COUNTY NOTICES PURSUANT TO A.R.S. § 49-112

Because each county writes rules and regulations in its own unique style, County Notices published in the *Register* do not conform to the standards of the *Arizona Rulemaking Manual*. With the exception of minor formatting changes, the rules (including subsection labeling, spelling, grammar, and punctuation) are reproduced as submitted.

NOTICE OF PROPOSED RULEMAKING

MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS

RULE 323

FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL SOURCES

[M07-283]

PREAMBLE

1. Rule Affected — **Rulemaking Action**
Rule 323 — Amend

2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statutes: A.R.S. §§ 49-112(A) and 49-479

Implementing statutes: A.R.S. § 49-479

3. A list of all previous notices appearing in the Register addressing the proposed rule:

Notice of Rulemaking Docket Opening: 12 A.A.R. 4111, November 3, 2006

4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

Name: Patricia P. Nelson or Jo Crumbaker, Air Quality Department

Address: 1001 N. Central Avenue, Suite # 595
Phoenix, AZ 85004

Telephone: (602) 506-6709 or (602) 506-6709

Fax: (602) 506-6179

E-mail: pnelson@mail.maricopa.gov or jcrumbak@mail.maricopa.gov

5. An explanation of the rule, including the department's reasons for initiating the rule:

Since Maricopa County has amended Rule 100 (General Provisions and Definitions) on March 15, 2006, by adding a definition for nitrogen oxides, the County will also propose to amend Rule 323 by removing the definitions of nitrogen oxides (NOx), thus eliminating duplication of the terms. Another significant amendment to the rule is the listing of EPA Reference Method 202 separately from EPA Reference Method 5. Performance of Method 202 will aid in quantifying condensible particulate matter (PM) emissions for emission inventory purposes. Condensable PM contributes to ambient PM levels and significantly to ambient $PM_{2.5}$ levels. Even though the particulate standards in this rule apply to compliance testing using Method 5, testing results per Method 202 will be used by the County to categorize the source and for emission inventory purposes.

A third major amendment in the rule will be the omission of the exemption for agricultural combustion equipment. This omission was recommended by the Environmental Protection Agency and will be consistent with the removal of these exemptions in various rules throughout the United States. A fourth major amendment in the rule will be the permission to use waste derived fuel gas (landfill or digester gas) for combustion with up to 800 ppm of sulfur (0.08%). This proposed amendment is because there are some waste-to-energy projects in Maricopa County and the County does not want to discourage these environmental projects from being pursued. Landfill and digester gases have been found to be higher in sulfur content than other fuels and after researching levels of sulfur in landfill and digester gases, a decision was made to raise the sulfur concentration allowed in these particular fuels. Due to the inclusion of a limit for these gases, a new test method will be added to subsection 504.15 which tests for sulfur in these fuels.

Another amendment to the rule is the language that refers to exemptions in subsection 103.8 of Rule 323. The County will propose to amend the text to reflect the same language used in Rule 322(Power Plant Operations), subsection 103.1, stating that the exemption applies to "Combustion equipment associated with nuclear power plant operations." Other amendments to the rule will be the proposed deletion of subsections that have to do with compliance in Section 400. Since many of the compliance dates have already passed, Maricopa County will propose to remove these sections from Rule 323.

Maricopa County has also recently adopted new Appendix G in the Maricopa County Air Pollution Control Regulations. Appendix G contains all of the test methods incorporated by reference; therefore the County is proposing to amend language in Rule 323 Section 504 to reflect this.

Some minor administrative amendments are also being proposed in the rule, such as correcting section references, correcting usage of the term "heat input" in subsections 304.1 (b) and removing the "#" sign before the American Society of Test Methods (ASTM) standards listed in Section 500. In addition, subsection 501.2 will be amended to clarify record keeping requirements for Emergency Fuel Usage.

Section-by-Section Explanation for the Amended or Proposed Rule 323

Subsection 102.3 – This proposed amendment will remove the word "and" from the end of the sentence.

Subsection 103.2 **-** This proposed amendment will remove the exemption for agricultural equipment used in agricultural operations in the growing of crops or the raising of fowl or animals.

Subsection 103.7 – This proposed amendment will rephrase the exemption to "Combustion equipment associated with nuclear power plant operations" so that the phrase will match the wording in Rule 322 (Power Plant Operations).

Subsection 104.1 - This proposed amendment will exempt certain stationary gas turbines from new subsection 301.2.

Section 211 - This proposed amendment will remove the definition of nitrogen oxides from the rule since it was defined in amended Rule 100 that was adopted March 15, 2006.

Section 223 – This proposed amendment will add a definition of waste derived fuel gas.

Section 224 - This proposed amendment will add a parenthesis that was omitted in the text by mistake.

Subsection 301.1 – This proposed amendment will remove the term "heat input" from the emission limit for nitrogen oxides if using non-gaseous liquid fuels or liquid fuels because it was used incorrectly.

Subsection 301.2 - This proposed amendment will add text that mandates particulate matter testing by performance of EPA Method 202 along with EPA Method 5 for emission inventory purposes.

Subsection 301.3- This proposed amendment will amendment subsection 301.2 to 301.3 due to the addition of new text in subsection 301.2 and will add the words "for turbines" for clarity. The third sentence of this subsection will be removed and replaced with "One of the following procedures may be used"

Section 301.3b – This proposed amendment will delete the reference "301.2 a" and replace it with the correct reference "301.3a."

Section 303- This proposed amendment will remove the subsection number "303.1" since the text in subsection 303.2 will be deleted. Another proposed amendment to this section is the addition of text that allows waste derived fuel gas with a sulfur content of less than or equal to 800 ppm (0.08%) to be used by an owner or operator.

Subsection 303.2 – This proposed amendment will delete the text for using existing supplies of used fuel oil because the compliance date has already passed.

Subsection 304.1 (a) – This proposed amendment will add text to establish a time frame for establishing optimal baseline concentrations for NOx and CO concentrations within 90 days of the first usage of the combustion equipment. Another proposed amendment will be to list the need for NOx and CO testing <u>initially</u> followed by annual testing using a handheld monitor to test for NOx and CO emissions. The need for a tune up is reduced to those times when the equipment fails to meet the standards and not just annually whether the equipment meets the standards or not.

Subsection 304.1 (b) (1) – This proposed amendment will remove the term "heat input" from the emission limit for nitrogen oxides if using gaseous fuels because it was used incorrectly.

Subsection 304.1 (b) (2) - This proposed amendment will remove the term "heat input" from the emission limit for nitrogen oxides if using liquid fuel because it was used incorrectly.

Subsection 304.1(c) - This proposed amendment will add a new subsection and new text to describe the conditions for testing nitrogen oxides: "Dry measurement made at 15% oxygen for stationary gas turbines and 3% oxygen for all other combustion equipment applicable to this Rule." These conditions are the same for testing carbon monoxide.

