NOTICE OF FINAL RULEMAKING

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

RULE 324: STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

The Maricopa County Air Quality Department (MCAQD) revised Rule 324 (Stationary Reciprocating Internal Combustion Engines (RICE)). The Control Officer is posting this Notice of Final Rulemaking on the MCAQD website as required by A.R.S. § 49-471.07(G). This notice includes the preamble, as prescribed in A.R.S. § 49-471.05, and the full text of the final rule. This notice also includes a list of all previous notices posted on the Maricopa County Enhanced Regulatory Outreach Program (EROP) website addressing the proposed rule and the concise explanatory statement prescribed in A.R.S. § 49-471.07, subsection B.

PREAMBLE

1. Statutory authority for the rulemaking:

A.R.S. §§ 49-112, 49-474, 49-479 and 49-480

2. Name and address of department personnel with whom persons may communicate regarding the rulemaking:

Name:	Scott Kahldon or Kimberly Butler Maricopa County Air Quality Department Planning and Analysis Division
Address:	3800 N Central Avenue, Suite 1400 Phoenix, AZ 85012
Telephone:	602-506-6010
Fax:	602-506-6179
Email:	AQPlanning@maricopa.gov
Submit Comments At:	http://maricopa.gov/FormCenter/Regulatory-Outreach- 17/Citizen-Comments-94

3. Rulemaking process:

This rulemaking (AQ-2017-007-Rule 324) followed procedures identified in state statutes and the Maricopa County EROP Policy:

County Manager Briefing:	December 2017
Stakeholder Workshops:	August 22, 2018 October 24, 2019
Board of Health Meeting to Initiate Regulatory Change:	February 25, 2019
Notice of Proposed Rulemaking:	November 24, 2020
Board of Health Meeting to Recommend Approval to the Board of Supervisors:	April 26, 2021

Board of Supervisors Formal Meeting to set the Public Hearing: May 19, 2021

Board of Supervisors Public Hearing: June 23, 2021

4. Explanation of the rule, including the control officer's reasons for initiating the rulemaking:

Rule 324 (Stationary Reciprocating Internal Combustion Engines [RICE]) limits emissions of nitrogen oxides (NOx), sulfur oxides (SOx), carbon monoxide (CO), particulate matter (PM), and volatile organic compounds (VOC) from stationary reciprocating internal combustion engines (such as electrical generators and mechanical pumps).

The MCAQD revised Rule 324 to address rule deficiencies identified by the U.S. Environmental Protection Agency (EPA) to secure full approval of Rule 324 as a revision to the Arizona State Implementation Plan (SIP).

On May 4, 2016, portions of Maricopa County were designated as a moderate nonattainment area with respect to the 2008 National Ambient Air Quality Standards for Ozone. Sections 182(b)(2) and 182(f) of the Clean Air Act require jurisdictions that are classified as "moderate" or higher nonattainment to implement reasonable available control technology (RACT) for all categories of VOC sources covered by a Control Technique Guideline document as well as for all major stationary sources of NO_X and VOCs that are located within the nonattainment area. EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility". The EPA provides guidance on RACT for sources of NO_X through Alternative Control Technology (ACT) documents which offer State and local air pollution control authorities information that assists in determining NO_X-RACT for air quality rules. In addition, the EPA reviews SIP-approved air quality rules from other air districts with ozone nonattainment areas to assist in determining NO_X-RACT for air quality rules.

In November 2016, Rule 324 was revised to implement RACT for sources of NO_X. The revised rule was submitted to the EPA in June of 2017, as part of the SIP Revision for the Maricopa County Air Quality Department Ozone Rules contained in the Arizona SIP. The EPA reviewed Rule 324 and provided the MCAQD with written rule approvability and rule improvement comments for the rule. EPA staff informed MCAQD staff they would be using a conditional approval process to act on Rule 324 and the MCAQD would need to draft a commitment letter outlining revisions to Rule 324 to address the rule approvability comments.

On January 28, 2019, the MCAQD submitted a Letter of Commitment for Conditional Approval of the Maricopa County RACT SIP to the EPA. Later, on December 5, 2019, the MCAQD submitted a supplemental commitment letter to address additional rule approvability comments MCAQD received after the original commitment letter was submitted. Based on the commitment letters, the EPA published a proposed conditional approval of Rule 324 in the Federal Register on December 30, 2019 (Docket ID; EPA-R09-OAR-2019-0321). The proposed conditional approval rulemaking was available for a 30-day comment period, but no comments were received. The proposed conditional approval referenced a Technical Support Document (TSD) which included a thorough review of Rule 324 and MCAQD's commitments. The TSD outlined EPA's four (4) official rule

approvability comments ("rule deficiencies") – which precluded full approval of the rule into the SIP – as well as four (4) rule revision recommendations, which were not the basis for rule disapproval but were recommended for the rulemaking for Rule 324. Revisions addressing both the EPA's identified deficiencies and recommendations were made to Rule 324 (included in this notice). A link to EPA's TSD is located under Section 5 of this notice.

EPA's final conditional approval was published on July 20, 2020. The effective date of the final rule was August 19, 2020. The MCAQD plans to submit the revised rule to the EPA for approval and if the EPA approves the rule, the identified deficiencies will be cured, and the rule will be approved as part of the Arizona SIP.

Details about the EPA's identified deficiencies and the MCAQD's remedies are described below, followed by the EPA rule recommendations and the MCAQD's revisions to address the recommendations.

Deficiency 1:

The submitted rule's current structure of applicability and emission limits does not clearly outline a RACT limit for NOx and VOC emissions from all applicable IC engines. The MCAQD should review similar source category regulations in other jurisdictions (San Diego APCD Rule 69.4 and Yolo-Solano AQMD Rule 2.32) on how they structure clearer RACT limits that may include similar or more stringent requirements or limits for engines otherwise subject to federal requirements and standards in 40 CFR part 60, subparts IIII and JJJJ. We understand that units may need to comply with more stringent Federal standards in some cases, but a RACT limit would not interfere with a facility's compliance with a more stringent limit. The Clean Air Act requires that RACT limitations be approved into the Federally-enforceable SIP. It is inappropriate to rely on requirements outside of the SIP, such as NSPS standards found in 40 CFR Part 60.

Remedy 1:

The MCAQD restructured the rule to clarify applicability and emission limits. The MCAQD retained existing SIP requirements for stationary RICE that are not located at a major stationary source of nitrogen oxides. The MCAQD retained the existing numeric emission limits in SIP Rule 324 for non-emergency engines that are located at a major stationary source of nitrogen oxides (because these limits are consistent with RACT limits in other jurisdictions).

Deficiency 2:

The submitted rule only applies to engines rated greater than 250 bhp, and to engines greater than 50 bhp when operating at a facility whose units sum to greater than 250 bhp. The MCAQD should lower the applicability threshold to 50 bhp to be in line with other jurisdictions' RACT rules. The current rule also does not clearly state compliance requirements for 50 bhp engines summed at a 250 bhp facility.

Remedy 2:

The MCAQD lowered the applicability threshold to 50 bhp for stationary RICE located at a major source of nitrogen oxides. The MCAQD clarified what emission limits apply to non-emergency engines rated above 50 bhp that are located at a major stationary source of nitrogen oxides.

Deficiency 3:

The submitted rule allows for flexibility in the treatment of replacement engines. In section 104.6, emergency engines that serve as backup to replace non-emergency engines may do so until the non-emergency engine is repaired, but this time span is otherwise unbounded, and may operate above RACT limits. The MCAQD should restrict the amount of time allowed to operate that emergency engine, or the backup engine should be required to meet RACT limits. Current rule provisions in sections 207 and 306 also allow for engines that are deemed equivalent or identical to replace existing engines to be treated the same as the engine being replaced, but there are no requirements for replacement engines to quantify emissions equivalency or reductions.

Remedy 3:

The MCAQD incorporated constraints on the amount of time an emergency engine can be used to replace a non-emergency engine when the non-emergency engine has failed, and clarified the amount of time that is allowed for emergency engine operations in the definition for "emergency engine." The MCAQD removed provisions related to equivalent replacement engines from Rule 324.

Deficiency 4:

The submitted rule does not specify a compliance determination interval for engines, beyond at the Control Officer's discretion. This provision is found in section 501.1b.

Remedy 4:

The MCAQD included compliance determination intervals for non-emergency engines located at both major sources and for those not located at major sources.

