6179
E-mail: aqplanning@mail.maricopa.gov

11. Time, place, and nature of the proceedings for the rulemaking:

Written oral proceeding requests or written comments or both will be accepted until the record is closed on June 6, 2016, 5:00 p.m. Written oral proceeding requests or written comments or both may be mailed, e-mailed, or hand delivered to the department (see Item #4 of this notice). An oral proceeding will be scheduled only upon receipt of a written request before the record is closed on June 6, 2016, 5:00 p.m. Written comments received during the comment period and before the record is closed on June 6, 2016, 5:00 p.m. will be considered formal comments to the Notice of Proposed Rulemaking and will be responded to in the Notice of Final Rulemaking.

12. Any other matters prescribed by statute that are applicable to the specific department or to any specific rule or class of rules:

Not applicable

13. Incorporations by reference and their location in the rule:

The department incorporated by reference sections of the Code of Federal Regulations in Section 503
(Compliance Determination-Test Methods Incorporated By Reference)

14. Full text of the rule follows:

REGULATION III - CONTROL OF AIR CONTAMINANTS [Return to list of Attachments](#)

RULE 324

STATIONARY RECIPROCATING INTERNAL COMBUSTION ~~(IC)~~ ENGINES (RICE)

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Adopted 10/22/2003; Revised 10/17/2007; Revised MM/DD/YYYY

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 324

STATIONARY RECIPROCATING INTERNAL COMBUSTION ~~(IC)~~ ENGINES (RICE)

SECTION 100 – GENERAL

101 PURPOSE: To limit carbon monoxide (CO), nitrogen oxides (NO_x), sulfur oxides (SO_x), volatile organic compounds (VOCs), and particulate matter (PM) emissions from stationary reciprocating internal combustion ~~(IC)~~ engines (RICE).

102 APPLICABILITY: ~~The provisions of this rule apply to any single existing or new stationary spark or compression ignited reciprocating IC engine including stationary IC engines used in cogeneration, with a rating of greater than 250 brake horsepower (bhp). The provisions of this rule also apply to a combination of IC engines each with a rated brake horsepower greater than 50 bhp used at a single source, whose maximum aggregate rated brake horsepower is greater than 250 bhp.~~

102.1 This rule applies to a spark-ignition engine or compression-ignition engine including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 250. This rule also applies to a combination of stationary RICE each with a rated bhp greater than 50 used at a source, whose maximum aggregate rated bhp is greater than 250.

102.2 A stationary RICE subject to this rule that is also subject to the federal standards of performance set forth in 40 CFR Part 60, Subpart IIII for compression-ignition engines or 40 CFR Part 60, Subpart JJJJ for spark-ignition engines shall comply with the most stringent requirements. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

103 EXEMPTIONS: The following types of stationary IC engines are exempt from all of the requirements of this rule but shall comply with Rule 300:

~~103.1 Any rotary engine, including gas turbines, jet engines.~~

~~103.2 An IC engine operated as a nonroad engine.~~

~~103.3 A laboratory IC engine used directly and exclusively for engine research including engine development, and subsequent engine performance verification for the purpose of either engine emission control techniques or engine efficiency improvements.~~

~~103.4 A prime engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.~~

~~103.5 A compressed gas IC engine used for solar testing and research programs.~~

~~103.6 An IC engine operated as an emergency generator or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission.~~

~~103.7 An IC engine test stand used for evaluating engine performance; and~~

~~103.8 An IC engine used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.~~

103.1 The following types of stationary RICE are exempt from all of the requirements of this rule but shall comply with Rule 300 (Visible Emissions) of these rules:

a. A rotary engine, including gas turbines, jet engines.

b. A stationary RICE used directly and exclusively for engine research including engine development, and subsequent engine performance verification for the purpose of either engine emission control techniques or engine efficiency improvements.

c. A non-emergency engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility.

d. A compressed gas stationary RICE used for solar testing and research programs.

e. A stationary RICE operated as an emergency engine or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission.

f. A stationary RICE test stand used for evaluating engine performance.

g. A stationary RICE used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.

103.2 The following internal combustion (IC) engines are exempt from all of the requirements of this rule but shall comply with Rule 300 (Visible Emissions) of these rules:

a. An IC engine operated as a nonroad IC engine; or

b. A piece of equipment that is approved by the Control Officer as a nonroad IC engine.

104 PARTIAL EXEMPTIONS FOR EMERGENCY ENGINES: ~~Any~~ A stationary IC engine RICE operated as an emergency engine, as defined in this rule, for any of the following reasons is exempt from all of the provisions of this rule, except for the provisions in Sections 301, 303, and subsections 502.1 and 502.4: shall comply with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 of this rule when:

104.1 Used only for power when normal power service fails from the serving utility or if onsite electrical transmission or onsite power generation equipment fails.

104.2 Used only for the emergency pumping of water resulting from a flood, fire, lightning strikes, police action or for any other essential public services which affect the public health and safety.

104.3 Used for lighting airport runways.

- 104.4 Used for sewage overflow mitigation and/or prevention.
- 104.5 Used for reliability-related activities such as engine readiness, calibration, or maintenance or to prevent the occurrence of an unsafe condition during electrical system maintenance, as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine as evidenced by an installed non-resettable hour meter.
- 104.6 Used as the prime non-emergency engine when the prime non-emergency engine has failed, but only for such time as is needed to repair the prime non-emergency engine, ~~or~~
- 104.7 Used to operate standby emergency water pumps for fire control that activate when sensors detect low water pressure.

105 PARTIAL EXEMPTIONS FOR LOW USAGE NON-EMERGENCY, LOW USAGE PRIME ENGINES: The following low usage non-emergency engines, low usage prime engines are exempt from all of the provisions of this rule except for the provisions in Sections 301, 303, and subsections 502.1 and 502.4: shall comply with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4 of this rule for:

- 105.1 Each engine with a rated bhp at or below 1000 ~~bhp~~ that operates less than 200 hours in any 12-consecutive-calendar-month period as evidenced by an installed non-resettable hour meter.
- 105.2 Each engine with a rated bhp above 1000 ~~bhp~~ that operates less than 100 hours in any 12-consecutive-calendar-month period as evidenced by an installed non-resettable hour meter.

106 PARTIAL EXEMPTION FOR NON-EMERGENCY ENGINES SUBJECT TO 40 CFR PART 63, SUBPART ~~ZZZZ~~: A stationary RICE subject to the federal standards of performance set forth in 40 CFR Part 63, Subpart ~~ZZZZ~~ shall comply with the provisions in Sections 502.1, 502.2, and 502.3 of this rule.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County Air Pollution Control Rules, the definitions in this rule take precedence. See Rule 100 (General Provisions and Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule.

- 201 **AFTERCOOLER / INTERCOOLER:** A system that cools the engine intake air or air/fuel mixture after the air exits the turbocharger and prior to the introduction into the cylinder, thereby lowering NO_x emissions.
- 202 **COGENERATION UNIT:** ~~Internal combustion engine unit~~ A stationary RICE unit that burns fuel to simultaneously produce electricity and heat in a single thermodynamic process and is usually located in close proximity to the equipment requiring the heat energy.
- 203 **COMPRESSION-IGNITION ENGINE:** ~~A reciprocating internal combustion engine~~ A stationary RICE with operating characteristics wherein the principal mechanism of igniting the fuel and air mixture in the cylinders is the compression of air in the cylinder until it is so hot that any fuel injected into the air or mixed with the air ignites. In this type of engine, a separate ignition source, such as a spark plug, is not used.
- 204 **DIESEL ENGINE:** A type of ~~compression-ignited IC engine~~ compression-ignition engine.
- 205 **EMERGENCY ENGINE:** ~~Any stationary standby IC engine~~ A stationary RICE whose sole function is to provide back-up power when electric power from the local utility is interrupted or when operated solely for any of the reasons listed in Section 104 of this rule. An emergency engine, for the purposes of this rule, shall not be used to supply standby power due to a voluntary reduction in power by a utility or power company, supply power for distribution or sale to the grid, or supply power at a source in order to avoid peak demand charges or high electric energy prices during on-peak price periods and shall not exceed 500 hours of operation per calendar year including the 100 hours listed in ~~subsection~~ Section 104.5 of this rule.