Section 305 –This proposed amendment will clarify the need to meet the 400 ppmv standard for CO at all times and not just during steady state compliance testing.

Subsection 306.3 (d) - – This proposed amendment adds text stating that an owner or operator shall comply with the most recent O & M Plan on file at Maricopa County if revisions to the Plan that they submitted to the County have not yet been approved by the County.

Section 400 - This Section will now be marked "NOT APPLICABLE" due to removal of the compliance schedule because the dates have already passed.

Section 401- This Section will be deleted due to the fact that the compliance dates have already passed.

Subsection 401.1 - This proposed amendment will delete the text that lists the date of compliance for filing an Operations and Maintenance Plan because the date of March 2, 2004 has already passed.

Subsection 401.2 – This proposed amendment will delete the text for compliance with modifications to an ECS because the dates, March 2, 2004 and July 2, 2005, have already passed.

Subsection 401.3 – This proposed amendment will delete both the text concerning compliance with an ECS and the text for filing a schedule for installation of the ECS since both dates have already passed (March 2, 2004 and July 2, 2006).

Subsection 501.2- This proposed amendment will clarify the adopted rule text and also split the sentence into two parts for clarity.

Subsection 501.3 – This proposed amendment will change the reference to subsection 301.3 from subsection 301.2.

Section 502 – This proposed amendment will change the section number to 502 versus 501 which was an error.

Section 503 – This proposed amendment will change the section number from 503 from 502.

Subsection 503.1(a) – This proposed amendment will add a limit of 0.08% (800 ppm) of sulfur to waste derived fuel gas if the owner or operator chooses to use it as a combustion fuel.

Subsection 503.1 (c) – This proposed amendment will add text referencing the test methods to be used to perform the testing.

Section 504 – This first proposed amendment will change the word "adopted" to the word "incorporated." The second proposed amendment will insert the more recent version of 2004 for the reference to the Code of Federal Regulations (CFR) instead of the 2001 version of the code. The reference to the Environmental Services Department is no longer applicable because Air Quality is now its own department. Therefore another proposed amendment will list the new name of the Maricopa County Air Quality Department instead of the Environmental Services Department. Other proposed amendments will be the renumbering of the references to the American Society of Testing Materials. (Changing subsection 504.10 to 504.11, and changing subsection 504.13 to subsection 504.14.)

Subsection 504.5 –This proposed amendment will be to remove EPA reference test method 202 from this subsection along with the option of testing using Method 202.

Subsection 504.6 – This proposed amendment will add Method 202 to a separate subsection.

Subsection 504.11 – This proposed amendment will remove the symbol "#" from the ASTM Method.

Subsection 504.12 – This proposed amendment will remove the symbol "#" from the ASTM Method.

Subsection 504.13 - This proposed amendment will remove the symbol "#" from the ASTM Method.

Subsection 504.14 - This proposed amendment will remove the symbol "#" from the ASTM Method.

Subsection 504.15 – This proposed amendment will add another test method which tests for the amount of sulfur in natural gas and gaseous fuels.

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

Under A.R.S. § 49-112 (A), Maricopa County may adopt rules that are more stringent than or in addition to a provision of the state, provided that the rule is necessary to address a peculiar local condition; and if it is either 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; or if it is 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 is equivalent to federal statutes or regulations; and if any fee adopted under the rule will not exceed the reasonable costs of the county to issue and administer that permit program. Maricopa County is in compliance with A.R.S. § 49-112(A) in that Maricopa County proposes to adopt revisions to Rule 323 that are more stringent than a provision of the state in order to address a peculiar local condition, the designation of Maricopa County as a serious non-attainment area for ozone, carbon monoxide and particulate matter at 10 microns. Maricopa County is the only ozone non-attainment area in Arizona.

7. A reference to any study relevant to the rule that the agency reviewed and either proposes to rely on in its evaluation or justification for the rule, or proposes not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of the study and other supporting material:

None

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

Not applicable

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

The sources that may be affected by this proposed rule would be those industries where large boilers and turbines would be utilized for power and heat such as manufacturing, semiconductor, power plant operations, military bases, agriculture, hotels, hospitals and universities. The proposed amendments to the rule are all administrative in nature except for two proposed amendments. The proposed administrative changes that should not cause any increased cost to industry are the following: removal of the definition for nitrogen oxides in Section 216, removal of compliance dates that have already passed in Section 400, removal of the number (#) signs before the test methods listed in Subsections 503.12-503.1, and the addition of a new test method listed in Subsection 503.16 that may be used to test for sulfur.

There are two proposed amendments that are not administrative in nature that may cause a financial impact on stakeholders. One of the major issues is the deletion of the agricultural exemption in Subsection 103. Agricultural operations using boilers or cogeneration steam generating units greater than 10 MM Btu/hr, turbines equal to or greater than 2.9 MW, or indirect process heaters with a heat input greater than 10 MM Btu/hr. would be subject to the rule. The EPA suggested that Maricopa County remove the exemption for agriculture to reflect current trends in the country. This would seem to be financially burdensome for agricultural activities, but a review of the sources of agriculture in Maricopa County reflected that there are no operations that involve boilers or turbines of this size. Therefore there would be no cost to agricultural sources in Maricopa County.

The other amendment that would cause any financial impact on sources would be the inclusion of EPA Test Method 202 for testing $PM_{2.5}$ whenever a source test is used. There will be an estimated $500 to $700 fee to industry every time the source performs compliance testing (once per permit term which is typically every 5 years) because they will be performing EPA Reference Method # 202 in addition to EPA Reference Method # 5.

Small businesses more than likely would not be subject to this rule because of the boiler or turbine size required for the rule to be applicable. Even if a small business would use a boiler with a heat input greater than 10 MM Btu/hr., the proposed amendments to this rule would only require the expenditure of the $500 to $700 listed above for particulate testing per Method 202 in addition to Method 5 per Section 301.2.

There will be no economic impact on Maricopa County since the changes to this rule are administrative in nature. There are no other agencies that are directly affected by the proposed implementation of this rule, thus there will be no economic impact on any other agencies.

This preliminary economic statement (EIS) was developed to estimate the impact of proposed rule. This impact statement, comprised of potential costs and benefits, represents an estimate. Maricopa County solicits input from stakeholders that are small businesses and organizations on the administrative and other costs required for compliance with the proposed rulemaking, and any other information relevant to the economic, small business and consumer impact statement.