Recommendation 1:

Section 103.1(e) exempts stationary engines at a nuclear power plant used for safety reasons. Please describe the engines used at these facilities and explain why such plants cannot use compliant engines for safety applications.

Revision 1:

The MCAQD changed the full exemption to a partial exemption as outlined under section 108.

Recommendation 2:

Section 104 and section 205 provide special considerations for emergency engines. Please explain why these engines need special consideration, when these engines already exist on site. Please characterize the number of sources that have non-compliant engines and would qualify under these partial exemptions.

Revision 2:

The MCAQD reviewed RACT rules for engines in other jurisdictions and determined that many jurisdictions require maintenance for emergency engines. This is also consistent with the NSPS and NESHAP for stationary engines (40 CFR 60.4211, 60.4243, and 63.6625(e)).

Therefore, the MCAQD determined that engine maintenance is RACT for emergency engines. In addition, the MCAQD is requiring an hour meter to determine compliance with operating limits and fuel records to determine compliance with fuel requirements.

Recommendation 3:

Section 105 describes a low use threshold that varies between 100-200 hours per year depending on whether the engine is above or below a 1000 bhp threshold. How many engines are in each size class, and why is this threshold a reasonable cut-point?

Revision 3:

MCAQD limited the partial exemption in Section 105 to those low use non-emergency engines that are onsite and in use before the date of rule adoption.

Recommendation 4:

Section 103.1.g exempts stationary engines used for training purposes. The term "training" is undefined. Please define what activities constitute valid training with respect to engines in this context.

Revision 4:

The MCAQD removed this exemption. This exemption has not been used in the past and training engines that operate less than 100 hours per year may still qualify for the low-use exemption in Section 105 of this rule.

Additional revisions were made to address stakeholder and staff comments, which can be discerned in the "strikeout and underline" version of the rule included in this notice and described in all Stakeholder Workshop notices and workshop slides/presentations that are posted on the EROP website.

5. Studies relied on in the control officer's evaluation of or justification for the rule and where the public may obtain or review the studies, all data underlying the studies, any analysis of the studies and other supporting material.

United States Environmental Protection Agency Region IX Air Division (2019). Technical Support Document for EPA's Rulemaking for the Arizona State Implementation Plan Regarding Rule 324, "Stationary Reciprocating Internal Combustion Engines (RICE). https://www.regulations.gov/document?D=EPA-R09-OAR-2019-0321-0012

6. An economic, small business and consumer impact statement:

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement, as prescribed by A.R.S. §§ 41-1055, subsections A, B and C, and 41-1035:

An identification of the rulemaking, including all of the following:

This rulemaking revised Rule 324.

(a) The conduct and its frequency of occurrence that the rule is designed to change.

The MCAQD revised Rule 324 to remedy deficiencies identified by the EPA. This rulemaking is required to secure approval of Rule 324 into the Arizona SIP.

The revisions are explained in more detail in Item #4 of this notice.

(b) The harm resulting from the conduct the rule is designed to change and the likelihood it will continue to occur if the rule is not changed.

The MCAQD revised Rule 324 to remedy deficiencies identified by the EPA. This rulemaking is required to secure approval of Rule 324 into the Arizona SIP and avoid sanctions and imposition of a Federal Implementation Plan (FIP) under the Clean Air Act.

(c) The estimated change in frequency of the targeted conduct expected from the rule change.

The MCAQD revised Rule 324 to remedy deficiencies identified by the EPA. This rulemaking is required to secure approval of Rule 324 into the Arizona SIP. As with other rules, the MCAQD will use education, outreach, and other compliance assurance tools to increase the number of people in compliance with the revised rule. The MCAQD strives to achieve the highest possible compliance rates.

A brief summary of the information included in the economic, small business and consumer impact statement.

The economic, small business and consumer impact statement addresses each of the elements required for an economic, small business and consumer impact statement, as prescribed by A.R.S. §§ 41-1055, subsections A, B, and C, and 41-1035.

Name and address of agency employees who may be contacted to submit or request additional data on the information included in the economic, small business and consumer impact statement.

Name:	Scott Kahldon or Kimberly Butler Maricopa County Air Quality Department Planning and Analysis Division
Address:	3800 N Central Avenue, Suite 1400 Phoenix, AZ 85012
Telephone:	602-506-6010
Fax:	602-506-6179
Email:	AQPlanning@maricopa.gov
Submit Comments At:	http://maricopa.gov/FormCenter/Regulatory-Outreach- 17/Citizen-Comments-94

An identification of the persons who will be directly affected by, bear the costs of or directly benefit from the rulemaking.

This rulemaking will directly affect facilities in Maricopa County that have stationary reciprocating internal combustion engines with a rated brake horsepower (rated bhp) of:

(1) Greater than 125, if the stationary RICE is not located at a major source of NOx emissions,

(2) Greater than 50, if the stationary RICE is not located at a major source of NOx emissions and the maximum aggregated rated bhp of all stationary RICE at the

stationary source is more than 125 when all engines with a rated bhp of more than 50 are aggregated,

(3) Greater than 50, if the stationary RICE is located at a major source of NOx emissions, and

(4) Any nonroad engine, with a rated bhp of greater than 125, that is located at a stationary source that emits or has the potential to emit any regulated air pollutant greater than the permitting thresholds defined in Rule 100. A nonroad engine is any 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.

A cost benefit analysis of the following:

(a) The probable costs and benefits to the implementing agency and other agencies directly affected by the implementation and enforcement of the rulemaking.

This rulemaking should not impose any new costs on the MCAQD or on any other agencies affected by the rulemaking.

(b) The probable costs and benefits to a political subdivision of this state directly affected by the implementation and enforcement of the rulemaking.

The MCAQD revised Rule 324 to remedy deficiencies identified by the EPA. This rulemaking is required to secure approval of Rule 324 into the Arizona SIP for RACT and avoid sanctions and imposition of a FIP under the Clean Air Act. In general, the majority of political subdivisions to which this rule applies will not incur significant new costs based on the revisions; however, some political subdivisions may incur costs required to comply with the revised compliance determination methods in Section 500, specifically the revised performance test requirements. In the previous version of Rule 324, a political subdivision required to conduct a performance test to demonstrate compliance under Section 500 did so upon request by the Control Officer. Under Section 500 in the revised rule, a political subdivision required to conduct a performance test to demonstrate compliance will have to do so at least once every 5 years. For some political subdivisions, this may require new or additional performance testing which will lead to increased costs. In addition, new or additional performance testing may lead to increased cases of noncompliance, and for those political subdivisions that are out of compliance, there will be increased costs to come back into compliance.

(c) The probable costs and benefits to businesses directly affected by the rulemaking, including any anticipated effect on the revenues or payroll expenditures of employers who are subject to the rulemaking.

The MCAQD revised Rule 324 to remedy deficiencies identified by the EPA. This rulemaking is required to secure approval of Rule 324 into the Arizona SIP for RACT and avoid sanctions and imposition of a FIP under the Clean Air Act. In general, the majority of businesses to which this rule applies will not incur significant new costs based on the revisions; however, some businesses may incur costs required to comply with the revised compliance determination methods in Section 500, specifically the revised performance test requirements. In the previous version of Rule 324, a business required to conduct a performance test to demonstrate compliance under Section 500

did so upon request by the Control Officer. Under Section 500 in the revised rule, a business required to conduct a performance test to demonstrate compliance will have to do so at least once every 5 years. For some businesses, this may require new or additional performance testing which will lead to increased costs. In addition, new or additional performance testing may lead to increased cases of noncompliance, and for those businesses that are out of compliance, there will be increased costs to come back into compliance.

A general description of the probable impact on private and public employment in businesses, agencies and political subdivisions of this state directly affected by the rulemaking.

This rulemaking should not have a significant impact on private or public employment in businesses, agencies, and political subdivisions of this state.

A statement of the probable impact of the rulemaking on small businesses. The statement shall include:

(a) An identification of the small businesses subject to the rulemaking.

Small businesses subject to this rulemaking are those facilities in Maricopa County that have stationary reciprocating internal combustion engines that meet the requirements of Section 102 of the rule included in this notice.

(b) The administrative and other costs required for compliance with the rulemaking.