- 206 **ENGINE FAMILY:** A group of ~~engines~~ stationary RICE with similar design features such as fuel type, cooling medium, method of air aspiration, combustion chamber design including cylinder bore and stroke, exhaust after treatment (if any), method of fuel admission, and method of control. These engines are also expected to have similar emission and operating characteristics throughout their useful lives.
- 207 **EQUIVALENT REPLACEMENT ENGINE:** ~~An engine~~ A stationary RICE that is substituted for a stationary ~~IC engine~~ RICE that is intended to perform the same or similar function as the original ~~engine~~ stationary RICE and where all of the following conditions exist:
- 207.1 The equivalent replacement engine results in equal or lower air contaminant emissions than the ~~existing engine~~ original stationary RICE; and
- 207.2 The equivalent replacement engine meets the emission control technology standards contained in ~~either Table 1 or Table 2~~ Section 304 of this rule; and
- 207.3 The rated bhp of the equivalent replacement engine does not exceed the rated bhp of the ~~existing engine~~ original stationary RICE (or sum of ~~existing engines~~ original stationary RICE) by more than 20 percent. For every percentage point increase of the rated ~~brake horsepower~~ bhp, there shall be an associated decrease in emissions of nitrogen oxides, expressed as a mass per unit time, equal to or exceeding two percentage points.
- 208 **EXISTING ENGINE:** ~~An engine that commenced operation prior to October 22, 2003 or an engine on which the construction or modification has commenced prior to October 22, 2003, including the contractual obligation to undertake and complete an order for an engine.~~
- 209 **208 IDENTICAL REPLACEMENT ENGINE:** ~~An engine that is substituted for an existing stationary IC engine that has the same manufacturer type, model number, manufacturer's maximum rated capacity (bhp), and that is intended to perform the same or similar function as the original stationary IC engine that it replaces and has equal or lower emissions or meets the emission control technology requirements in Section 304, Table 1, 2, or 3.~~ A stationary RICE that is substituted for a stationary RICE that is intended to perform the same or similar function as the original stationary RICE and where all of the following conditions exist:
- 208.1 The identical replacement engine results in equal or lower air contaminant emissions than the original stationary RICE; and
- 208.2 The identical replacement engine meets the emission control technology standards contained in Section 304 of this rule; and
- 208.3 The identical replacement engine has the same manufacturer type, model number, and manufacturer's rated bhp as the original stationary RICE.
- 210 **INTERNAL COMBUSTION (IC) ENGINE, NONROAD:**
- 210.1 ~~An IC engine:~~
- a. ~~In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or~~
- b. ~~In or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or~~
- c. ~~That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include but are not limited to, wheels, skids, carrying handles, dollies, trailers, or platforms.~~
- 210.2 ~~An internal combustion engine is not a nonroad engine if:~~
- a. ~~The engine used to propel a motor vehicle, an aircraft, or a vehicle equipment used solely for competition, or is subject to standards promulgated under Section 202 of the Clean Air Act; or~~

- b. ~~The engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act; or~~
- e. ~~The engine otherwise included in paragraph (c) above of this definition remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replace(s) an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e. at least two years) and that operates at that single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.~~

211 ~~INTERNAL COMBUSTION (IC) ENGINE, STATIONARY : Any reciprocating, piston-driven IC engine that is operated or intended to be operated at one specific location for more than 12 consecutive months or that is attached to a foundation at the location. Any engine that replaces an engine at a location and is intended to perform the same or similar function as the engine being replaced will be included in calculating the consecutive time period. A stationary IC engine is not a nonroad engine.~~

212 **209** ~~LEAN-BURN ENGINE: A spark ignited engine~~ A spark-ignition engine with an air-to-fuel operating range that has more air present than is needed to burn the fuel present and cannot be adjusted to operate with an exhaust oxygen concentration of less than or equal to 2%.

213 **210** **LOCATION:** Any single site at a building, structure, facility or installation.

214 ~~LOW SULFUR OIL: Fuel oil containing less than or equal to 0.05 % sulfur by weight.~~

215 ~~NEW ENGINE: An engine that is not an existing engine.~~

211 **NON-EMERGENCY ENGINE:** A stationary RICE that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power.

212 **NONROAD INTERNAL COMBUSTION (IC) ENGINE:**

212.1 The following are nonroad IC engines:

- a. An internal combustion engine that is (or will be) used in or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers); or
- b. An internal combustion engine that is (or will be) used in or on a piece of equipment that is intended to be propelled while performing its function (such as lawnmowers and string trimmers); or
- c. An internal combustion engine that by itself or in or on a piece of equipment is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include but are not limited to, wheels, skids, carrying handles, dollies, trailers, or platforms; or
- d. A piece of equipment that is approved by the Control Officer as a nonroad IC engine.

212.2 The following are not nonroad IC engines:

- a. An engine used to propel a motor vehicle, an aircraft, or a equipment used solely for competition; or
- b. An engine regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act; or

- c. An engine otherwise included in Section 212.1(c) of this rule that remains or will remain at a location for more than 12 consecutive months or a shorter period of time for an engine located at a seasonal source. A location is any single site at a building, structure, facility, or installation. Any engine (or engines) that replace(s) an engine at a location and that is intended to perform the same or similar function as the engine replaced will be included in calculating the consecutive time period. An engine located at a seasonal source is an engine that remains at a seasonal source during the full annual operating period of the seasonal source. A seasonal source is a stationary source that remains in a single location on a permanent basis (i.e. at least two years) and that operates at that single location approximately three months (or more) each year. This paragraph does not apply to an engine after the engine is removed from the location.

- 246 **213** **PART(S) PER MILLION, DRY VOLUME (PPMDV):** A unit of proportion equal to 10^{-6} that is measured on a dry basis (minus water) at 15% oxygen.
- 247 ~~PRIME ENGINE: A principal or main use engine that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power, as opposed to an emergency engine.~~
- 248 **214** **RATED BRAKE HORSEPOWER (RATED BHP):** The maximum brake horsepower (bhp) specified by the engine manufacturer for the engine application, usually listed on the nameplate of the engine. If the engine has been altered so that the maximum brake horsepower is different than the rated brake horsepower on the nameplate, then the maximum brake horsepower shall be considered the rated brake horsepower.
- 249 **215** **RICH-BURN ENGINE:** ~~Any spark ignited IC engine~~ A spark-ignition engine that is not a lean-burn engine.
- 220 **216** **SPARK-IGNITION ENGINE:** ~~An IC engine~~ A stationary RICE wherein the fuel is usually mixed with intake air before introduction into the combustion chamber resulting in a relatively homogeneous air/fuel mixture in the combustion chamber, at which time a spark plug, or other device, then ignites the air/fuel mixture.
- 217** **STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINE (RICE):** A reciprocating, piston-driven internal combustion engine that is operated or intended to be operated at one specific location for more than 12 consecutive months or that is attached to a foundation at the location. An engine that replaces an engine at a location and is intended to perform the same or similar function as the engine being replaced will be included in calculating the consecutive time period. A stationary RICE is not a nonroad engine.
- 224 **218** **SULFUR OXIDES (SO_x):** Oxides of sulfur calculated as equivalent sulfur dioxide.
- 219** **ULTRA LOW SULFUR DIESEL:** Fuel oil containing less than or equal to 0.0015 % sulfur by weight.
- 222 **220** **WASTE DERIVED FUEL GAS:** ~~Any~~ A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, ~~sewage sludge,~~ digester gas, and landfill gas.