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

Name:	Patricia P. Nelson or Jo Crumbaker, Air Quality Department
Address:	1001 N. Central Avenue, Suite # 595 Phoenix, AZ 85004
Telephone:	(602) 506-6709 or (602) 506-6705
Fax:	(602) 506-6179
E-mail:	pnelson@mail.maricopa.gov or jcrumbak@mail.maricopa.gov

11. The time, place, and nature of the proceedings for the adoption, amendment, or repeal of the rule or, if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

Amended proposed Rule 323 was first reopened on October 7, 2006 along with two other combustion rules, Rules 322 and 324, for some minor administrative changes. Only one Notice of Final Rulemaking was published on December 9, 2005 for these three rules. An oral proceeding (a public hearing with the opportunity for formal comments on the record regarding the proposed rules and submittal of the rules to EPA as a revision to the State Implementation Plan) was held on January 12, 2006 at 9:00 a.m. at Maricopa County Air Quality Department, 5th Floor Conference Room #560, 1001 N. Central Avenue, Phoenix, Arizona 85004. There were no stakeholders present and the hearing record states that no public statement, comment declaration, or objection was received which would form the basis as prescribed under the statutes to prohibit the County from issuing the proposed rule.

Written comments were accepted from the date of the publication of the proposed rulemaking document (December 9, 2005) until the day after the oral proceeding (January 13, 2006) and there were no formal comments received. The rulemaking was then delayed due to a shift in project priorities and eventually was terminated because the year had passed since the proposed rules were first noticed (A.R.S. § 49-471.07). Maricopa County then proceeded to reopen these proposed rules separately in October of 2006. Since then, the County has held 2 workshops on the rule and has amended the proposed rule in accordance with both EPA and stakeholder comments. Since the rule has already been subjected to an oral proceeding and since the rule's amendments were not major in nature and the issues were well

debated and addressed with the stakeholders, the County has decided against scheduling another oral proceeding. If anyone desires for the County to hold an oral proceeding they may file a request to do so (A.R.S. § 49-471-06).

To schedule an oral proceeding on the proposed rulemaking, please contact the rulewriter, Patricia P. Nelson, at (602) 506-6709 or submit a written request to Patricia P. Nelson Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite #595, Phoenix, AZ 85004.

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

None

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

None

14. The full text of the rule follows:

REGULATION III - CONTROL OF AIR CONTAMINANTS

REGULATION 323

FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI) SOURCES

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Adopted 07/03/05

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 323

FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL (ICI) SOURCES

INDEX

SECTION 100 – GENERAL

101 PURPOSE: To limit the discharge of nitrogen oxides, sulfur oxides, carbon monoxide, and particulate matter emissions into the atmosphere from fuel burning combustion equipment at industrial and/or commercial and/or institutional (ICI) sources.

102 APPLICABILITY: This rule applies to any of the following types of ICI combustion equipment that burns either fossil fuels or alternative fuels:

102.1 Each steam generating unit that has a maximum design rated heat input capacity from fuels combusted in the generating unit of greater than 10 million (MM) Btu/hr (2.9 Megawatts (MW)).

102.2 Each stationary gas turbine with a heat input at peak load equal to or greater than 2.9 megawatts (MW).

102.3 Each cogeneration steam generating unit with a heat input of greater than 10 MMBtu/hr ~~and~~.

102.4 Each indirect-fired process heater with a heat input greater than 10 MMBtu/hr.

102.5 NSPS & NESHAP: In addition to this rule, facilities 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.

103 EXEMPTIONS: This rule shall not apply to the following types of equipment:

103.1 Incinerators, crematories, or burn-off ovens; or

~~**103.2** Combustion equipment used in agricultural operations in the growing of crops or the raising of fowl or animals; or~~

~~**103.3**~~**103.2** Dryers, cement and lime kilns; or

~~**103.4**~~**103.3** Direct-fired process heaters; or

~~**103.5**~~**103.4** Medical waste incinerators; or

~~**103.6**~~**103.5** Reciprocating internal combustion equipment; or

~~**103.7**~~**103.6** Combustion equipment used in power plant operations for the purpose of supplying greater than one third of the electricity to any utility power distribution system for sale; or

~~**103.8**~~**103.7** Combustion equipment ~~used for the generation of nuclear power~~ associated with nuclear power plant operations; or

~~**103.9**~~**103.8** Water heaters used for the sole purpose of heating hot water for comfort or for radiant heat.

104 PARTIAL EXEMPTIONS:

104.1 Stationary gas turbines listed in subsection 102.2 of this rule that are used for any of the following reasons shall be exempt from Sections 304, 305 and subsections 301.1, 301.2, 501.1 and 501.3 of this rule:

a. Used for firefighting; or
b. Used for flood control; or
c. Used at military training facilities other than a garrison facility; or
d. Engaged by manufacturers in research and the development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements; or
e. Fired with emergency fuel that is normally fired with natural gas, or
f. Testing, reliability, maintenance, training, and readiness purposes for a total of 36 hours per year per unit when firing any emergency fuel.

104.2 All steam generating units including cogeneration units and process heaters that are used for any of the following reasons shall be exempt from Sections 301, 304, 305 and subsections 501.1 and 501.3 of this rule:

a. Fired with an emergency fuel that is normally fired with natural gas or
b. Firing any emergency fuel for testing, reliability, and maintenance purposes up to a maximum total of 36 hrs. per unit per year.

SECTION 200 - DEFINITIONS: For the purpose of this rule, the following definitions shall apply. See Rule 100 (General Provisions and Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule.

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

202 **COGENERATION STEAM GENERATING UNIT –** A steam or hot water generating unit that simultaneously produces both electrical (or mechanical) and thermal energy (such as heat or steam) from the same primary energy source.

203 **CORRECTIVE ACTION PLAN (CAP) –** A methodical procedure that is used to evaluate and correct a turbine operational problem and that includes, at a minimum, improved preventative maintenance procedures, improved ECS operating practices, possible operational amendments, and progress reports.

204 **DISTILLATE OIL –** A petroleum fraction of fuel oil produced by distillation that complies with the specifications for fuel oil numbers 1 or 2, as defined by the American Society for Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils."

205 **EMERGENCY FUEL –** Fuel fired by a gas combustion unit, normally fueled by natural gas, only during circumstances of unforeseen disruption or interruption in the supply of natural gas to a unit that normally runs on natural gas. The inability to burn natural gas may be one of the following, but is not limited to natural gas emergency, natural gas curtailment, or a breakdown of the delivery system.

206 **EMISSION CONTROL SYSTEM (ECS) -** A system approved in writing by the Control Officer, designed and operated in accordance with good engineering practice to reduce emissions.

207 **FOSSIL FUEL** – Naturally occurring carbonaceous substances from the ground such as natural gas, petroleum, coal, and any form of solid, liquid or gaseous fuel derived from such material for the purpose of creating energy.