In general, the majority of businesses to which this rule applies will not incur significant new costs based on the revisions; however, some businesses may incur costs required to comply with the revised compliance determination methods in Section 500, specifically the revised performance test requirements. In the previous version of Rule 324, a business required to conduct a performance test to demonstrate compliance under Section 500 did so upon request by the Control Officer. Under Section 500 in the revised rule, a business required to conduct a performance test to demonstrate compliance will have to do so at least once every 5 years. For some businesses, this may require new or additional performance testing which will lead to increased costs. In addition, new or additional performance testing may lead to increased cases of noncompliance, and for those businesses that are out of compliance, there will be increased costs to come back into compliance.

(c) A description of the methods that the agency may use to reduce the impact on small businesses.

i. Establish less stringent compliance or reporting requirements in the rule for small businesses.

In general, this rulemaking does not impose any significant new compliance requirements on small businesses and does not establish any significant new reporting requirements for small businesses. However, some small businesses will be required to comply with the revised compliance determination methods in Section 500, specifically the revised performance test requirements described above. For some small businesses, this may require new or additional performance testing. Less stringent performance testing requirements are not feasible because the revised

testing requirements are required to remedy one of the deficiencies identified by the EPA in the rule.

ii. Establish less stringent schedules or deadlines in the rule for compliance or reporting requirements for small businesses.

In general, this rulemaking does not impose any significant new schedules or deadlines for compliance and reporting requirements on small businesses. However, some small businesses will be required to comply with the revised compliance determination methods in Section 500, specifically the revised performance test requirements described above. For some small businesses, this may require new or additional performance testing. Less stringent performance testing requirements are not feasible because the revised testing requirements are required to remedy one of the deficiencies identified by the EPA in the rule.

iii. Consolidate or simplify the rule's compliance or reporting requirements for small businesses.

In general, this rulemaking does not impose any significant new compliance requirements on small businesses and does not establish any significant new reporting requirements for small businesses. However, some small businesses will be required to comply with the revised compliance determination methods in Section 500, specifically the revised performance test requirements described above. For some small businesses, this may require new or additional performance testing. Less stringent performance testing requirements are not feasible because the revised testing requirements are required to remedy one of the deficiencies identified by the EPA in the rule.

iv. Establish performance standards for small businesses to replace design or operational standards in the rule.

In general, this rulemaking does not impose any significant new compliance requirements on small businesses and does not establish any significant new reporting requirements for small businesses. However, some small businesses will be required to comply with the revised compliance determination methods in Section 500, specifically the revised performance test requirements described above. For some small businesses, this may require new or additional performance testing. Less stringent performance testing requirements are not feasible because the revised testing requirements are required to remedy one of the deficiencies identified by the EPA in the rule.

v. Exempt small businesses from any or all requirements of the rule.

This rulemaking contains some partial and full exemptions as outlined in sections 103-108 within this rule.

(d) The probable cost and benefit to private persons and consumers who are directly affected by the rulemaking.

This rulemaking should not result in any significant costs for private persons and consumers.

A statement of the probable effect on state revenues.

No significant effect on state revenues is expected by this rulemaking.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking, including the monetizing of the costs and benefits for each option and providing the rationale for not using nonelected alternatives.

The purpose of this rulemaking was to revise Rule 324 to remedy deficiencies identified by the EPA. This rule making is required to secure approval of Rule 324 into the SIP for RACT and avoid sanctions and imposition of a FIP under the Clean Air Act.

A description of any data on which a rule is based with a detailed explanation of how the data was obtained and why the data is acceptable data.

Not applicable.

7. The effective date of the rule:

The effective date of this rulemaking was June 23, 2021.

8. Such other matters as are prescribed by statute and that are applicable to the county or to any specific rule or class of rules:

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 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 requirements are met:

1. The rule, ordinance or regulation is necessary to address a peculiar local condition.
2. There is credible evidence that the rule, ordinance or 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 regulation is equivalent to federal statutes or regulation.
3. Any fee or tax adopted under the rule, ordinance or regulation does not exceed the reasonable costs of the county to issue and administer the permit or plan approval program.

§ 49-112(B)

When authorized by law, a county may adopt rules, ordinances or 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 regulation that does not exceed the reasonable costs of the county to issue and administer that permit or plan approval program.

The MCAQD is in compliance with A.R.S. §§ 49-112 (A) and (B). Rule 324 meets A.R.S. § 49-112 (A) (1) by demonstrating that the rule is necessary to address a peculiar local condition, in that Maricopa County fails to meet the 8-hour NAAQS for ozone. Rule 324 meets the requirements of A.R.S. § 49-112 (A) (2) (b), in that Maricopa County is required by federal law to revise existing rules to address RACT for the facilities that have stationary reciprocating internal combustion engines. As there is no new fee or tax associated with this rulemaking, the MCAQD also affirms that Rule 324 meets the requirements of A.R.S. § 49-112 (A) (3) and A.R.S. § 49-112 (B).

9. List of all previous notices posted to the Maricopa County EROP website addressing the rule and a concise explanatory statement, as prescribed by A.R.S. § 49-471.07, subsection B:

(a) List of all previous notices posted to the Maricopa County EROP website addressing the rule:

Notice	Date of Posting
Briefing Notification to County Manager:	January 26, 2018
Notice of Stakeholder Workshop:	August 03, 2018 October 09, 2019
Notice of Board of Health Meeting to Initiate Regulatory Change:	February 08, 2019
Notice of Proposed Rulemaking:	November 24, 2020
Notice of Board of Health Meeting to Make Recommendations to the Board of Supervisors:	April 12, 2021
Notice of Public Hearing	May 19, 2021

(b) The following discussion addresses each of the elements required for a concise explanatory statement, as prescribed by A.R.S. § 49-471.07, subsection B:

i. A description of any change between the proposed rule or ordinance, the final rule or ordinance or notice of final supplemental rule or ordinance.

The following changes were made after the Notice of Proposed Rulemaking was published on November 24, 2020.

1. The MCAQD revised the definition of Part(s) Per Million, Dry Volume (PPMDV) to be consistent between Rules 322, 323, and 324. The section was revised as indicated below:

   Section 215: PARTS PER MILLION BY VOLUME DRY (PPMVD): A unit of proportion used to express concentration that is corrected to a dry basis.

2. Based off of staff comments, the MCAQD removed the oxygen correction from the definition of Part(s) Per Million, Dry Volume and placed it closer to the corresponding emission limits in the rule to improve rule clarity. The MCAQD

added an asterisk to denote the phrase "ppmvd emission standards are corrected to 15% oxygen" to the tables indicated below:

Table 324-1
Table 324-2
Table 324-3

3. The MCAQD revised the acronym "ppmdv" to "ppmvd" to match the revised definition for Parts Per Million By Volume Dry (PPMVD). This revision was added to the tables listed below.

   Table 324-1
   Table 324-2
   Table 324-3

4. The MCAQD removed the language "in accordance with the requirements of Rule 270 of these rules" in section 501.4. The section was revised as indicated below:

   > Section 501.4: Performance Test Conditions: Performance tests shall be conducted using the test methods listed in Section 503 of this rule. Testing for stationary RICE shall be completed at either the maximum operating load or no less than 80% of the rated 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 rated bhp or under the typical duty cycle or typical operational mode of the engine. The result of the performance test shall be the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour.

5. Based off of stakeholder comments, the MCAQD revised the applicability language in Section 102.1.d clarifying which nonroad engines are subject to the recordkeeping requirements in Rule 324. This section was revised as indicated below:

   > Section 102.1.d: Any nonroad engine, with a rated bhp of greater than 125, that is located at a stationary source that emits or has the potential to emit any regulated air pollutant greater than the permitting thresholds defined in Rule 100 of these rules. For the purpose of this Rule, a nonroad engine is any 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.

   In addition, the MCAQD revised the nonroad engine records requirements in Section 502.6 clarifying the records specified in Section 502.6.b.(1), (2) and (3) are only required to be kept for those nonroad engines located at a stationary source greater than 14 consecutive days. This section was revised as indicated below:

Section 502.6: Nonroad Engine Records: An owner or operator of a nonroad engine shall maintain the following records for each non-road engine:

a Date that each engine is brought to the stationary source; and

b. For engines located at a stationary source greater than 14 consecutive days:

(1) Make, model, serial number, and rated capacity (bhp hours) of the engine; and

(2) Date of each instance in which the engine is moved from its existing location, and the reason why the engine was moved; and

(3) Fuel type and sulfur content of the fuel.