SECTION 300 – STANDARDS:

- 301** ~~LIMITATIONS FOR NEW AND EXISTING STATIONARY IC ENGINES~~ **STATIONARY RICE - FUEL:** An owner or operator of ~~any~~ an engine that meets the criteria listed in Section 102 of this rule shall comply with either of the following:
- 301.1** Use any fuel that contains no more than ~~0.05%~~ 0.0015% sulfur by weight, alone or in combination with other fuels.
- 301.2** Use any waste derived fuel gas that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.

302 GOOD COMBUSTION PRACTICES / TUNING PROCEDURE FOR STATIONARY RICE: An owner or operator of an engine that meets the criteria listed in Section 102 of this rule shall conduct preventative maintenance or tuning procedures (preventative maintenance) as recommended by the engine manufacturer to ensure good combustion practices to minimize NO_x emissions. A handheld monitor may be used if so desired by the owner or operator for measurement of NO_x and CO and concentrations in the effluent stream after each adjustment is made. This ; this may assist in determining that the proper adjustment has been made to ensure NO_x and CO minimization minimize NO_x and CO emissions. A handheld monitor may be used by the Control Officer to determine compliance with this section. In lieu of a manufacturer's procedure, a different procedure specified by any other maintenance guideline may be used as a default procedure. The owner or operator shall include all of the following in the tuning procedures ~~procedure shall include all of the following, if the engine is so equipped, and if such procedures are appropriate to the type of engine:~~

- 302.1** Lubricating Oil and Filter: Change once every three months or after no more than 300 hours of operation, whichever occurs last.
- 302.2** Inlet Air Filter: Clean once every three months or after no more than 300 hours of operation and replace every 1,000 hours of operation or every year, whichever occurs last.
- 302.3** Fuel Filter: Clean once every year or replace (if cartridge type) once every 1,000 hours of operation, whichever occurs last.
- 302.4** Check and adjust the following once every year or after no more than 1,000 hours of operation, whichever occurs last:
 - a. Intake and exhaust valves
 - b. Spark plugs (if so equipped)
 - c. Spark timing and dwell or fuel injection timing (if adjustable), and
 - d. Carburetor mixture (if adjustable).
- 302.5** Spark Plugs and Ignition Points: Replace after 3,000 hours of operation or every year whichever occurs last
- 302.6** Coolant: Change after 3,000 hours of operation or every year whichever occurs last.
- 302.7** Exhaust System: Check for leaks and/or restrictions after 3,000 hours of operation or every year whichever occurs last.

303 LIMITATIONS FOR STATIONARY RICE – OPACITY: ~~No~~ An owner or operator of an engine that meets the criteria in Section 102 of this rule shall not discharge into the ambient air from any single source of emissions such engine any air contaminant, other than uncombined water, in excess of 20% opacity.

304 ADDITIONAL LIMITATIONS FOR PRIME NON-EMERGENCY ENGINES ≥ 250 RATED BHP: ~~In addition to meeting the standards in Sections 301, 302, and 303, each existing or new prime engine greater than 250 rated bhp that is not listed in Sections 103, 104, or 105, shall comply with the emission limits or control technology requirements listed in Section 304, Table 1, 2, or 3, dependent upon the type of engine.~~ In addition to meeting the standards in Sections 301, 302 and 303 of this rule, an owner or operator of a non-emergency engine that meets the criteria in Section 102 of this rule shall comply with Sections 304.1, 304.2, or 304.3 of this rule.

304.1 Add-On Control Equipment For Non-Emergency Engines: The uncontrolled NO_x emissions from the non-emergency engines shall be reduced with add-on control equipment in compliance with Table 1 of this rule.

TABLE 1

	<u>Weight Percent Engine Category Reduction</u>
<u>Rich-burn engines using fossil derived gaseous fuel or gasoline (spark-ignition engines)</u>	<u>90</u>

Lean-burn engines using fossil derived gaseous fuel (spark-ignition engines)	90
Engines using diesel or kerosene fuel (compression-ignition engines)	90

304.2 Engine Requirements For Non-Emergency Engines: The emissions in parts per million by dry volume (ppmdv) or grams per bhp (g/bhp) from the non-emergency engines shall comply with either Table 2 or Table 3 of this rule.

TABLE 2
COMPRESSION-IGNITION ENGINES

APPLICABILITY	RATED BHP	ENGINE REQUIREMENTS
Engines manufactured prior to October 22, 2003	250-399	770 ppmdv or 10 g/bhp-hr.NOx or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
Engines manufactured prior to October 22, 2003	400 plus	550 ppmdv or 7.2 g/bhp-hr.NOx or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
Engines manufactured on or after October 22, 2003 but prior to July 11, 2005	>250	530 ppmdv or 6.9 g/bhp-hr.NOx or turbocharger with aftercooler/intercooler or 4-degree injection timing retard; 1,000 ppmdv CO; 0.40 g/bhp-hr PM*

* A backhalf analysis shall be performed using reference Method 202 (referenced in Section 503.6 of this rule) each time a compliance test for particulate matter emissions to meet the limitations listed in Table 2 of this rule is performed using Method 5. The results of the Method 202 testing shall be used for emissions inventory purposes.

TABLE 3
SPARK-IGNITION ENGINES

LEAN-BURN ENGINES

APPLICABILITY	RATED BHP	OXIDES OF NITROGEN (NO_x)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
Engines manufactured prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv
Engines manufactured on or after October 22, 2003 but prior to June 12, 2006	>250	110 ppmdv or 1.5 g/bhp-hr	800 ppmdv or 5.0 g/bhp-hr	4,500 ppmdv

RICH-BURN ENGINES

APPLICABILITY	RATED BHP	OXIDES OF NITROGEN (NO_x)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
Engines manufactured prior to October 22, 2003	>250	280 ppmdv or 4.0 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*
Engines manufactured on or after October 22, 2003 but prior to June 12, 2006	>250	20 ppmdv or 0.30 g/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*

- * The three-way catalyst shall provide a minimum of 80% control efficiency for NO_x and CO for those engines fueled with natural gas, propane or gasoline. In addition, the three-way catalyst shall also provide a minimum of at least 50% control efficiency for VOC for those engines fueled by gasoline.

NO_x EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING COMPRESSION-IGNITION ENGINES > 250 bhp

TABLE 1

RATED BRAKE HORSEPOWER (bhp)	ENGINE REQUIREMENTS
250-399	770 ppm _{dv} or 10 g/bhp-hr. NO _x or turbocharger with aftercooler/intercooler or 4 degree injection timing retard
400-plus	550 ppm _{dv} or 7.2 g/bhp-hr. NO _x or turbocharger with aftercooler/intercooler or 4 degree injection timing retard

EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING APPLICABLE SPARK IGNITION ENGINES > 250 RATED BHP

TABLE 2

OXIDES OF NITROGEN (NO _x)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
280 ppm _{dv} or 4.0 b/bhp-hr or three-way catalyst*	800 ppm _{dv} or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppm _{dv} or three-way catalyst*

EMISSION LIMITS FOR NEW SPARK OR COMPRESSION IGNITION ENGINES > 250 BHP

TABLE 3

ENGINE TYPE	NO _x	PM*	CO
LEAN BURN (SPARK)	110 ppm _{dv} or 1.5 g/bhp-hr.	Not Applicable	4,500 ppm _{dv}
RICH BURN (SPARK)	20 ppm _{dv} or 0.30 g/bhp-hr.	Not Applicable	4,500 ppm _{dv}
COMPRESSION	530 ppm _{dv} or 6.9 g/bhp-hr.	0.40 g/bhp-hr	1,000 ppm _{dv}

* A backhalf analysis shall be performed using reference Method 202 (referenced in subsection 504.6) each time a compliance test for particulate matter emissions to meet the limitations listed in Table 3 is performed using Method 5. The results of the Method 202 testing shall be used for emissions inventory purposes.