208 **HEAT INPUT –** Heat derived from the combustion of fuel not including the heat input from preheated combustion air, recirculated flue gases, or exhaust gases from other sources, such as gas turbines, internal combustion engines, and kilns.

209 **LOW SULFUR OIL –** Fuel oil containing less than or equal to 0.05% by weight of sulfur.

210 **NATURAL GAS CURTAILMENT** – A shortage in the supply of natural gas, due solely to limitations or restrictions in distribution pipelines by the utility supplying the gas and not due to the cost of natural gas.

~~**211** **NITROGEN OXIDES (NOx)** – Oxides of nitrogen calculated as equivalent nitrogen dioxide.~~

~~**212**~~**211** **OPACITY –** A condition of the ambient air, or any part thereof, in which an air contaminant partially or wholly obscures the view of an observer.

~~**213**~~**212** **PARTICULATE MATTER EMISSIONS -** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

~~**214**~~**213** **PEAK LOAD** - 100% of the manufacturer's design capacity of a gas turbine at 288 Kelvin, 60% relative humidity, and 101.3 kilopascals pressure (ISO standard day conditions).

~~**215**~~**214** **PROCESS HEATERS** – An enclosed combustion device that uses controlled flame to transfer heat to a process fluid or a process material that is not a fluid or to heat transfer material for use in a process unit (not

including the generation of steam). Process heaters may be either indirect or direct-fired, dependent upon whether the gases of combustion mix with and exhaust to the same stack or vent (direct-fired) with gases emanating from the process material or not (indirect-fired). Emissions from indirect-fired units consist entirely of products of combustion while emissions from direct-fired units are unique to the given process and may vary widely in any industrial process. A process heater is not an oven or kiln used for drying, curing, baking, cooking, calcining, or vitrifying.

~~216~~215 **RATED HEAT INPUT CAPACITY** - The heat input capacity in million Btu/hr. as specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified so that its maximum heat input is different than the heat input capacity on the nameplate (design heat capacity), the maximum heat input shall be considered as the rated heat input capacity.

~~217~~216 **REGENERATIVE CYCLE GAS TURBINE –** Any stationary gas turbine that recovers thermal energy from the exhaust gases and utilizes the thermal energy to preheat air prior to entering the combustor.

~~218~~217 **RESIDUAL OIL –** The heavier oils that remain after the distillate oils and lighter hydrocarbons are distilled off in refinery operations. This includes crude oil or fuel oil numbers 1 and 2 that have a nitrogen content greater than 0.05% by weight, and all fuel oil numbers 4, 5 and 6, as defined by the American Society of Testing and Materials in ASTM D396-01, "Standard Specification for Fuel Oils".

~~219~~218 **SIMPLE CYCLE GAS TURBINE –** Any stationary gas turbine that does not recover heat from the gas turbine exhaust gases to preheat the inlet combustion air to the gas turbine, or that does not recover heat from the gas turbine exhaust gases to heat water or generate steam.

~~220~~219 **STATIONARY GAS TURBINE –** Any simple cycle gas turbine or regenerative gas turbine that is not self-propelled or that is attached to a foundation.

~~221~~220 **STEAM GENERATING UNIT -** An external combustion unit or boiler fired by fossil fuel that is used to generate hot water or steam. The hot water or steam is then used as energy for driving another process or piece of equipment.

~~222~~221 **SULFUR OXIDES (SOx)-** The sum of the oxides of sulfur emitted from the flue gas from a combustion unit that are directly dependent upon the amount of sulfur in the fuel used.

~~223~~222 **UNCOMBINED WATER –** Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

223 **WASTE DERIVED FUEL GAS –** Any gaseous fuel that is generated from the biodegradation of solid or liquid waste including but not limited to, sewage sludge, digester gas, and landfill gas.

224 **WATER HEATER –** A closed vessel in which water is heated by combustion of fuel and water is either withdrawn for use external to the vessel (at pressures not exceeding 160 psi with all controls and devices preventing water temperatures from exceeding 210°F) or used for radiant heat. Water heaters are usually no larger than 1 MM Btu/hr as opposed to boilers, do not reach temperatures of 220°F and higher that boilers can reach, and are not manufactured to meet boiler codes.

SECTION 300 - STANDARDS

301 LIMITATIONS - PARTICULATE MATTER:

301.1 Limitation- Liquid Fuels: An owner or operator shall not discharge, cause or allow the discharge of particulate matter emissions, caused by combustion of non-gaseous liquid fuels or a blend of liquid fuels with other fuels in excess of 0.10 lbs. per MMBtu ~~heat input~~ from any combustion units listed in subsections 102.1, 102.3 and 102.4 with either a rated heat input capacity or heat input of greater than 100 MM Btu/hr.

301.2 Particulate Matter Testing: A backhalf analysis shall be performed, using Reference Method 202 referenced in subsection 504.6 of this rule, each time a compliance test for particulate matter emissions to meet the standards in subsection 301.1 of this rule is performed using Method 5. (The results of the Method 202 testing shall be used for emissions inventory purposes).

~~**301.2**~~ **301.3 Good Combustion Practices for Turbines:** An owner or operator of a stationary gas turbine listed in subsection 102.2 of this rule, regardless of fuel type or size, shall use operational practices recommended by the manufacturer and parametric monitoring that ensure good combustion control. ~~In lieu of a manufacturer's recommended procedure to ensure good combustion practices, one~~ One of the following procedures may be used:

a. Monitor the maximum temperature differential across the combustion burners or at locations around the back end of the turbine, dependent upon the particular unit, to ensure no more than a 100° F difference using a thermocouple. If a valid maximum temperature differential of

greater than 100° F is observed across the burners, investigation and corrective action shall be taken within three hours to either reduce the temperature difference to 100° F or less, or

b. If the manufacturer recommends that the maximum numerical temperature differential to ensure good combustion is a temperature that is greater than 100°F, then proof of this maximum alternate temperature shall be submitted to the Control Officer. The procedure to measure the maximum temperature differential listed above in subsection ~~301.2a~~301.3a shall then be followed using the alternate recommended maximum temperature differential after approval by the Control Officer.

c. If a repetitive pattern of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the manufacturer indicates that the turbine is not being operated in a manner consistent with good combustion practices, then the Control Officer may require the owner or operator to submit a Corrective Action Plan (CAP).

302 LIMITATIONS – OPACITY: No owner or operator shall discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity.

303 LIMITATIONS - SULFUR IN FUEL: ~~**303.1**~~ An owner or operator of any applicable equipment listed in Section 102 that burns liquid fuel oil or a mixture or blend of fuel oil with any other fuels shall use only low sulfur oil ~~with one exception:~~. An owner or operator using waste derived fuel gas shall use only waste derived fuel gas with a sulfur content less than or equal to 800 ppm (0.08%).