6. The MCAQD made non-substantive clarifications to the maintenance procedure language in Sections 302.2 and 302.3. These sections were revised as indicated below:

Section 302.2: The following maintenance procedures shall be completed no less frequently than every 1,000 hours of operation (for engines that operate 1,000 hours per year or more) or at least once every 12 months (for engines that operate less than 1,000 hours per year):

a. Check the inlet air filter and replace as necessary;

b. Check all fuel filters and clean as necessary (except cartridge type fuel filters);

c. Check cartridge type fuel filters and replace as necessary;

d. Check and adjust the intake and exhaust valves;

e. Check and adjust the spark plugs (if so equipped);

f. Check and adjust the spark timing and dwell or fuel injection timing (if adjustable); and

g. Check and adjust the carburetor mixture (if adjustable).

Section 302.3: The following maintenance procedures shall be completed no less frequently than every 3,000 hours of operation (for engines that operate 3,000 hours per year or more) or at least once every 12 months (for engines that operate less than 3,000 hours per year):

a. Check spark plugs and ignition points, and replace as necessary (if so equipped);

b. Check coolant and change as necessary (if so equipped); and

c. Check the exhaust system and repair all leaks and/or restrictions.

ii. A summary of the comments and arguments for and against the notice and the county's response to the comments and arguments.

The following discussion evaluates the arguments for and against the rule and includes responses to comments received on the rule or the preamble in the Notice of Proposed Rulemaking. The MCAQD received written comments from four (4) stakeholders. All of the comments were reviewed and evaluated by the MCAQD.

Comment #1: The hours of operation for emergencies should be specified in this section and testing, reliability and maintenance hours should be grouped together as non-emergency hours. Suggested language is: "Monthly and rolling twelve-month total hours of operation, emergency hours of operation, and non-emergency hours of operation (including hours for testing, reliability, and maintenance)."

Response #1: The MCAQD considered your comment and revised the language in Section 502.2 to read as follows: Operation Records: An owner or operator of a stationary RICE shall maintain records of the monthly and 12-month rolling total hours of operation for each stationary RICE. For emergency engines, the operation records shall also include:

a. Monthly and annual hours of operation for reliability related activities such as engine readiness, calibration, or maintenance, or to prevent the occurrence of an unsafe condition during electrical system maintenance; and

b. The number of operating hours for emergency use and an explanation for the emergency use.

Comment #2: We recently had several air permit inspections for our general permits that are for our emergency generators. We have been having these inspections every other year for our facilities and not had any major issues during the inspections. Each generator has a logbook that has a monthly record for the checks that take place, any operation or other issues that occur. Historically, these records were used to calculate the 12-month hours of operation to show compliance with permit conditions. However, during our recent inspections, we were informed that we had not been keeping a monthly rolling record of hours and that we needed to begin this for our general permitted sites. I've reviewed the permit and Rule 324 and understand that this is required but seems like an unnecessary effort if we keep a monthly log of hours. The previous 12 months can easily be calculated by taking March 2019 hours and subtracting March 2018 hours to show the current 12 months of hours of operation. The City of Chandler emergency generators typically run less than a couple hours a month, often times even less than a couple hours. The City understands the permit language and will do what is needed to maintain compliance. However, since our sites have been inspected frequently and this has not previously been noted nor has it been noted as a compliance issue. The City believes that for remote sites that also run very limited hours that the information needed to determine hours of operation can be calculated from the on-site logbooks during inspections. Our emergency generators are typically at unmanned facilities, have limited use and would require additional effort and resources to collect and track this information. We hope to see this requirement addressed through logbook information that is maintained at each site and not a requirement to create spreadsheets for each generator (we have over 30 permitted sites). Since Rule 324 is

currently being reviewed and possibly amended we hope that this issue can be addressed during this process. We would like to see this section clarified that for limited use, unmanned sites that the on-site logbook can be used to determine the 12-month hours of operation.

Response #2: The MCAQD considered your comment and determined that records of the 12-month rolling total hours of operation are needed to ensure compliance with emission and/or operation limits. The information can be recorded in the logbook or using any other method as long as the required records are maintained.

Comment #3: We have reviewed the language and our operations across our fleet. We are requesting the following change to the verbiage (see below). We have engines from 15 different manufactures (some are no longer in business) and only use a single qualified service provider. The use of one contractor to conduct engine is preferred by our Supply Chain because of the clearance required to work at some of our sites as well as safety hazards associated with our facilities. There are some service providers that have safety records that prohibit them from working at our sites entirely.

An owner or operator of a stationary RICE shall maintain the stationary RICE in accordance with the manufacturer's written instructions or in accordance with the written maintenance schedule provided by ~~the manufacturer's authorized~~ a qualified service provider. If the manufacturer's written instructions are not available and ~~the manufacturer's authorized~~ qualified service provider does not provide a written maintenance schedule, the owner or operator shall conduct preventative maintenance according to the following schedule, including all of the following procedures, if the engine is so equipped, and if such procedures are appropriate to the type of engine:

Response #3: The MCAQD considered your comment and revised the language in Section 302 to read as follows: MAINTENANCE REQUIREMENTS: An owner or operator of a stationary RICE shall maintain the stationary RICE in accordance with the manufacturer's written instructions or in accordance with the maintenance schedule provided by the manufacturer's authorized service provider. Alternatively, the owner or operator shall conduct preventative maintenance according to the following schedule, including all of the following tuning procedures, if the engine is so equipped, and if such procedures are appropriate to the type of engine.

Comment #4: Thanks for the opportunity to provide comments in your chat room during the October 24, 2019 workshop. I notice of you could not accept a proposed comment [KB-A30] about changing the term "manufacturer's authorized service provider" with the term "qualified service provider" because this is not a recognized term in use by the EPA. We agree with the commenters concern about the term "authorized service provider" because the term in our opinion raises proprietary issues related to maintenance documentation provided by engine and/or emergency generator manufacturers exclusively to authorized dealerships. A regular maintenance provider may have authorizations from various engine manufacturers but may not be able to get authorizations from for example emergency generator manufacturers who have their own non-road engines installed. We suggest you consider alterative

options and include language in Section 302 about "or authorization from a manufacturer of a similar engine type" and "in accordance with recommendations from the manufacturer of a similar engine type."

Response #4: The MCAQD considered your comment and revised the language in Section 302 to read as follows: MAINTENANCE REQUIREMENTS: An owner or operator of a stationary RICE shall maintain the stationary RICE in accordance with the manufacturer's written instructions or in accordance with the maintenance schedule provided by the manufacturer's authorized service provider. Alternatively, the owner or operator shall conduct preventative maintenance according to the following schedule, including all of the following tuning procedures, if the engine is so equipped, and if such procedures are appropriate to the type of engine.

Comment #5: I have a few comments for draft Rule 324, which deals explicitly with non-road engines. I understand the purpose of tracking non-road engines and the amount of time they are onsite to ensure there is no circumvention of the rules by using a non-road engine as a stationary engine. Unfortunately, the record-keeping requirement can be quite burdensome for facilities with special events that use non-road generators for a minimal amount of time. Almost all non-road generators are brought onto the site and removed in less than a week, and many within 24 hours. Could there be a timeframe, such as seven days, that if a non-road engine is brought onsite for more than seven days, then section 502.6 applies? Additionally, the serial number requirement in Section 502.6 b. can be difficult to obtain depending on the situation. Rental companies will have the make, model, and capacity readily available for the non-road engines being rented, but not the specific serial number sent to the site. If the non-road engine is brought onto the site for a single night event, it can be challenging to obtain the serial number for an event that lasts three hours at night.

Response #5: The MCAQD considered your comments and revised the language in Section 502.6 to read as follows: Nonroad Engine Records: An owner or operator of a nonroad engine shall maintain the following records for each non-road engine: a. Date that each engine is brought to the stationary source ; and b. For engines located at a stationary source greater than 14 consecutive days: (1) Make, model, serial number, and rated capacity (bhp hours) of the engine; and (2) Date of each instance in which the engine is moved from its existing location, and the reason why the engine was moved; and (3) Fuel type and sulfur content of the fuel. Additionally, the MCAQD revised the applicability language in Section 102.1.d to clarify which nonroad engines are subject to the recordkeeping requirements in Rule 324. Section 102.1.d now reads as follows: Any nonroad engine, with a rated bhp of greater than 125, that is located at a stationary source that emits or has the potential to emit any regulated air pollutant greater than the permitting thresholds defined in Rule 100 of these rules. For the purpose of this Rule, a nonroad engine is any 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.