304.3 Federal Standards Of Performance For Non-Emergency Engines: An owner or operator of a spark-ignition engine manufactured after June 12, 2006 or a compression-ignition engine manufactured after July 11, 2005 shall comply with the federal standards of performance for spark-ignition engines set forth in 40 CFR Part 60, Subpart JJJJ or compression-ignition engines set forth in 40 CFR Part 60, Subpart IIII, and all accompanying appendices as incorporated by reference in Rule 360 (New Source Performance Standards) of these rules. Whenever more than one provision in this rule applies to such engine or whenever a provision in this rule and a provision in the federal standards apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

- 305 EFFICIENCY ALLOWANCE:** Each emission limit expressed in Tables 1, 2 or 3 2 or 3 of this rule may be multiplied by X, where X equals the engine efficiency (E) divided by a reference efficiency of 30 percent. Engine efficiency shall be determined by one of the following methods whichever is higher:
- E = (Engine Output) X (100) ÷ (Energy Input) where energy input is determined by a fuel measuring device accurate to +/- 5 % and is based upon the higher heating value (HHV) of the fuel. Percent efficiency (E) shall be averaged over 15 consecutive minutes and measured at peak load for the applicable engine.
 - E = (Manufacturers Rated Efficiency [Continuous] at (LHV) X (LHV) ÷ (HHV) where LHV = the lower heating value of the fuel Engine efficiency (E) shall not be less than 30 percent; an engine

with an efficiency lower than 30 percent shall be assigned an efficiency of 30 percent for the purposes of this rule.

306 **EQUIVALENT REPLACEMENT ENGINE OR IDENTICAL REPLACEMENT ENGINE REPLACEMENT:** ~~An equivalent or identical replacement engine that replaces an existing engine shall be treated as an existing engine for the purposes of compliance with this rule, unless the engine commenced operation or was constructed or modified after October 22, 2003, including the contractual obligation to undertake and complete an order for an engine, and then it will be considered a new engine for purposes of meeting the standards for a new engine in this rule.~~

306.1 An equivalent replacement engine or an identical replacement engine shall be treated as the original stationary RICE that it replaces for the purposes of compliance with this rule.

306.2 If a modification, including the contractual obligation to undertake and complete an order for an engine, is made to an equivalent replacement engine or an identical replacement engine, then such engine shall comply with all applicable provisions of this rule and shall comply with Section 304 of this rule. Whenever more than one provision in this rule applies to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

307 **MODIFICATION TO A STATIONARY RICE:**

307.1 If a modification, including the contractual obligation to undertake and complete an order for an engine, is made to a stationary RICE, then such engine shall comply with all applicable provisions of this rule and shall comply with Section 304 of this rule. Whenever a provision in this rule and a provision in Section 304 of this rule apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply, unless otherwise specifically exempted or designated.

307.2 If a modification to a stationary RICE is subject to Section 306.2 of this rule, then such modification shall meet the requirements in Section 306.2 of this rule.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 **COMPLIANCE SCHEDULE-STATIONARY RICE BEING REMOVED FROM SERVICE:** ~~An owner or operator of an existing a stationary IC engine that must be replaced with a new engine to meet emission limits listed in Section 300 shall be in compliance with the emission limits listed in Section 304, Table 3 by October 22, 2007. If a stationary RICE must be removed from service because such engine does not comply with the emission limits listed in Section 300 of this rule, then the stationary RICE shall be removed from service no later than 12 months after [Date of Adoption]. The stationary RICE that replaces such engine shall comply with all applicable provisions of this rule and shall comply with Section 304 of this rule upon installation.~~

402 **COMPLIANCE SCHEDULE-NON-RESETTING TOTALIZING HOUR METER:** The owner or operator of a stationary RICE, subject to any provision of this rule, except for those engines being removed from service under Section 401 of this rule, shall install, operate, and maintain a non-resetting totalizing hour meter on each such engine no later than 12 months after [Date of Adoption].

SECTION 500 - MONITORING AND RECORDS

501 **COMPLIANCE DETERMINATION:**

501.1 ~~Existing Engines: Existing IC engines or engine families shall demonstrate compliance with Section 300 by recordkeeping according to Section 502. Emission testing using the applicable test methods listed in Section 500 shall be performed if the Control Officer requests.~~

501.2 ~~Existing Engine Families at a Source: When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the~~

~~group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.~~

501.3 ~~New Engines / New Engine Families: Compliance with the limitations listed in Section 304, Table 3 shall be demonstrated by either:~~

- ~~a. A statement from the manufacturer that the engine meets the most stringent emissions standards found in 40 CFR Part 89 or 90 applicable to the engine and its model year at the time of manufacture, or~~
- ~~b. Performance of emission testing using the test methods listed in Section 503.~~

501.1 **Stationary RICE:** An owner or operator of a stationary RICE shall demonstrate compliance with all of the following, as applicable:

- a.** With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.
- b.** With Section 304.3 of this rule, by one of the following:
 - (1)** A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89, 90, and 1039 applicable to the engine and its model year at the time of manufacture.
 - (2)** Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.
- c.** With 40 CFR Part 60.4213, for a stationary RICE with a displacement of greater than or equal to 30 liters per cylinder.

501.2 **Engine Family:** An owner or operator of an engine family shall demonstrate compliance with all of the following, as applicable:

- a.** With Section 300 of this rule, by recordkeeping according to Section 502 of this rule. Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.
- b.** When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.
- c.** With Section 304.3 of this rule, by one of the following:
 - (1)** A statement from the manufacturer that the engine meets the most stringent emissions standards found in this rule or 40 CFR Parts 89, 90, and 1039 applicable to the engine and its model year at the time of manufacture.
 - (2)** Emission testing using the applicable test methods listed in Section 503 of this rule shall be performed upon the request of the Control Officer.
- d.** With 40 CFR Part 60.4213, for an engine family with a displacement of greater than or equal to 30 liters per cylinder.

501.4 **501.3** ~~Low-Sulfur Oil~~ **Ultra Low Sulfur Diesel Verification:** If the Control Officer requests proof of the sulfur content, the owner or operator shall submit fuel receipts, contract specifications, pipeline meter tickets, ~~Material~~ Safety Data Sheets (MSDS SDS), fuel supplier information or purchase records, if applicable, from the fuel supplier, indicating the sulfur content of the fuel oil. In lieu of these, testing of the fuel oil for sulfur content to meet the ~~0.05%~~ 0.0015% limit shall be permitted ~~if so desired by the owner or operator~~ for evidence of compliance.

501.5 **501.4** **Waste Derived Fuel Gas - Sulfur Verification:** The owner or operator shall submit documentation of the concentration of the sulfur level of the waste derived fuel gas to the Control Officer upon request.

501.5 Test Method Conditions: The owner or operator shall use the test methods listed in Section 503 of this rule to determine compliance with the limitations listed in ~~Section 304, Tables 1-3 2 or 3 of~~ this rule. Testing for ~~stationary IC engines~~ stationary RICE shall be completed under steady state conditions at either the maximum operating load or no less than 80% of the rated ~~brake horsepower rating bhp~~. If the owner or operator of an engine demonstrates to the Control Officer that the engine cannot operate at these conditions, then emissions source testing shall be performed at the highest achievable continuous ~~brake horsepower rating~~ rated bhp or under the typical duty cycle or typical operational mode of the engine.