~~**303.2** Existing supplies in storage of the fuel with a sulfur content greater than 0.05% by weight may be used by the owner or operator until (insert 1.5 years after adoption of rule) January 2, 2005. This usage shall be reported to the Control Officer along with the dates of usage within 72 hrs. of usage in writing. In the case of continuous or recurring high sulfur fuel use, the notification requirements of this rule shall be satisfied if the source provides the required notification and includes in the notification an estimate of the time for which the high sulfur fuel will be used. High sulfur fuel use that occurs after the estimated time period as originally reported shall require additional notification pursuant to this subsection.~~

304 LIMITATIONS – NITROGEN OXIDES:

304.1 An owner or operator of any combustion equipment listed in Section 102 with a heat input of greater than 10 MMBtu/hr to 100 MMBtu/hr, except gas turbines, shall comply either with ~~(a) or (b) below:the~~ following procedure:

a. Establish initial optimal baseline concentrations for NOx and CO within 90 days of the first usage of the combustion equipment by testing the unit using EPA Test Method 7 and Method 10 for CO.~~utilizing the initial design burner specifications or manufacturer~~'s ~~recommendations to ensure good combustion practices.~~ Thereafter measure annually the NOx and CO emissions with a handheld monitor. If the unit does not meet the NOx and CO emissions limits listed in subsection 304.1(b) and Section 305 of this rule, then ~~Tune~~tune the unit annually in accordance with good combustion practices or a manufacturer's procedure, if applicable, that will include the following at a minimum:

(1) Inspect the burner system and clean and replace any components of the burner as necessary to minimize emissions of NOx and CO, and

(2) Inspect the burner chamber for areas of impingement and remove if necessary, and

(3) Inspect the flame pattern and make adjustments as necessary to optimize the flame pattern, and

(4) Inspect the system controlling the air-to-fuel ratio and ensure that it is correctly calibrated and functioning properly, and

(5) Measure the NOx and the CO concentration of the effluent stream after each adjustment was made with a handheld portable monitor to ensure optimal baseline concentrations are maintained. ~~or~~

b. Limit nitrogen oxide emissions to no more than the following amounts:

1. 155 ppm ~~heat input~~, calculated as nitrogen dioxide, when burning gaseous fuel. During steady state operations, this test result using EPA

Reference Method(s) 7 shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

2. 230 ppm ~~heat input~~, calculated as nitrogen dioxide, when burning liquid fuel. During steady state operations, this test result using EPA Reference Method(s) 7 shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample run time of one hour.

c. For simple gas turbines, the nitrogen oxides shall be measured dry and corrected to 15% oxygen. For all other combustion equipment, the nitrogen oxides shall be measured dry and corrected to 3% oxygen.

304. 2 An owner or operator of any combustion equipment, listed in Section 102 of this rule, with a heat input greater than 100 MMBtu/hr, shall:

a. Tune the equipment every 6 months with good combustion practices or a manufacturer's procedure that at a minimum includes the procedures listed in subsection 304.1a of this rule and

b. Meet the NOx emission limits as stated in subsection 304.1b of this rule.

305 LIMITATIONS – CARBON MONOXIDE: No owner or operator of any equipment listed in Section 102 of this rule with a heat input greater than 100 MM Btu/hr shall cause to be discharged into the atmosphere, carbon monoxide (CO), measured in excess of 400 ppmv at any time. ~~during steady state source testing.~~ This test result, using EPA Reference Method 10, shall be based upon the arithmetic mean of the results of three test runs and shall be measured during steady state compliance source testing. Each test run shall have a minimum sample time of one hour. For simple gas turbines, the CO shall be measured dry and corrected to 15% oxygen. For all other combustion equipment, the CO shall be measured dry and corrected to 3% oxygen.

306 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT:

306.1 Emission Control System Required: For affected operations which may exceed any of the applicable standards set forth in Sections 300 of this rule, an owner or operator may comply by installing and operating an emission control system (ECS).

306.2 Providing and Maintaining ECS Monitoring Devices: No owner or operator required to use an approved ECS pursuant to this rule shall do so without first providing, properly installing, operating, and maintaining in calibration and in good working order, devices for indicating temperatures, pressures, transfer rates, rates of flow, or other operating conditions necessary to determine if air pollution control equipment is functioning properly and is properly maintained as described in an approved O&M Plan.

306.3 Operation and Maintenance (O&M) Plan Required For ECS:

a. General Requirements: An owner or operator shall provide and maintain an O&M Plan for any ECS, any other emission processing equipment, and any ECS monitoring devices that are used pursuant to this rule or an air pollution permit.

b. Approval by Control Officer: An owner or operator shall submit to the Control Officer for approval the O&M Plans of each ECS and each ECS monitoring device that is used pursuant to this rule.

c. Initial Plans: An owner or operator that is required to have an O&M Plan pursuant to this rule shall comply with all O&M Plans that the owner or operator has submitted for approval, but which have not yet been approved, unless notified by the Control Officer in writing. Once the initial plan has been approved in writing by the Control Officer, an owner or operator shall comply with this approved plan.

d. Revisions to Plan: If revisions to the initial plan have been approved by the Control Officer in writing, an owner or operator shall comply with the revisions to the initial plan. If revisions to the plan have not yet been approved by the Control Officer in writing, then an owner or operator shall comply with the most recent O&M plan on file at Maricopa County Air Quality Department.

e. Control Officer Modifications to Plan: After discussion with the owner or operator, the Control Officer may modify the plan in writing prior to approval of the initial O&M plan. An owner or operator shall then comply with the plan that has been modified by the Control Officer.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

~~**401 COMPLIANCE SCHEDULE**~~

~~**401.1 Operation and Maintenance (O&M) Plan:** Any owner or operator employing an approved ECS on the effective date of this rule shall by (insert 8 mos. after rule is adopted) March 2, 2004 file an O&M Plan with the Control Officer in accordance with subsection 306.3 of this rule.~~

~~**401.2 Modifications to Existing ECS:** Any owner or operator required to modify their ECS equipment or system by either reconstructing or adding on new equipment for compliance with this rule shall by (insert 8 months after rule is adopted) March 2, 2004 file a schedule for the modification with the Control Officer. The plan shall show how the ECS is to be used to achieve full compliance and shall specify dates for completing increments of progress. Any and all ECS used to achieve such compliance shall be in operation by (insert 24 months date of adoption of rule) July 2, 2005.~~

~~**401.3 ECS Installation:** An owner or operator required to install a new ECS for compliance with this rule shall by (insert 8 months after rule is adopted) March 2, 2004 file a schedule for the installation with the Control Officer. The ECS shall be installed and in compliance by (36 months after adoption of the rule) July 2, 2006.~~

SECTION 500 - MONITORING AND RECORDS

501 RECORDKEEPING AND REPORTING: An owner or operator subject to this rule shall comply with the requirements set forth in this section. Any records and data required by this section shall be kept on site at all times in a consistent and complete manner and be made available without delay to the Control Officer or his designee upon request. Records shall consist of the following information:

501.1 Equipment Listed In Section 102: Type of fuel used, amount of fuel used, amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

501.2 Emergency Fuel Usage: ~~Type of emergency fuel used, dates and hours of operation using emergency fuel, nature of the emergency or purpose for the use of emergency fuel as stated in subsections 104.1 and 104.2 of this rule, and monthly totals for twelve-month log of hours of operation in the emergency mode.~~ Monthly records of: type of emergency fuel used, dates and hours of operation using emergency fuel, and nature of the emergency or purpose for the use of the emergency fuel as stated in subsections 104.1 and 104.2 of this rule. Yearly records of the twelve month log of hours of operation in the emergency mode.