EXACT WORDING OF THE RULE

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

RULE 324
STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE)

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Adopted 10/22/2003; Revised 10/17/2007; Revised 11/02/2016; **Revised 06/23/2021**

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

RULE 324
STATIONARY RECIPROCATING INTERNAL COMBUSTION 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 engines (RICE).

102 APPLICABILITY:

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.~~

a. Any stationary RICE, including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 125, if the stationary RICE is not located at a major source of NO_X emissions;

b. Any stationary RICE, including stationary RICE used in cogeneration, with a rated bhp of more than 50 if the stationary RICE is not located at a major source of NO_X emissions and the maximum aggregated rated bhp of all stationary RICE at the stationary source is more than 125 when all engines with a rated bhp of more than 50 are aggregated;

c. Any stationary RICE, including stationary RICE used in cogeneration, with a rated brake horsepower (rated bhp) of greater than 50, if the stationary RICE is located at a major source of NO_X emissions; and

d. Any nonroad engine, with a rated bhp of greater than 125, that is located at a stationary source that emits or has the potential to emit any regulated air pollutant greater than the permitting thresholds defined in Rule 100 of these rules. For the purpose of this Rule, a nonroad engine is any 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.

102.2 NSPS: In addition to this rule, a stationary RICE may be subject to New Source Performance Standards (NSPS) in Rule 360 of these rules. ~~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.~~

102.3 ~~NSPS &~~ **NESHAP:** In addition to this rule, a stationary RICE may be subject to ~~New Source Performance Standards (NSPS) in Rule 360 and/or~~ National Emission Standards for Hazardous Air Pollutants (NESHAP) in Rule 370 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.~~

~~103.1~~ **103** **EXEMPTIONS:** 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.~~ **103.1** 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.~~ **103.2** 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.~~ **103.3** 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.~~ **103.4** 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.~~

104 **PARTIAL EXEMPTIONS FOR EMERGENCY ENGINES:** A stationary RICE operated as an emergency engine, as defined in this rule, for any of the following reasons shall ~~comply only with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4~~ be exempt from Sections 304, 501.1, 501.2, 501.3, and 501.4 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 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 for these purposes does not exceed 100 hours per calendar year per engine as evidenced by an installed ~~non-resettable~~ non-resetting totalizing hour meter. For the purposes of this rule, hours of operation during the commissioning period do not count towards the 100 hour per calendar year limit on hours of operation for reliability-related activities.

104.6 Used as the non-emergency engine when the non-emergency engine has failed, but only for such time as is needed to repair the non-emergency engine. For the purposes of this exemption, if the non-emergency engine is not repaired and returned to service within 12 months, or if the emergency engine is used as the non-emergency engine for more than 50 hours, whichever occurs first, the emergency engine shall be reclassified as a non-emergency engine and shall comply with all requirements of this rule that are applicable to non-emergency engines.

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 ENGINES: The following low usage non-emergency engines onsite and in use before June 23, 2021 shall ~~comply only with the provisions in Sections 301, 303, 306, 307, 400, 502.1 and 502.4~~ be exempt from Sections 304, 501.1, 501.2, 501.3, 501.4, and 502.6 of this rule ~~for~~:

105.1 Each engine with a rated bhp at or below 1000 that operates less than 200 hours per calendar year as evidenced by an installed ~~non-resettable~~ non-resetting totalizing hour meter.

105.2 Each engine with a rated bhp above 1000 that operates less than 100 hours per calendar year as evidenced by an installed ~~non-resettable~~ non-resetting totalizing hour meter.

106 PARTIAL EXEMPTION FOR ~~NON-EMERGENCY ENGINES SUBJECT TO 40 CFR PART 63, SUBPART ZZZZ~~ NONROAD ENGINES: ~~A stationary RICE subject to the federal standards of performance set forth in 40 CFR Part 63, Subpart ZZZZ shall comply only with the provisions in Sections 502.1, 502.2, and 502.3 of this rule.~~ Each nonroad engine shall comply with Rule 300 of these rules and Section 502.6 of this rule, but shall be exempt from all other requirements of this rule.

107 PARTIAL EXEMPTION FOR NON-EMERGENCY ENGINES THAT ARE LOCATED AT A MAJOR SOURCE OF NO_X: A non-emergency engine that is located at a major source of NO_X shall not be required to comply with Section 501.2 of this rule during the five year period beginning on January 1st of the year in which the engine was manufactured, if the owner or operator provides documentation that the non-emergency engine is certified by the manufacturer to comply with emission limits in 40 CFR 60 subpart IIII or 40 CFR 60 subpart JJJJ that are more stringent than the applicable emission limit(s) in Table 324-3 of this rule, and provides documentation that the non-emergency engine is installed, operated, and maintained in accordance with the manufacturer's specifications.

108 **PARTIAL EXEMPTION FOR STATIONARY RICE THAT ARE LOCATED AT A NUCLEAR POWER PLANT:** A stationary RICE that is located at a nuclear power plant and is operated solely for the following reasons shall comply only with the provisions in Sections 301, 302, 306, 402, 501.5, 502.1, 502.3, 502.4, and 502.5 of this rule:

108.1 Used for safety reasons and for operational tests required by the Nuclear Regulatory Commission.

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

108.3 Used for the emergency pumping of water resulting from a flood, fire, lightning strikes, police action or for any other operation that is essential to public health and safety.

108.4 Used to initiate operation of onsite emergency power generation equipment.

108.5 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. Hours of operation for reliability-related activities shall not exceed 100 hours per year unless the reliability-related activities are recommended or required by the federal, state, or local government and the owner or operator maintains records demonstrating that the reliability-related activities are recommended or required.

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.

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 **ALTERNATIVE FUELS:** Substitutes for oil-derived and fossil-fuel derived fuels, including but not limited to biodiesel, propane, ethanol, or methanol.

~~202~~ **203** **COGENERATION 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.

204 **COMMISSIONING PERIOD:** The final phase of the stationary RICE construction process during which all mechanical, electrical, and control systems for the RICE and all related equipment are checked, and all performance measures specified in the purchase agreement are confirmed. For the purposes of this rule, a stationary RICE may not be used for its intended purpose or any other beneficial use during the commissioning period. If a non-emergency engine subject to this rule is also subject to a condition in a Maricopa County Air Quality Permit limiting total hours of operation, the hours of operation during the commissioning period shall be included when determining compliance with the permitted limit on total hours of operation.

~~203~~ **205** **COMPRESSION-IGNITION 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-ignition engine.~~

~~205~~ **206** **EMERGENCY 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 Section 104.5 of this rule.~~ A stationary RICE that meets all of the following criteria:

206.1 Is operated solely for any of the reasons listed in Section 104 of this rule;

206.2 Does not exceed 500 hours of operation per any twelve consecutive months, including the 100 hours per calendar year listed in Section 104.5 of this rule and including any hours of operation that occur during the commissioning period; and

206.3 Is not operated to supply standby power due to a voluntary reduction in power by a utility or power company, or to supply power for distribution or sale to the grid, or to supply power at a source in order to avoid peak demand charges or high electric energy prices during on-peak price periods.

~~206 ENGINE FAMILY: A group of 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: A stationary RICE that is substituted for another 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:~~

~~207.1 The equivalent replacement engine results in equal or lower air contaminant emissions than the original stationary RICE; and~~

~~207.2 The equivalent replacement engine meets the emission control technology standards contained in Section 304 of this rule; and~~

~~207.3 The rated bhp of the equivalent replacement engine does not exceed the rated bhp of the original stationary RICE (or sum of original stationary RICE) by more than 20 percent, for the purpose of this rule. For every percentage point increase of the rated 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.~~

207 **GASOLINE:** Any fuel sold in any State for use in motor vehicles and motor vehicle engines, or nonroad or stationary engines, and commonly or commercially known or sold as gasoline.

208 **IDENTICAL REPLACEMENT ENGINE:** A stationary RICE that is substituted for another 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.

209 **LEAN-BURN 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%.

210 **LIQUEFIED PETROLEUM GAS (LPG):** Any liquefied hydrocarbon gas obtained as a by-product in petroleum refining or natural gas production.

~~210~~ **211** **LOCATION:** Any single site at a building, structure, facility, or installation.

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

213 **NATURAL GAS:** A naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the Earth's surface, of which the principal constituent is methane.

~~211~~ **214** **NON-EMERGENCY ENGINE:** A stationary RICE that is ~~dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power~~ not an emergency engine.