502 RECORDKEEPING / RECORDS RETENTION: The owner or operator of ~~any stationary IC engine a~~ stationary RICE subject to this rule shall comply with the following requirements and ~~keep~~ retain records for a ~~period of at least~~ 5 years:

502.1 Records Required For A Stationary RICE: An owner or operator of ~~any IC engine a~~ stationary RICE, including emergency engines, ~~prime engines~~ non-emergency engines and ~~low usage engines~~ low usage non-emergency engines, shall keep a record that includes an initial one time entry that lists the particular engine combustion type (compression-ignition or spark-ignition or rich burn, ~~or~~ lean burn); manufacturer; model designation, rated ~~brake horsepower bhp~~, serial number and where the engine is located on the site.

502.2 Monthly Records Required For Non-Emergency Engines: An owner or operator of a ~~prime engine~~ non-emergency engine shall maintain a monthly record for ~~prime engines~~ non-emergency engines which shall include:

- a. Hours of operation; and
- b. Type of fuel used, and
- c. Documentation verifying compliance with sulfur fuel content according to ~~subsection~~ Section 301.1 of this rule.

502.3 Annual Records Required For Non-Emergency Engines: An owner or operator of a ~~prime engine~~ non-emergency engine shall maintain an annual record of ~~good combustion procedures according to Section 302. the practices/procedure that are followed in order to comply with Section 302 (Good Combustion Practices/Tuning Procedure For Stationary RICE)~~ of this rule.

502.4 Records Required For An Emergency Engine Or A Low Usage Non-Emergency Engine: An owner or operator of an emergency engine and or a low usage non-emergency, ~~low usage~~ engine that meets the exemptions listed in Sections 104 and 105 of this rule shall keep an engine record that includes:

- a. Monthly rolling twelve month total of hours of operation, including hours of operation for testing, reliability and maintenance; and
- b. Fuel type and sulfur content of fuel; and
- c. Explanation for the use of the engine if it is used as an emergency engine.

503 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE: The following test methods, as applicable, shall be used to determine compliance with this rule. Alternative test methods may be utilized upon written approval from the Control Officer. The Environmental Protection Agency (EPA) test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2004) and the American Society of Testing Materials International Methods as listed below, are incorporated by reference in Appendix G of the ~~Maricopa County Rules and Regulations~~ Maricopa County Air Pollution Control Regulations. ~~The~~ When more than one test method is permitted for the same determination, as listed in subsections 503.12, 503.13, 503.14, or 503.15, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation. When more than one test method, as listed in Sections 503.12, 503.13, 503.14, or 503.15 of this rule, is permitted for a determination, an exceedance of the limits established in this rule determined by any of the applicable test methods shall constitute a violation of this rule. Copies of test methods referenced in this section of this rule are available at the Maricopa County

~~Environmental Services Department~~ Air Quality Department, 1001 North Central Avenue, Suite ~~201~~ 125, Phoenix, Arizona, 85004-1942.

- 503.1** EPA Reference Methods 1 (“Sample and Velocity Traverses for Stationary Sources”) and 1A (“Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts”) (40 CFR 60, Appendix A).
- 503.2** EPA Reference Methods 2 (“Determination of Stack Gas Velocity and Volumetric Flow Rate”), 2A (“Direct Measurement of Gas Volume Through Pipes and Small Ducts”), 2C (“Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts”), and 2D (“Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts”) (40 CFR 60, Appendix A).
- 503.3** EPA Reference Methods 3 (“Gas Analysis for the Determination of Dry Molecular Weight”), 3A (“Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)”), 3B (“Gas Analysis for the Determination of Emission Rate Correction Factor of Excess Air”), and 3C (“Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources”) (40 CFR 60, Appendix A).
- 503.4** EPA Reference Method 4 (“Determination of Moisture Content in Stack Gases”) (40 CFR 60, Appendix A).
- 503.5** EPA Reference Method 5 (“Determination of Particulate Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 503.6** EPA Reference Method 202 (“Determination of Condensable Particulate Emissions from Stationary Sources”) (40 CFR 51, Appendix M).
- 503.7** EPA Reference Methods 7 (“Determination of Nitrogen Oxide Emissions from Stationary Sources”), 7A (“Determination of Nitrogen Oxide Emissions from Stationary Sources - Ion chromatographic method”), 7B (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrometry”), 7C (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate Colorimetric Method”), 7D (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline – Permanganate Chromatographic Method”), and 7E (“Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Method”), (40 CFR 60, Appendix A).
- 503.8** EPA Reference Method 9 (“Visual Determination of the Opacity of Emissions from Stationary Sources”) (40 CFR 60, Appendix A).
- 503.9** EPA Reference Method 10 (“Determination of Carbon Monoxide from Stationary Sources”) (40 CFR 60, Appendix A).
- 503.10** EPA Reference Method 18 (“Measurement of Gaseous Organic Compound Emissions by Gas Chromatography”) (40 CFR 60, Appendix A).
- 503.11** EPA Reference Method 25A (“Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer”) (40 CFR 60, Appendix A).
- 503.12** ~~American Society of Testing Materials International, ASTM Method D1266-98 (1998) (“Standard Test Method for Sulfur in Petroleum Products (Lamp Method)”)~~, 1998. “Standard Test Method for Sulfur in Petroleum Products (Lamp Method)”.
- 503.13** ~~American Society of Testing Materials International, ASTM Method D2622-98 (1998) (“Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry”)~~, 1998. “Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry”.
- 503.14** ~~American Society of Testing Materials International, ASTM Method D2880-71, 78 or 96 (1971, 1978, or 1996) (“Standard Specification for Gas Turbine Fuel Oils”)~~, 1971 or 1978 or 1996. “Standard Specification for Gas Turbine Fuel Oils”.

- 503.15 ~~American Society of Testing Materials International, ASTM Method D4294-98 (1998) (“Standard Test Method for Sulfur in Petroleum Products by Energy Dispersive X-Ray Fluorescence Spectroscopy”)~~ 1990 or 1998. “Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluorescence Spectroscopy”.
- 503.16 ~~American Society of Testing Materials International, ASTM Method D5504-01 (2006) (“Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence”)~~, 2006. “Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence”.

[Return to list of Attachments](#)

COPIES OF ALL WRITTEN AND ELECTRONIC STAKEHOLDER INPUT



Maricopa County

AIR QUALITY DEPARTMENT

COMMENT SHEET

NAME: Beth Zima DATE: 8/3/15
BUSINESS NAME: City of Phoenix
CONTACT PHONE OR ADDRESS: 602-256-3447
E-MAIL ADDRESS: elizabeth.zima@phoenix.gov

I support the proposed changes
I oppose the proposed changes Below are some suggestions to consider.

COMMENT:

For testing in lieu of annual oil changes by a
certified lab, can you please clarify what certification
is needed by the lab / testing methods.

For office use only
Case # _____

For further information, please visit:
<http://www.maricopa.gov/regulations/>
To submit comments, please visit:
26 <http://www.maricopa.gov/regulations/comments.aspx>

**Stakeholder Workshop
AQ-2015-004 - Rule 324
Stationary Internal Combustion (IC)
Engines**

August 3, 2015

Preliminary Comments of the
Truck and Engine Manufacturers Association
Joseph L. Suchecki
Director Public Affairs

Truck and Engine Manufacturers Association (EMA)

- Trade Association representing the major manufacturers of heavy-duty trucks and engines used to power mobile and stationary sources.
- Represent engine industry on emissions issues with U. S. EPA, California Air Resources Board, and other state and local legislative and regulatory bodies.
- Worked closely with EPA on development of the NSPS and NESHAP regulations governing stationary engines.
- EMA members include all major suppliers of compression-ignition and spark-ignition engines used in stationary applications.