501.3 Good Combustion Practice: Measurements of the temperature differential across the burners of turbines per subsection ~~301.2,~~ 301.3 of this rule, results of evaluation and corrective action taken to reduce the temperature differential or a finding that the temperature differential returned to the range listed in subsection ~~301.2~~ 301.3 (a) or (b) of this rule without any action by the owner or operator.

501.4 Tuning Procedure: Date that the procedure was performed on the particular unit and at a minimum: stack gas temperature, flame conditions, nature of the adjustment and results of the nitrogen oxide and carbon monoxide concentrations obtained by using a handheld monitor after each adjustment.

~~501~~502 RECORDS RETENTION: Copies of reports, logs and supporting documentation required by the Control Officer shall be retained for at least 5 years. Records and information required by this rule shall also be retained for at least 5 years.

~~502~~503 COMPLIANCE DETERMINATION:

503.1 Low Sulfur Oil Verification:

a. An owner or operator shall submit fuel oil receipts from the fuel supplier indicating the sulfur content of the fuel oil or verification that the fuel oil used meets the 0.05% sulfur limit or the 0.08% limit for landfill or digester gas if requested by the Control Officer, or

b. If fuel receipts are not available, an owner or operator shall submit a statement of certification or proof of the sulfur content of the fuel oil from the supplier to the Control Officer, or

c. An owner or operator may elect to test the fuel oil for sulfur content in lieu of certification from the fuel supplier or fuel receipts~~.~~ using one of the test methods incorporated by reference in subsections 504.11, 504.12, ~~504.13~~, 504.14 or 504.15 of this rule.

504 TEST METHODS ~~ADOPTED~~ INCORPORATED BY REFERENCE: The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, ~~2001~~ 2004), as listed below, are ~~adopted~~ incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. ~~These adoptions by reference include no future editions or amendments.~~ Copies of test methods referenced in this ~~section~~ Section are available at the Maricopa County ~~Environmental Services~~ Air Quality Department, 1001 N. Central Avenue, Phoenix, AZ 85004-1942. ~~The ASTM methods (1990, 1992, 1998 and 2000) are also adopted by reference.~~ When more than one test method as listed in subsections ~~504.10~~ 504.11, 504.12, ~~to~~ ~~504.13~~ 504.14, or 504.15 of this rule is permitted for the same determination, an exceedance of the limits established in this rule determined by any one of the applicable test methods constitutes a violation.

504.1 EPA Reference Methods 1 ("Sample and Velocity Traverses for Stationary Sources"), and 1 A ("Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts") (40 CFR 60, Appendix A).

504.2 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).

504.3 EPA Reference Methods 3 ("Gas Analysis for the Determination of Dry Molecular Weight"), 3A ("Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)"), 3B ("Gas Analysis for the Determination of Emission Rate Correction Factor of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

504.4 EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

504.5 EPA Reference Method 5 ("Determination of Particulate Emissions from Stationary Sources") (40 CFR 60, Appendix A) ~~and possibly, if requested by the Control Officer, EPA Reference Method 202 ("Determination of Condensable Particulate Emissions from Stationary Sources") (40 CFR 51, Appendix M)~~.

504.6 EPA Reference Method 202 ("Determination of Condensable Particulate Emissions from Stationary Sources") (40 CFR 51, Appendix M).

~~504.6~~504.7 EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions form Stationary Sources"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate Colorimetric Method"), 7D ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline – Permanganate Chromatographic Method"), and 7E ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Method"), (40 CFR 60, Appendix A).

~~504.7~~504.8 EPA Reference Method 9, ("Visual Determination of the Opacity of Emissions from Stationary Sources") (40 CFR 60, Appendix A).

~~504.8~~ 504.9 EPA Reference Method 10, ("Determination of Carbon Monoxide from Stationary Sources") (40 CFR 60, Appendix A).

~~504.9~~ 504.10 EPA Reference Method 20, ("Determination of Nitrogen Oxides, Sulfur Dioxide, and Diluent Emissions From Stationary Gas Turbines") (40 CFR 60, Appendix A).

~~504.10~~504.11 American Society of Testing Materials, ASTM Method ~~#~~ D2622-92 or 98, ("Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry"), 1992 or 1998.

~~504.11~~504.12 American Society of Testing Materials, ASTM Method ~~#~~ D1266-98, ("Standard Test Method for Sulfur in Petroleum Products (Lamp Method)"), 1998.

~~504.12~~504.13 American Society of Testing Materials, ASTM Method ~~#~~ D2880-00, ("Standard Specification for Gas Turbine Fuel Oils"), 2000.

~~**504.13**~~**504.14** American Society of Testing Materials, ASTM Method ~~#~~ D4294-90 or 98, ("Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy- Dispersive X-ray Fluorescence Spectrometry"), 1990 or 1998.

504.15 American Society of Testing Materials, ASTM Method D5504-01, ("Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence"), 2006.

NOTICE OF PROPOSED RULEMAKING

MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS

RULE 324

STATIONARY INTERNAL COMBUSTION ENGINES

[M07-282]

PREAMBLE

1. Rule Affected — **Rulemaking Action**
Rule 324 — Amend

2. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

Authorizing statutes: A.R.S. §§ 49-112(A), 49-479 and 49-471.07(C)

Implementing statutes: A.R.S. § 49-479

3. A list of all previous notices appearing in the register addressing the proposed rule:

Notice of Rulemaking Docket Opening: 12 A.A.R. 4111, November 3, 2006

4. The name and address of agency personnel with whom persons may communicate regarding the rulemaking:

Name: Patricia P. Nelson or Jo Crumbaker, Air Quality Department

Address: 1001 N. Central Avenue, Suite # 595
Phoenix, AZ 85004

Telephone: (602) 506-6709 or (602) 506-6709

Fax: (602) 506-6179

E-mail: pnelson@mail.maricopa.gov or jcrumbak@mail.maricopa.gov

5. An explanation of the rule, including the agency's reasons for initiating the rules:

Since Maricopa County has amended Rule 100 (General Provisions and Definitions) on March 15, 2006 by adding a definition for nitrogen oxides, the County will also propose to amend Rule 324 by removing the definitions of nitrogen oxides (NOx) in Section 200 of Rule 324, thus eliminating duplication of the terms.