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

~~212.1 Equipment that meets the following requirements 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.~~

~~212.2 The following are not nonroad IC engines:~~

~~a. An engine used to propel a motor vehicle, an aircraft, or 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.~~

~~213~~ **215** **PART~~S(S)~~ PER MILLION, ~~DRY~~ BY VOLUME DRY (PPM~~D~~VD):** A unit of proportion used to express concentration that is corrected to a dry basis. ~~A unit of proportion equal to 10^{-6} that is measured on a dry basis (minus water) at 15% oxygen.~~

~~214~~ **216** **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.

217 **RECONSTRUCTED:** Repairs, changes, or improvements to a stationary RICE where the fixed capital cost of the new and refurbished engine components exceeds 75% of the fixed capital cost of purchasing an entirely new engine with the same brake horsepower rating; or construction of an engine on a previously used engine block if the engine is constructed using all new components except for the engine block. For the purposes of this rule, the cost of installing emission controls (such as a diesel particulate filter, a three-way catalyst, or a selective catalytic reduction system) is not included when determining whether or not an engine has been reconstructed.

~~215~~ **218** **RICH-BURN ENGINE:** A spark-ignition engine that is not a lean-burn engine.

~~216~~ **219** **SPARK-IGNITION 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~~ **220 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.

~~218~~ **221 SULFUR OXIDES (SO_X):** Oxides of sulfur calculated as equivalent sulfur dioxide.

~~219~~ **222 ULTRA LOW SULFUR OIL ~~DIESEL~~:** Fuel oil containing less than or equal to 0.0015% sulfur by weight.

~~220~~ **223 WASTE DERIVED FUEL GAS:** A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, digester gas and landfill gas.

SECTION 300 – STANDARDS:

301 ~~LIMITATIONS FOR STATIONARY RICE –~~ **FUEL REQUIREMENTS:** An owner or operator of ~~an engine~~ a stationary RICE that meets the criteria listed in Section 102 of this rule shall comply with ~~either~~ one of the following:

301.1 ~~Use any fuel that contains no more than 0.0015% sulfur by weight, alone or in combination with other fuels.~~ Use ultra low sulfur oil, except as provided in Sections 301.1a or 301.1b of this rule.

a. Engines that are not subject to the 40 CFR 60 Subpart IIII or 40 CFR 63 Subpart ZZZZ may use existing low sulfur oil purchased (or otherwise obtained) prior to November 2, 2016 until depleted.

b. Engines that are subject to 40 CFR 60 Subpart IIII or 40 CFR 63 Subpart ZZZZ must also comply with the fuel requirements in the applicable subpart.

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.

301.3 Use gasoline that meets the sulfur standard of 80 ppm as a per-gallon cap.

301.4 Use natural gas, liquefied petroleum gas (LPG), or any alternative fuel that contains no more than 0.05% sulfur by weight, alone or in combination with other fuels.

302 ~~GOOD COMBUSTION PRACTICES/TUNING PROCEDURE~~ **MAINTENANCE REQUIREMENTS** ~~FOR STATIONARY RICE~~**:** An owner or operator of ~~an engine~~ a stationary RICE ~~that meets the criteria listed in Section 102 of this rule~~ shall ~~conduct preventative maintenance or tuning procedures as recommended by the engine manufacturer~~ maintain the stationary RICE in accordance with the manufacturer's written instructions or in accordance with the maintenance schedule provided by the manufacturer's authorized service provider ~~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 concentrations in the effluent stream after each adjustment is made; this may assist in determining that the proper adjustment has been made to minimize NO_x and CO emissions. A handheld monitor may be used by the Control Officer to determine~~

~~compliance with this section.~~ Alternatively, the owner or operator shall conduct preventative maintenance according to the following schedule, including ~~include~~ all of the following ~~in the~~ tuning procedures, 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.~~

302.1 The following maintenance procedures shall be completed no less frequently than every 300 hours of operation (for engines that operate 300 hours per year or more) or at least once every 12 months (for engines that operate less than 300 hours per year):

a. Clean the inlet air filter (if so equipped);

b. Change oil filter; and

c. Change the lubricating oil or conduct an oil analysis to determine Total Base Number, viscosity, and percent water content. The lubricating oil must be replaced within 2 business days after the analytical results are received if any of the following condemning limits are exceeded:

(1) Total Base Number is less than 30% of the Total Base Number of the oil when new;

(2) Viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or

(3) Percent water content (by volume) is greater than 0.5.

302.2 The following maintenance procedures shall be completed no less frequently than every 1,000 hours of operation (for engines that operate 1,000 hours per year or

more) or at least once every 12 months (for engines that operate less than 1,000 hours per year):

a. Check the inlet air filter and replace as necessary;

b. Check all fuel filters and clean as necessary (except cartridge type fuel filters);

c. Check cartridge type fuel filters and replace as necessary;

d. Check and adjust the intake and exhaust valves;

e. Check and adjust the spark plugs (if so equipped);

f. Check and adjust the spark timing and dwell or fuel injection timing (if adjustable); and

g. Check and adjust the carburetor mixture (if adjustable).

302.3 The following maintenance procedures shall be completed no less frequently than every 3,000 hours of operation (for engines that operate 3,000 hours per year or more) or at least once every 12 months (for engines that operate less than 3,000 hours per year):

a. Check spark plugs and ignition points, and replace as necessary (if so equipped);

b. Check coolant and change as necessary (if so equipped); and

c. Check the exhaust system and repair all leaks and/or restrictions.

303 LIMITATIONS FOR STATIONARY RICE – OPACITY: An owner or operator of ~~an engine~~ a stationary RICE ~~that meets the criteria in Section 102 of this rule~~ shall not discharge into the ambient air from any such engine any air contaminant, other than uncombined water, in excess of 20% opacity.

304 LIMITATIONS FOR NON-EMERGENCY ENGINES ~~250 RATED BHP OR GREATER~~**:** ~~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 or 304.2 of this rule.~~

304.1 ~~Engine~~ **Requirements for Non-Emergency** ~~Engines~~ **Compression-Ignition Engines that are not Located at a Major Source of NO_X:** ~~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 1 or Table 2 of this rule.~~ An owner or operator of a non-emergency compression-ignition engine that is rated above 250 bhp and is not located at a major source of NO_X shall comply with the engine requirements in Table 324-1, as applicable, depending on the date the engine was manufactured or reconstructed (whichever occurred later) and the rated brake horsepower of the engine:

TABLE 324-1 ~~COMPRESSION IGNITION ENGINES~~		
MANUFACTURED OR ~~MODIFIED~~ RECONSTRUCTED	**RATED BHP**	**ENGINE REQUIREMENTS***
Prior to October 22, 2003	250-399	770 ppmvd~~v~~ or 10 g/bhp-hr~~.~~ NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing ~~retard~~ delay
Prior to October 22, 2003	~~400 plus~~ More than 399	550 ppmvd~~v~~ or 7.2 g/bhp-hr~~.~~ NO_X or turbocharger with aftercooler/intercooler or 4-degree injection timing ~~retard~~ delay
On or after October 22, 2003 ~~but prior to July 11, 2005~~	~~>250~~ More than 250	530 ppmvd~~v~~ or 6.9 g/bhp-hr~~.~~ NO_X; ~~or turbocharger with aftercooler/intercooler or 4-degree injection timing retard;~~ 1,000 ppmvd~~v~~ CO; 0.40 g/bhp-hr PM

* ppmvd emission standards are corrected to 15% oxygen.