Truck and Engine Manufacturers Association (EMA)

- EMA and its members can provide technical and regulatory expertise on the proposed rule.
- Goal is to assure a final rule that is technically feasible and cost-effective that also meets the Department's air quality reduction needs.

EMA Recommendations for State and Local Stationary Engine Rules

- Regulatory agencies should:
 - Harmonize emission standards and practices with US EPA NSPS requirements
 - Consider certified NSPS engines as BACT and LAER
 - Minimize and streamline permitting requirements for sources using NSPS-certified engines
 - Eliminate requirements for any additional source testing for NSPS-certified engines and accept engine manufacturer's certified emissions test results and owner-operator maintenance records as a demonstration of compliance
 - Take full advantage of the NSPS engine certification requirements to minimize burdens on owner-operators

Advantages of NSPS Alignment

- NSPS compliant engines incorporate advanced technologies to reduce emissions and are readily available from engine manufacturers.
- NSPS compliant engines are U. S. EPA certified by the engine manufacturer to meet emission standards for the useful life of the engine.
- Certified engines negate the need for on-site emissions tests and minimize costs to the Department and owners/operators.
- NSPS alignment simplifies the regulation and avoids conflicting or confusing emissions requirements.
- Department acceptance of NSPS certified engines can minimize and streamline permitting requirements.
- Alignment minimizes regulatory burden and costs on owner/operators

EMA Preliminary Comments on Proposed Revisions to Rule 324

- For new compression-ignition engines, the Department should fully align the NO_x, CO, VOC and PM emission standards with NSPS requirements(40 CFR 60 Subpart IIII)
- For new spark-ignition engines, the Department should fully align the NO_x, VOC, and CO emission standards with NSPS requirements(40 CFR 60 Subpart JJJJ).
- The Department should accept manufacturer's NSPS emission certification data as demonstration of compliance for the useful life of the engine and not require additional emissions testing.
- Emissions standards for new lean-burn and rich-burn spark-ignition engines should be the same.

EMA Specific Comments on Proposed Revisions to Rule 324

- Section 102 Applicability- The rule should apply to all sizes of new engines to align with the requirements of the NSPS (40 CFR 60.4230 and 40 CFR 60.4200)
- Section 104 Emergency Engine Exemption – The rule should include requirements for emergency engines that are aligned with the requirements of the NSPS (40 CFR 60.4205).
- Section 208 – the definitions of existing and new engines should be revised to align with the NSPS (40 CFR 60.4200 for compression ignition engines and 40 CFR 60.4230 for spark-ignition engines). If the Department does not align emission standards for new engines with the NSPS, then the definition of new engine should be changed to cover those engines installed after the effective date of the final regulation.

EMA Specific Comments on Proposed Revisions to Rule 324

- Section 301 - The fuel sulfur standards should only apply to compression-ignition engines and should align with the NSPS requirements that all stationary compression-ignition engines must use ultra-low sulfur(15 ppm) fuel (40 CFR 60.4207).
- Section 304 – The emissions limits applicable to specific categories of engines, as well as any required percent reductions, should align with the requirements of the NSPS 40CFR 60.4233 (Table 1).
- Section 305 – EMA supports the concept of an efficiency allowance as a way to incentive the introduction of higher efficiency engines. However, the efficiency allowance only can only be used for emission standards that are below NSPS-required levels.

EMA Specific Comments on Proposed Revisions to Rule 324

- Section 501 - EMA fully supports the Department's proposal to allow owners and operators of new engines to demonstrate compliance by using documentation from the engine manufacturer. However, EMA recommends that the Department cite the EPA NSPS regulations (40 CFR 60 Subpart IIII and 40 CFR Subpart JJJJ) rather than citing the nonroad mobile engine regulations (40 CFR Part 89,90, and 1039).
- Section 503 – The regulation should not cite a specific date when referencing EPA Test Methods but should refer to the most recent applicable test methods. In addition, EMA recommends that 40 CFR Part 1065 test methods be used whenever possible.

Summary

- EMA looks forward to working with the Department to finalize a rule that is fully harmonized with the applicable NSPS.
- EMA is willing to provide any assistance necessary to achieve that end, which will help to ensure the adoption of cost-effective and feasible rule.

- EMA Contacts:

Joe Suchecki

312-929-1978

jsuchecki@emamail.org

Tim French

312-929-1954

tfrench@emamail.org

From: Geoffrey Sylvester - AQDX
Sent: Wednesday, August 05, 2015 9:10 AM
To: jsuhecki@emamail.org
Cc: Johanna Kuspert - AQDX
Subject: RE: Rule-324 Comments

Mr. Suhecki,

I apologize, I referenced Rule 140 in my previous Email. That was an error. The email and comments were in Regards to Rule 324 (Stationary Internal Combustion IC Engines. I'm sorry for the mistake. Let me know if you have any questions.

The Air Quality Department strives to provide excellent customer service to residents of Maricopa County.

How are we doing? [Send us your feedback.](#)

Geoffrey Sylvester

Air Quality Senior Planner
Maricopa County Air Quality Department
1001 N. Central Avenue, #125 | Phoenix, AZ 85004
Located at the Central Ave. & Roosevelt METRO stop
Desk 602-506-6016 | CleanAirMakeMore.com



From: Geoffrey Sylvester - AQDX
Sent: Wednesday, August 05, 2015 9:05 AM
To: 'jsuhecki@emamail.org'
Cc: Johanna Kuspert - AQDX
Subject: Rule-140 Comments

Mr. Suhecki,

I just wanted to take a moment to thank you for attending the Rule 140 Stakeholder Workshop on August 3, 2015. I wanted to thank you for your input during the workshop, I think there were some great discussions that took place. Also, I wanted to let you know that we have received your comments in regards to Draft Revisions to Rule 140. I look forward to speaking with you in the near future.

The Air Quality Department strives to provide excellent customer service to residents of Maricopa County.

How are we doing? [Send us your feedback.](#)

Geoffrey Sylvester

Air Quality Senior Planner

Maricopa County Air Quality Department
1001 N. Central Avenue, #125 | Phoenix, AZ 85004
Located at the Central Ave. & Roosevelt METRO stop
Desk 602-506-6016 | CleanAirMakeMore.com



From: Geoffrey Sylvester - AQDX
Sent: Wednesday, August 05, 2015 9:12 AM
To: elizabeth.zima@phoenix.gov
Cc: Johanna Kuspert - AQDX
Subject: Rule 324 Stakeholder Meeting Comments

Ms. Zima,

I just wanted to take a moment to thank you for attending the Stakeholder Workshop regarding Proposed Revisions to Rule 324 (Stationary Internal Combustion IC Engines). I also wanted to let you know that we have received your comments and we will take them into account throughout the rule writing process. Thank you again.

The Air Quality Department strives to provide excellent customer service to residents of Maricopa County.