One significant amendment will be the deletion of the broad exemption for agricultural equipment in Rule 324. This omission was recommended by the Environmental Protection Agency and will be consistent with the removal of these exemptions in various rules throughout the United States. Another significant amendment will be the removal of Control Officer discretion in using fuels that are higher than 0.05% sulfur content in Section 301.2 of Rule 324 and the proposed amendment to limit the sulfur concentration to 800 ppm for landfill and digester gases.

The addition of text to Rule 324 in Subsection 207.3 and 207.4 regarding replacement engines will be another significant change. The new text will state that with every percentage point increase of the rated brake horsepower 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. This proposed amendment was prompted by the Environmental Protection Agency (EPA). Also a limit of 500 hours will be added to the text in Section 205 further defining emergency engines.

Another amendment to the rule is the listing of EPA Reference Method 202 separately from EPA Reference Method 5 in Section 500 of Rule 324. Performance of Method 202 will aid in quantifying condensible particulate matter emissions for emission inventory purposes. Condensable PM contributes to ambient PM levels and significantly to ambient $PM_{2.5}$ levels. Even though the particulate matter standards in these rules apply to compliance testing using Method 5, testing results per Method 202 will be used by the County to categorize the source and also used for emission inventory purposes.

Some minor administrative changes are also being proposed in the rule such as correcting section references and the removal of the "#" sign before the American Society of Test Methods (ASTM) standards listed in each rule. Another

proposed amendment to the rule is the proposed deletion of subsections that have to do with compliance in Section 400. Since many of the compliance dates have already passed, Maricopa County is proposing to remove these sections from the rule. The County is also proposing to amend the language in subsection 502.4 to state that a monthly rolling 12 month total record of hours of operation shall be maintained by the owner or operator as well as records of the fuel type and the sulfur content of the fuel.

Section-by-Section Explanation for the Amended Rule

Rule 324

Section 101 - This proposed amendment will change the language of the section to exclude the last statement since stationary internal combustion engines used in cogeneration are addressed in Section 102.

Section 102 - This proposed amendment will clarify the text by removing the word" including" and placing the word 'or" in its place since some stakeholders stated that the text as written was confusing.

Subsection 103.3 - This proposed amendment will delete the agricultural exemption.

Section 205 - This proposed amendment will add the maximum number of hours (500) that an emergency engine shall be allowed to operate.

Subsection 207.3 - This proposed amendment will add text to state that for every percentage point increase of the rated brake horsepower, 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.

Section 216 - This proposed amendment will remove the definition of nitrogen oxides from the rule since it will be defined in amended Rule 100 that is scheduled to be adopted in March of 2006.

Subsection 301.1 - This proposed amendment will remove text referring to the usage of stored fuel oil since the compliance dates of October 23, 2003 and April 22, 2005 have already passed.

Subsection 301.2 - This proposed amendment will add a sulfur limit of 800 ppm for the use of waste derived fuel gas in internal combustion engines.

Section 304 Table 3 - This proposed amendment will add text (see asterisk under Table 3) following Table 3 which refers to performance of Method 202 for emission inventory purposes.

Subsection 401.1 - This proposed amendment will delete text referring to a compliance date of April 22, 2004 because the date has already passed.

Subsection 401.2 - This proposed amendment will delete the text because the compliance dates have already passed.

Subsection 401.3 - This proposed amendment will be the renumbering of subsection 401.3 to section 401 because the text in subsections 401.1 and 401.2 will be removed. Another proposed change in this subsection is to remove the word "and" before "shall be operating in full compliance by October 22, 2007" because it was an error.

Subsection 502.2 - This proposed amendment will change the incorrect reference of subsection 103 to the correct reference of subsection 301. 1.

Subsection 502.4 - This proposed amendment will be to remove the word annual from the recordkeeping section and to replace it with text in subsection 502.4(1) and (2) that clarify the recordkeeping section.

Section 503 - One of the proposed amendments will be to replace the 2001 date of the Code of the Federal Register with a 2004 date in order to update the reference. The second proposed amendment adds text that references Appendix G of the Maricopa County Rules and Regulations wherein the test methods are incorporated by reference. The third proposed amendment will list the new name of the Maricopa County Air Quality Department instead of the Environmental Services Department. The reference to the Environmental Services Department is no longer applicable because Air Quality is now its own department. Another change entails the renumbering of the references to the American Society of Testing Materials methods in the last sentence, subsection503.11 to 503.12 due to the separation of the methods listed in subsection 503.5.

Section 503.5 - This proposed amendment will delete the second sentence of the paragraph and place the text in a separate subsection numbered 503.6.

Section 503.6 - This proposed amendment will add the text to this subsection that will be deleted in subsection 503.5.

Subsection 503.11 - This proposed amendment will remove the symbol "#" from the ASTM Method and renumber the subsection due to addition of subsection 503.6 from subsection 503.10 to 503.11.

Subsection 503.12 - This proposed amendment will remove the symbol "#" from the ASTM Method and renumber the subsection due to addition of subsection 503.6 from subsection 503.11 to 503.12.

Subsection 503.13 - This proposed amendment will remove the symbol "#" from the ASTM Method and renumber the subsection due to addition of subsection 503.6 from subsection 503.12 to 503.13.

Subsection 503.14 - This proposed amendment will remove the symbol "#" from the ASTM Method and renumber the subsection due to addition of subsection 503.6 from subsection 503.13 to 503.14.

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

Under A.R.S. § 49-112(A), Maricopa County may adopt rules that are more stringent than or in addition to a provision of the state, provided that the rule is necessary to address a peculiar local condition; and if it is either 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; or if it is 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 is equivalent to federal statutes or regulations; and if any fee adopted under the rule will not exceed the reasonable costs of the county to issue and administer that permit program. Maricopa County is in compliance with A.R.S. § 49-112(A) in that Maricopa County proposes to adopt revisions to Rule 323 that are more stringent than a provision of the state in order to address a peculiar local condition, the designation of Maricopa County as a serious non-attainment area for ozone, carbon monoxide and particulate matter at 10 microns. Maricopa County is the only ozone non-attainment county in Arizona.