304.2 Requirements for Non-Emergency Spark-Ignition Engines that are not Located at a Major Source of NO_X: An owner or operator of a non-emergency spark-ignition engine that is rated above 250 bhp and is not located at a major source of NO_X shall comply with the engine requirements in Table 324-2, as applicable, depending on the date the engine was manufactured or reconstructed (whichever occurred later) and whether it is a lean-burn or rich-burn engine:

TABLE 324-2 ~~SPARK IGNITION ENGINES~~				
LEAN-BURN ENGINES				
MANUFACTURED OR ~~MODIFIED~~ RECONSTRUCTED	~~RATED BHP~~	~~OXIDES OF NITROGEN (~~**NO_X****~~)~~	~~VOLATILE ORGANIC COMPOUND (~~**VOC****~~)~~	~~CARBON MONOXIDE (~~**CO****~~)~~
Prior to October 22, 2003	~~>250~~	280 ppmvd~~v~~ or 4.0 g/bhp-hr or three-way catalyst*	800 ppmvd~~v~~ or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmvd~~v~~ or three-way catalyst*
On or after October 22, 2003 ~~but prior to June 12, 2006~~	~~>250~~	110 ppmvd~~v~~ or 1.5 g/bhp-hr	~~800 ppmdv or 5.0 g/bhp-hr~~ Not Applicable	4,500 ppmvd~~v~~
RICH-BURN ENGINES				

MANUFACTURED OR ~~MODIFIED~~ RECONSTRUCTED	~~RATED BHP~~	~~OXIDES OF NITROGEN (~~**NO_x**~~**~~)~~	~~VOLATILE ORGANIC COMPOUND (~~**VOC**~~**~~)~~	~~CARBON MONOXIDE (~~**CO**~~**~~)~~
Prior to October 22, 2003	~~>250~~	280 ppmvd~~v~~ or 4.0 g/bhp-hr or three-way catalyst*	800 ppmvd~~v~~ or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmvd~~v~~ or three-way catalyst*
On or after October 22, 2003 ~~but prior to June 12, 2006~~	~~>250~~	20 ppmvd~~v~~ or 0.30 g/bhp-hr ~~or three-way catalyst*~~	~~800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*~~ Not Applicable	4,500 ppmvd~~v~~ ~~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 le~~ast 50% control efficiency for VOC f~~or tho~~se engines fueled by gasoline.

** ppmvd emission standards are corrected to 15% oxygen.

304.3 Emission Limits for Non-Emergency Engines that are Located at a Major Source of NO_X: An owner or operator of a non-emergency engine that is rated above 50 bhp and is located at a major source of NO_X shall comply with the engine requirements in Table 324-3, as applicable, depending on the engine type:

TABLE 324-3

ENGINE TYPE	**NO_X***	**VOC***	**CO***	**PM**
Spark-Ignition Lean-Burn	110 ppmvd or 1.5 g/bhp-hr	800 ppmvd or 5.0 g/bhp-hr	4,500 ppmvd	Not Applicable
Spark-Ignition Rich-Burn	20 ppmvd or 0.30 g/bhp-hr	800 ppmvd or 5.0 g/bhp-hr	4,500 ppmvd	Not Applicable
Compression-Ignition	530 ppmvd or 6.9 g/bhp-hr	Not Applicable	1,000 ppmvd	0.40 g/bhp-hr

* ppmvd emission standards are corrected to 15% oxygen.

~~304.2 Federal Standards of Performance for Non-Emergency Engines: An owner or operator of an engine listed in Sections 304.2(a) or (b) of this rule shall comply with the federal standards of performance for compression-ignition engines set forth in 40 CFR Part 60, Subpart IIII or spark-ignition engines set forth in 40 CFR Part 60, Subpart JJJJ and in 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 pr7ovision 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.~~

~~a. 40 CFR Part 60, Subpart IIII applies to all of the following non-emergency compression-ignition engines:~~

(1) Any stationary compression-ignition IC engine that was ordered after July 11, 2005 and manufactured after April 1, 2006.

(2) Any stationary compression-ignition IC engine that was modified or reconstructed after July 11, 2005.

b. 40 CFR Part 60, Subpart JJJJ applies to the following non-emergency spark-ignition engine:

(1) Any stationary spark-ignition engine that was ordered after June 12, 2006 and manufactured on or after:

(a) July 1, 2007 for engines with a rated bhp greater than or equal to 500 (except lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350)

(b) January 1, 2008 for lean burn engines with a rated bhp greater than or equal to 500 and less than 1,350

(c) July 1, 2008 for engines with a rated bhp less than 500.

(2) Any stationary spark-ignition engine that was modified or reconstructed after June 12, 2006.

305 EFFICIENCY ALLOWANCE: Each emission limit expressed in Tables 324-1 or 324-2 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:

a. 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.

b. 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 **305** EQUIVALENT REPLACEMENT ENGINE OR **IDENTICAL REPLACEMENT ENGINE:** 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.

307 MODIFICATION TO A STATIONARY RICE: 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. The date of the modification shall be the trigger for when the modification is subject to the provisions of 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.

~~308~~ **306** **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~~,~~ and operate~~, and maintain~~ a non-resetting totalizing hour meter. If the non-resetting totalizing hour meter is found to be malfunctioning, ~~operation of the engine shall cease until corrective action(s) can be implemented or the function of the meter is restored~~ the owner or operator shall:

306.1 Record hours of operation daily until the function of the hour meter is restored; and

306.2 Restore the function of the hour meter within two weeks. Or, if it is not possible to restore the function of the hour meter within two weeks, the owner or operator shall notify the Control Officer in writing and provide a schedule for restoration of the function of the hour meter.

SECTION 400 – ADMINISTRATIVE REQUIREMENTS

401 **COMPLIANCE SCHEDULE-STATIONARY RICE BEING REMOVED FROM SERVICE:** 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 ~~November 2, 2017~~ June 23, 2022. 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 that is not equipped with a non-resetting totalizing hour meter on June 23, 2021, ~~subject to any provision of this rule, except for those engines~~ and is not being removed from service under Section 401 of this rule, shall install~~,~~ and operate~~, and maintain~~ a non-resetting totalizing hour meter on each such engine no later than ~~November 2, 2017~~ June 23, 2022.

403 **COMPLIANCE SCHEDULE-ENGINES AT A SOURCE THAT BECOMES A MAJOR SOURCE:** If a non-emergency engine is located at a source that becomes a major source of nitrogen oxides after June 23, 2021, the owner or operator shall demonstrate compliance with the emission limits in Table 324-3 within one year after the source becomes a major source of nitrogen oxides.

SECTION 500 – MONITORING AND RECORDS

501 **COMPLIANCE DETERMINATION:**

501.1 ~~Stationary RICE~~ **Non-Emergency Engines that are not Located at a Major Source of NO_X:** An owner or operator of a ~~stationary RICE~~ non-emergency engine which is subject to the requirements in Section 304.1 or 304.2 of this rule shall demonstrate compliance ~~with all of the~~ using one of the following methods, 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.~~ Provide documentation that the stationary RICE is certified by the manufacturer to

comply with emission limits in 40 CFR 60 Subpart IIII or 40 CFR 60 Subpart JJJJ that are more stringent than the applicable emission limits in Table 324-1 or 324-2 of this rule, and provide documentation that the engine is installed, operated, and maintained in accordance with the manufacturer's specifications.

b. ~~With Section 304.2 of this rule, by one of the following:~~ Conduct a performance test in accordance with Section 501.4 of this rule at least once every 5 years. The performance test shall demonstrate compliance with one of the following requirements:

(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.~~ The applicable emission limits in units of grams per brake horsepower-hour (g/bhp-hr); or

(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.~~ The applicable emission limits in units of ppmvd; or

(3) The three-way catalyst provides a minimum of 80% control efficiency for NO_X and CO for engines fueled with natural gas, propane or gasoline, and the three-way catalyst also provides a minimum of 50% control efficiency for VOC for engines fueled by gasoline.

c. ~~With 40 CFR Part 60.4213, for a stationary RICE with a displacement of greater than or equal to 30 liters per cylinder.~~ Provide documentation that the non-emergency compression-ignition engine was manufactured or reconstructed (whichever occurred later) prior to October 22, 2003 and provide documentation that the non-emergency compression-ignition engine is equipped with a turbocharger with an aftercooler/intercooler.

d. Provide documentation that the non-emergency compression-ignition engine was manufactured or reconstructed (whichever occurred later) prior to October 22, 2003 and:

(1) Provide documentation that the injection timing has been set at 4 degrees below the factory setting for the engine. Written verification of the factory set timing, along with documentation that the engine timing has been delayed by 4 degrees must be submitted; or

(2) Provide documentation that the injection timing has been set at 4 degrees below the manufacturer's standard timing of the engine. Written verification of the manufacturer's standard timing of the engine prior to tuning for NO_X control, along with documentation that the timing has been delayed by 4 degrees must be submitted; or

(3) Provide documentation that the injection timing has been set at 16 degrees below top dead center or less (if information regarding the manufacturer's standard timing or factory set timing is not available).

501.2 Non-Emergency Engines that are Located at a Major Source of Nitrogen Oxides: An owner or operator of a non-emergency engine which is subject to

emission limits in Section 304.3 of this rule shall demonstrate compliance by conducting a performance test in accordance with Section 501.4 of this rule at least once every 2 years. The performance test shall demonstrate compliance with the applicable emission limits in units of grams per brake horsepower-hour (g/bhp-hr) or ppmvd.