How are we doing? [Send us your feedback.](#)

Geoffrey Sylvester

Air Quality Senior Planner

Maricopa County Air Quality Department

1001 N. Central Avenue, #125 | Phoenix, AZ 85004

Located at the Central Ave. & Roosevelt METRO stop

Desk 602-506-6016 | CleanAirMakeMore.com



From: Hether Krause - AQDX
Sent: Monday, March 14, 2016 4:51 PM
To: Johanna Kuspert - AQDX
Subject: FW: Regulatory Outreach

From: Jennifer Pokorski - FCDX
Sent: Monday, March 14, 2016 4:51 PM
To: Hether Krause - AQDX
Cc: Lynne Hilliard - MCDOTX
Subject: FW: Regulatory Outreach

From: Regulatory [<mailto:regulations@mail.maricopa.gov>]
Sent: Monday, March 14, 2016 4:50 PM
To: Hether Krause - ENVX; Valerie Beckett - PLANDEVX; Jennifer Pokorski - FCDX
Subject: FW: Regulatory Outreach

From: anne.carlton@aps.com[SMTP:ANNE.CARLTON@APS.COM]
Sent: Monday, March 14, 2016 4:49:53 PM
To: Regulatory
Subject: Regulatory Outreach
Auto forwarded by a Rule

Citizen Comments

Issue: AQ-2015-004 Rule 324 Stationary Internal Combustion (IC) Engines

Citizen's Name: Anne Carlton
Organization: APS
City: Phoenix
Zip: 85014
Phone Number: 4803229313
Phone Type: mobile
Email: anne.carlton@aps.com

Does citizen want to be contacted: yes

Comment is regarding: other

Comments:

104, Partial Exemptions for Emergency Engines Emergency engines are exempt from multiple sections of the rule including, but not limited to, sections 302 and 304. The federal rules require that emergency engines complete tuning procedures similar to what is listed in section 302. Is the county rule less stringent than the federal rule by exempting emergency units from tuning? Or, will emergency generators still be required to complete tuning found in the federal rules? Section 304 is titled Limitations for Non-Emergency Engines. It is weird to exempt emergency engines from a section that is not applicable to anyways. 209.2.c Internal Combustion Engine, Nonroad: We store portable engines at our

service centers and power plants. These units can remain at the facility for any period of time, in some cases greater than 12 months. These units are utilized at various APS facilities/worksites and only stored or used temporarily at the permitted facilities. Please add clarification to the section so it is understood that storage of a unit at a facility for 12 months or greater does not negate its nonroad status. 300, Standards The federal rule requires emergency engines to comply with emission standards, but I do not see any emission requirements in Rule 324. Would this be considered less stringent than federal requirements? How will look in permitting? Table 1, Section 304.1 In section 304, there are emission limits and control equipment reduction requirements. Why list both? If a unit is meeting the emission limits what does the reduction efficiency matter? This opens the door for issuing multiple violations for a single compliance issue. Also, if the 90% removal efficiency remains in the rule, how will compliance be determined? Performance testing – are the units outfitted with appropriate ports? Manufacture documentation? Overall, it is not necessary to have both standards (emission limits & removal efficiency) listed. Table 2, Section 304.2 The specific test methods for PM should not be listed as a footnote to the table, section 500 has the test method requirements covered. The footnote also states that “the results of Method 202 testing shall be used for emission inventory purposes”. First, Method 202 is only one of the acceptable test methods for PM. Second, if testing was required, the results would be used as the emission factor for any pollutant, not just PM testing results. Why only state that test results from 202 be used for emission inventory purposes rather than any test results. Table 3, Section 304.2 The footnote for rich-burn engines requires that a three-way catalyst shall provide control efficiency for NOx of 80%, but 304.1 states reduction must be 90%. But again, if a unit is meeting the stated emission limit, what does removal efficiency matter. 306 Equivalent Replacement Engine The word modification needs to be defined as it relates to triggering NSPS. 402, Compliance Schedule – Non-Resetting Totalizing Hour Meter It is weird that the requirement to install, operate and maintain a non-resetting meter is under section 400, Administrative Requirements, rather than section 300, Standards. The compliance schedule is administrative requirement, but the installation is not.

Time of Request: 3/14/2016 4:49:53 PM

From: Heckel Kyle C <Kyle.Heckel@srpnet.com>
Sent: Tuesday, March 15, 2016 12:14 PM
To: Hether Krause - AQDX; AQPlanning
Cc: Johanna Kuspert - AQDX; Harbin Zachary J
Subject: RE: draft of Rule 324 (Stationary Internal Combustion (IC) Engines) comments due 3-15-16

Hi Hether,

Thank you for the opportunity to review the proposed revisions to Rule 324 prior to the public notice. We would like to provide the following comments on Proposed Rule 324:

- Per Section 102.1, the applicability of Proposed Rule 324 includes the combination of internal combustion engines with a rating of 50 hp or greater, if those engines have an aggregate hp rating greater than 250 hp. Section 304 then provides emission limitations for engines that meet the criteria in Section 102. However, the emission limit tables in Section 304.2 do not provide specific emission limits for engines less than 250 hp. Based on the current language, it is unclear if engines between 50 and 250 hp that are subject to the rule, based on having a cumulative hp rating greater than 250 hp, do not have to comply with emission limits, have to comply with the emission limits provided in the tables contained in Section 304.2 for engines rated at 250 hp, or are only able to comply with Section 304 by complying with either Section 304.1, which requires control equipment, or Section 304.3, which defaults to NSPS IIII and JJJJ. SRP recommends that MCAQD include revisions to provide clarity on the specific requirements of Section 304 that engines greater than 50 hp, but less than 250 hp, are required to comply with.
- Sections 306.2 and 307.1 detail requirements for modifications to equivalent replacement engines and existing stationary RICE engines respectively. The current language of these sections indicate that engines which meet the modification criteria must comply with all applicable provisions of the rule and comply with the provisions of Section 304 of this rule. However, the language of Section 306.2 and 307.1 does not provide direction for how modified engines should be treated within the rule. For example, does the modification date get used when determining which part of Section 304 one must comply with? It is recommended that MCAQD provide additional clarity on how modified engines are treated within the rule, specifically how the modification date determines which parts of Section 304 one must comply with.
- Section 306.2 and 307.1 indicate that whenever a provision in this rule and a provision in Section 304 of this rule apply to such engine, the provision or combination of provisions resulting in the lowest rate of emissions shall apply. This language is confusing given that the provisions of Section 304 of this rule are within the provisions of this rule. It is recommended that this language be removed from Rule 324 since Section 304 of Rule 324 cannot result in a lower emission limit than Rule 324.
- Section 401 provides a compliance schedule for engines being removed from service, however, the schedule established is for the replacement engine to come into compliance with the limits of the rule. Instead, it is recommended that a compliance schedule be provided for when the engine that does not meet the emission limits has to be removed from service.

If you have any questions or need additional clarification on any of the above comments, please let me know.

Thanks,

Kyle

Kyle Heckel
Salt River Project
Sr. Environmental Engineer
602-236-5493
Mail Station PAB352 - PO Box 52025 - Phoenix, AZ 85072

From: Hether Krause - AQDX [mailto:HetherKrause@mail.maricopa.gov]
Sent: Tuesday, March 08, 2016 4:36 PM
To: AQPlanning
Cc: Johanna Kuspert - AQDX
Subject: draft of Rule 324 (Stationary Internal Combustion (IC) Engines) comments due 3-15-16

SRP EXTERNAL WARNING: THINK BEFORE TAKING ANY ACTION WITH UNEXPECTED EMAILS. REPORT ANYTHING SUSPICIOUS.

Stakeholders,

For your review, I have attached the most recent **draft of Rule 324 (Stationary Internal Combustion (IC) Engines)**. This draft rule includes revisions since our last workshop.

Please **e-mail your comments back to me no later than March 15, 2016**. After I receive your comments, we will make additional revisions to the rule as we can and prepare a Notice of Proposed Rulemaking.

After the Notice of Proposed Rulemaking is published in the Arizona Administrative Register, you will have another opportunity to submit comments. You will be notified of this next step via the Enhanced Regulatory Outreach Program (EROP) website.

Thank you for your time and participation in the rule making process.

Hether

The Air Quality Department strives to provide excellent customer service to residents of Maricopa County.