~~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 With 40 CFR Part 60.4213, for an engine family with a displacement of greater than or equal to 30 liters per cylinder.~~

501.3 **Representative Performance Testing:** An owner or operator may demonstrate compliance with the applicable emission limits or control efficiency requirements in Table 324-1, Table 324-2, or Table 324-3 of this rule by conducting representative performance testing in accordance with Section 501.4 of this rule, provided all of the following requirements are satisfied:

a. The engines are located at the same stationary source;

b. The engines were produced by the same manufacturer, have the same model number or other manufacturer's designation in common, and have the same rated capacity and operating specifications;

c. The engines are operated and maintained in a similar manner;

d. At least one engine or one third of the engines in the specified group, whichever is greater, are tested each time a performance test is required;

e. Each time a performance test is required, different engines are tested so that all engines in the specified group are tested before any engines in the representative group are retested; and

f. If emissions from any engine in the specified group exceed an applicable emission limit, or if the control efficiency for any pollutant controlled by a three-way catalyst is lower than the required control efficiency, the owner or operator shall demonstrate that each engine in the specified group is in compliance with the applicable limits by conducting a performance test on each engine in the specified group.

501.4 **Performance Test Conditions:** Performance tests shall be conducted using the test methods listed in Section 503 of this rule. Testing for stationary RICE shall be completed at either the maximum operating load or no less than 80% of the rated 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 rated bhp or under the typical duty cycle or typical operational mode of the engine. The result of the performance test shall be the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour.

~~501.3~~ **501.5** ~~Ultra Low Sulfur Diesel~~ **Fuel-Sulfur Verification:** ~~If the Control Officer requests documentation of the sulfur content of the fuel to demonstrate the 0.0015% limit, the~~ The owner or operator of an engine fueled with gasoline shall submit documentation that gasoline was purchased within the United States. The owner or operator of an engine fueled with diesel, natural gas, LPG, or an alternative fuel shall submit one of the following documents listing the accurate sulfur content of the fuel based on enforceable test methods as approved by the Administrator to determine the sulfur content:

a. Fuel receipts, or

b. Contract specifications, or

c. Pipeline meter tickets, or

d. Fuel supplier information, or

e. Purchase records, or

f. Test results of the fuel for sulfur content.

~~The items listed above must provide accurate sulfur content values or be based on enforceable test methods as approved by the Administrator to determine the sulfur content.~~

~~501.4~~ **501.6** **Waste Derived Fuel Gas - Sulfur Verification:** The owner or operator shall submit documentation ~~of the concentration~~ of the sulfur ~~level~~ content of the waste derived fuel gas to the Control Officer upon request. The sulfur content of gaseous fuels shall be determined by South Coast Air Quality Management District Method 307-91 Determination of Sulfur in a Gaseous Matrix.

~~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 Tables 1 or 2 of this rule. Testing for stationary RICE shall be completed under steady state conditions at either the maximum operating load or no less than 80% of the rated 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 rated bhp or under the typical duty cycle or typical operational mode of the engine.~~

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

502.1 ~~Records Required for a~~ **Stationary RICE List:** ~~An owner or operator of a stationary RICE, including emergency engines, non-emergency engines, and low usage non-emergency engines, shall keep a record that includes an initial one-time entry that lists~~ Maintain a list of stationary RICE that includes all of the following information for each stationary RICE: ~~the particular engine~~ combustion type (compression-ignition, or lean-burn spark-ignition, or ~~rich burn, lean burn~~ rich-burn spark-ignition); manufacturer; model designation, rated bhp, serial number, and ~~where the~~ the location of each engine ~~is located on the site~~ at the facility. If the equipment list associated with the current permit includes all of the required information for each stationary RICE located at the facility, this requirement may be fulfilled by keeping a complete copy of

the current permit, including the equipment list, in a readily accessible location at the facility where the engines are located, and by providing the equipment list to the Control Officer upon request.

502.2 ~~Monthly Records Required for Non-Emergency Engines~~ **Operation Records:** An owner or operator of a ~~non-emergency engine~~ stationary RICE shall maintain ~~a monthly record for non-emergency engines which shall include~~ records of the monthly and 12-month rolling total hours of operation for each stationary RICE. For emergency engines, the operation records shall also include:

a. ~~Hours of operation; and~~ Monthly and annual hours of operation for reliability related activities such as engine readiness, calibration, or maintenance, or to prevent the occurrence of an unsafe condition during electrical system maintenance; and

b. ~~Type of fuel used, and~~ The number of operating hours for emergency use and an explanation for the emergency use.

~~c. Documentation verifying compliance with sulfur fuel content.~~

502.3 ~~Annual Records Required for Non-Emergency Engines~~ **Maintenance Records:** An owner or operator of a ~~non-emergency engine~~ stationary RICE shall maintain ~~an annual record of the practices/procedures that are followed in order to comply with Section 302 (Good Combustion Practices/Tuning Procedures for Stationary RICE) of this rule~~ records of all stationary RICE maintenance (including the date when maintenance was performed and the maintenance procedures that were performed). If an owner or operator of a non-emergency engine demonstrates compliance with the requirements in Section 304.1 of this rule using the method specified in Section 501.1(d) of this rule, the maintenance record shall include documentation of the injection timing setting each time maintenance is performed on the stationary RICE. In addition, one of the following documents shall be available at all times at the facility where the stationary RICE is located:

a. The manufacturer's written instructions for operation and maintenance of each stationary RICE;

b. A written maintenance schedule provided by the manufacturer's authorized service provider; or

c. A written maintenance plan indicating which of the tuning procedures listed in Section 302 of this rule are applicable to each stationary RICE.

502.4 **Fuel Records:** ~~Required for an Emergency Engine or a Low Usage Non-Emergency Engine An owner or operator of an emergency engine or a low usage non-emergency 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~~ Maintain records of the type and amount of fuel purchased for use in the stationary RICE (e.g. receipts, pipeline tickets, or bills of lading); and

b. ~~Fuel type and sulfur content of fuel; and~~ Maintain records of the sulfur content of any fuel that is used in the stationary RICE, excluding gasoline. For gasoline, maintain records that the fuel was purchased in the United States.

~~c. Explanation for the use of the engine if it is used as an emergency engine.~~

502.5 **Manufacturer's Operation and Maintenance Instructions:** An owner or operator of an engine that is subject to the requirements of Section 302 of this rule shall keep the manufacturer's written instructions for operation and maintenance of the engine available at the facility where the engine is located at all times. If the manufacturer's written instructions are not available, the owner or operator shall keep a preventative maintenance plan, indicating which procedures in Section 302 of this rule are appropriate to the engine, available at the facility where the engine is located at all times.

502.6 **Nonroad Engine Records:** An owner or operator of a nonroad engine shall maintain the following records for each non-road engine:

a. Date that each engine is brought to the stationary source; and

b. For engines located at a stationary source greater than 14 consecutive days:

(1) Make, model, serial number, and rated capacity (bhp hours) of the engine; and

(2) Date of each instance in which the engine is moved from its existing location, and the reason why the engine was moved; and

(3) Fuel type and sulfur content of the fuel.

503 COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE: The following test methods are approved for use for the purpose of determining compliance with this rule. The test methods are incorporated by reference in Rule 360 and Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative ~~test methods as approved by the Administrator or other~~ EPA-approved test methods may be used upon written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department.

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 or 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~~ or 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~~ Dry Impinger Method for Determining 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~~form~~ Stationary Sources - Ion Chromatographic Method"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet ~~Spectrometry~~ Spectrophotometry Method"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline Permanganate/Colorimetric Method"), 7D ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline~~—~~-Permanganate/Ion Chromatographic Method"), and 7E ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer ~~Method"~~ Procedure"), (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 ASTM ~~D2622-98~~ D2622-05 ("Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry").

~~503.13 ASTM D2880-96 Standard Specification for Gas Turbine Fuel Oils~~

~~503.14~~ **503.13** ASTM D4294-02 or D4294-03 ("Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-Ray ~~Fluorescence Spectroscopy~~ Fluorescence Spectrometry").

~~503.15~~ **503.14** ASTM D5504-01 or D5504-08 ("Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence").

~~504.16~~ **503.15** South Coast Air Quality Management District Method ~~307-94~~ 307-91 ("Determination of Sulfur in a Gaseous Matrix"), revised 1994.