How are we doing? [Send us your feedback.](#)

Hether Krause

Planning & Analysis Division Manager

Maricopa County Air Quality Department
1001 N. Central Avenue, #125 | Phoenix, AZ 85004
Located at the Central Ave. & Roosevelt METRO stop
Desk 602-506-6731 | Fax 602-506-6179



From: Hether Krause - AQDX
Sent: Wednesday, March 16, 2016 3:25 PM
To: Johanna Kuspert - AQDX
Subject: FW: EPA comments on Maricopa 322, 323 & 324

From: Steckel, Andrew [mailto:Steckel.Andrew@epa.gov]
Sent: Wednesday, March 16, 2016 2:42 PM
To: Hether Krause - AQDX; Marina Mejia (Mejia.Marina@azdeq.gov)
Cc: McKaughan, Colleen; Gong, Kevin
Subject: EPA comments on Maricopa 322, 323 & 324



United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

March 16, 2016

Transmittal of EPA Rule Review Comments

To: Hether Krause, Maricopa County Environmental Services Department
hkrause@mail.maricopa.gov

From: Andrew Steckel, Rulemaking Office Chief
steckel.andrew@epa.gov

Re: Maricopa County Air Quality Department, Draft Rule 322 "Power Plant Operations" (dated February 24, 2016), Draft Rule 323 "Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources" (dated February 18, 2016), and Draft Rule 324 "Stationary Internal Combustion (IC) Engines" (dated February 12, 2016).

We are providing comments on the draft rules identified above, based on our preliminary review and conversations between EPA and County staff via telephone on March 8, 2016. Please direct any questions about our comments to me at (415) 947-4115 or to Kevin Gong at (415) 972-3073.

Stringency

1. Interplay of Federal Regulations with Local Regulations

The County's draft rules split source requirements between new units that must meet standards as outlined in Federal NSPS/NESHAP standards, and those that are older which will be meeting standards outlined in the applicable rule. While this effectively ensures that sources are not subject to duplicative requirements, the County must provide analysis that such standards outlined in the NSPS/NESHAPs:

a) are as stringent as the limits and restrictions in the rule for existing units, and would not constitute backsliding under §110(l) of the Clean Air Act (CAA), and;

b) implement Reasonably Available Control Technology (RACT) as described in CAA §182(b).

The EPA generally does not automatically assume NSPS requirements on their own implement RACT because, for example, NSPS requirements are applicable to sources nationwide, not just for non-attainment area sources.

Please provide analysis as outlined above in a) and b), or include rule language in each of the three draft rules that ensures that all applicable sources meet RACT requirements.

2. Exemptions: Emergency Fuel Emissions Limits

The County rules for emergency units, engines and fuel use allow alternative emission limits from normal operating conditions. This is generally allowable, but must also include appropriate limits on the length of the emergency condition and alternative emergency emission limits. Please revise the emergency exemptions in section 104 of each of draft Rules 322, 323 and 324 accordingly.

3. Exemptions: Military Training Facilities

Draft Rules 322 and 323 (section 104.1c in both rules) provide partial exemptions for emissions from military training facilities. The term "military training facility" is unclear in this rule, especially as distinguished from other facilities such as "garrisons."

As discussed with County staff, please focus these exemptions on the specific types of activities at these facilities that reasonably require exemptions, rather than the facilities themselves. See, for example, Imperial County APCD Rule 800, Section E6.

Enforceability

4. Temperature Differential Issues in Turbines

Draft Rule 322, section 301.3, and draft Rule 323, section 301.3a both require measurement of temperature differential across the burners for good combustion practices in turbines. However, the frequency of differential temperature measurement is not specified. Please define the frequency of monitoring, and we additionally recommend requiring continuous monitoring of this differential for both draft rules.

5. Definitions

Please clearly define these terms to improve enforceability.

a) Draft Rules 322 and 323 use the term "Analytical Trace Amounts" in the definition of "Uncombined Water," without further description.

b) Draft Rule 322, sections 301, 305 and 306 use the term "steady-state operation" without further description.

Draft Rule 324, section 209.1d, allows discretion to the Control Officer on the definition of "nonroad engine" without guidance or restriction on how the Control Officer shall make that determination. Please remove this discretion.

6. Startup and Shutdown

Draft Rule 323, sections 503.2a (Source Test) and 503.3 (CEMS), states that no compliance determinations will be made during startup and shutdown. This does not align with EPA's startup, shutdown, and malfunction (SSM) policy, particularly in the case of CEMS-equipped units (see EPA's Startup, Shutdown and Malfunction Policy at <https://www3.epa.gov/airquality/urbanair/sipstatus/emissions.html>).

Please revise Draft Rule 323 to include alternative numerical limits for operations during these periods, require best operating practices (see, for example, Yolo-Solano Air Quality Management District Rule 2.34 for Stationary Gas Turbines), or require that units comply with the standard limits during SSM events.

7. Source Test Results

Draft Rule 323, section 503.2 c and d describe how three source test runs are generally averaged. Practices outlined here would allow the dismissal of one source test run if certain circumstances occur (i.e., forced shutdown, sampling failure, meteorology or other uncontrollable events). Also, a source test that is improperly conducted according to required test methods **may** be rejected. This would allow Control Officer discretion on testing operations that may lead to poor operating data. We recommend removing these provisions.

8. Sulfur Content in Waste Gas Test Method

Draft Rules 323 and 324 both allow for the combustion of waste gases meeting a certain sulfur content limit. However, there is no test method for determining sulfur content of waste gas in these rules. Section 503.1b of Draft Rule 323 and Section 501.4 in Draft Rule 324 require that the supplier submit documentation of sulfur concentration without further discussion of appropriate test method.

9. We also recommend the following:

Revising the typo in Draft Rule 323, section 503.1a “If the Control Officer requests prood of...” to read “proof of”.

Draft Rule 323, section 503.1a, and draft Rule 324, section 501.4, allow various documents to verify compliance with the ultra low sulfur diesel fuel limit. Maricopa County should ensure the documents listed give accurate values and use enforceable test methods. For example, EPA generally has not approved the use of Safety Data Sheets (SDS)/Material Data Safety Sheets (MSDS) to determine compliance in SIP rules unless the SDS/MSDS specifies that the compound of interest was determined by an approved EPA method.

Re-evaluate test method ASTM D1266, listed in each of these Draft Rules, as it may not be appropriate. Its range is 0.01 – 0.4% which will not be able to verify compliance with the definition for ultra low sulfur diesel fuel at < 0.0015%.

[Return to list of Attachments](#)

COUNTY MANAGER CASE APPROVAL



Maricopa County
Air Quality Department

MEMORANDUM

Date: May 4, 2015
To: Tom Manos, County Manager
Via: Joy Rich, AICP, Deputy County Manager
From: Philip A. McNeely, R.G., Director *PAM*
Subject: AQ-2015-004-Rule 324 – County Manager's Approval

In accordance with the "Moratorium on Increased Regulatory Burdens", the Air Quality Department is seeking your approval to proceed with revisions to Rule 324 (Stationary Internal Combustion (IC) Engines). Rule 324 limits the discharge of carbon monoxide, nitrogen oxides (NO_x), sulfur oxides, volatile organic compounds (VOCs), and particulate matter emissions from stationary internal combustion (IC) engines. Revisions to Rule 324 are being proposed to address the requirements of the State Implementation Plan (SIP) for "moderate" nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). Rule 324 revisions will include Reasonably Available Control Technology (RACT) for NO_x.

This rule revision qualifies for County Manager approval under the moratorium, as the rule revision will comply with a federal statutory or regulatory requirement or state statutory requirement. We are requesting your approval to move the rule revision, to be referenced as "AQ-2015-004-Rule 324," forward in accordance with the "Moratorium on Increased Regulatory Burdens".

A handwritten signature in blue ink, appearing to read "Tom Manos".

Approved by Tom Manos, County Manager