7. A reference to any study relevant to the rule that the department reviewed and either proposes to rely on in its evaluation or justification for the rule, or proposes not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of the study and other supporting material:

Not applicable

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

Not applicable

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

The sources that may be affected by this proposed rule would be those industries where engines would be utilized for power such as manufacturing, semiconductor, power plant operations, military bases, and agriculture. The proposed amendments to the rule are all administrative in nature except for two proposed amendments. The proposed administrative changes that should not cause any increased cost to industry are the following: a limit on the number of hours than an emergency generator shall operate in Section 205, removal of the definition for nitrogen oxides in Section 216, removal of compliance dates that have already passed in Section 400, removal of the number (#) signs before the test methods listed in Subsections 503.12-503.15 and the addition of a new test method listed in Subsection 503.16 that may be used to test for sulfur.

There are two proposed amendments that are not administrative in nature that may cause a financial impact on stakeholders. One of the major issues is the deletion of the agricultural exemption in Subsection 103. Agricultural operations using engines with a brake horsepower of 250 bhp or a combination of IC engines greater than 50 bhp that add up to 250 bhp would be subject to the rule. The EPA suggested that Maricopa County remove the exemption for agriculture to reflect current trends in the country. This would seem to be financially burdensome for agricultural activities, but a review of the sources of agriculture in Maricopa County reflected that there are no operations that involve engines of this size. Therefore there would be no cost to agricultural sources in Maricopa County.

The other amendment that would cause any financial impact on sources would be the inclusion of EPA Test Method 202 for testing particulate matter at 2.5 microns whenever a source test is used. There will be an estimated $500 to $700 fee to industry every time the source performs compliance testing because they will be performing EPA Reference Method # 202 in addition to EPA Reference Method # 5.

Small businesses more than likely would not be subject to this rule because of the engine size required for the rule to be applicable. Operations at small businesses using engines with a brake horsepower of 250 bhp or a combination of IC engines greater than 50 bhp that add up to 250 bhp would be subject to the rule and this is not likely to occur at a small business. Even if a small business would use an engine greater than 250 bhp, the proposed amendments to this rule would only require the expenditure of the $500 to $700 listed above for particulate testing per Method 202 in addition to Method 5 per Section 304.

There will be no economic impact on Maricopa County since the changes to this rule are administrative in nature. There are no other agencies that are directly affected by the proposed implementation of this rule thus there will be no economic impact on any other agencies.

This preliminary economic statement (EIS) was developed to estimate the impact of proposed rule. This impact statement, comprised of potential costs and benefits, represents an estimate. Maricopa County solicits input from stakeholders that are small businesses and organizations on the administrative and other costs required for compliance with the proposed rulemaking, and any other information relevant to the economic, small business and consumer impact statement.

10. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:

Name: Patricia P. Nelson or Jo Crumbaker, Air Quality Department

Address: 1001 N. Central Avenue, Suite # 595
Phoenix, AZ 85004

Telephone: (602) 506-6709 or (602) 506-6709
Fax: (602) 506-6179
E-mail: pnelson@mail.maricopa.gov or jcrumbak@mail.maricopa.gov

11. The time, place, and nature of the proceedings for the adoption, amendment, or repeal of the rules or, if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rules:

Amended proposed Rule 324 was first reopened on October 7, 2006 along with two other combustion rules, Rules 322 and 323, for some minor administrative changes. Only one Notice of Final Rulemaking was published on December 9, 2005 for these three rules. An oral proceeding (a public hearing with the opportunity for formal comments on the record regarding the proposed rules and submittal of the rules to EPA as a revision to the State Implementation Plan) was held on January 12, 2006 at 9:00 a.m. at Maricopa County Air Quality Department, 5th Floor Conference Room #560, 1001 N. Central Avenue, Phoenix, Arizona 85004. There were no stakeholders present and the hearing record states that no public statement, comment declaration, or objection was received which would form the basis as prescribed under the statutes to prohibit the County from issuing the proposed rule.

Written comments were accepted from the date of the publication of the proposed rulemaking document (December 9, 2005) until the day after the oral proceeding (January 13, 2006) and there were no formal comments received. The rulemaking was then delayed due to a shift in project priorities and eventually was terminated because the year had passed since the proposed rules were first noticed (A.R.S. § 49-471.07). Maricopa County then proceeded to reopen these proposed rules separately in October of 2006. Since then, the County has held two workshops on the rule and has amended the proposed rule in accordance with both EPA and stakeholder comments. Since the rule has already been subjected to an oral proceeding and since the rule's amendments were not major in nature and the issues were well debated and addressed with the stakeholders, the County has decided against scheduling another oral proceeding. If anyone desires for the County to hold an oral proceeding they may file a request to do so (A.R.S. § 49-471-06).

To schedule an oral proceeding on the proposed rulemaking, please contact the rulewriter, Patricia P. Nelson, at (602) 506-6709 or submit a written request to Patricia P. Nelson Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite #595, Phoenix, AZ 85004.

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

None

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

None

14. The full text of the rule is as follows:

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 324

STATIONARY INTERNAL COMBUSTION (IC) ENGINES

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Adopted 10/23/03

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 324

STATIONARY INTERNAL COMBUSTION (IC) ENGINES

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 internal combustion (IC) engines~~, including stationary IC engines used in cogeneration~~.

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

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

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

103.2 An IC engine operated as a non-road engine,

~~**103.3** An IC engine used directly and exclusively by the owner and/or operator for agricultural operations necessary for the growing of crops or the raising of fowl or animals,~~

~~103.4~~**103.3** A laboratory IC engine used directly and exclusively for engine research including engine development, and subsequent engine performance verification for the purpose of either engine emission control techniques or engine efficiency improvements,

~~103.5~~**103.4** A prime engine when it is operated for purposes of performance verification and testing by the owner or operator or by a manufacturer or distributor of such equipment for the purpose of performance verification and testing at the production facility,

~~103.6~~**103.5** A compressed gas IC engine used for solar testing and research programs,

~~103.7~~**103.6** An IC engine operated as an emergency generator or other equipment at a nuclear power plant that must run for safety reasons and/or operational tests to meet requirements imposed by the Nuclear Regulatory Commission,

~~103.8~~**103.7** An IC engine test stand used for evaluating engine performance, and

~~103.9~~**103.8** An IC engine used for training purposes as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine.

104 PARTIAL EXEMPTIONS FOR EMERGENCY ENGINES: Any stationary IC engine operated as an emergency engine for any of the following reasons is exempt from all of the provisions of this rule, except for the provisions in Sections 301, 303, and subsections 502.1 and 502.4:

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

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

104.3 Used for lighting airport runways;

104.4 Used for sewage overflow mitigation and/or prevention;

104.5 Used for reliability-related activities such as engine readiness, calibration, or maintenance or to prevent the occurrence of an unsafe condition during electrical system maintenance, as long as the total number of hours of the operation does not exceed 100 hours per calendar year per engine;

104.6 Used as the prime engine when the prime engine has failed, but only for such time as is needed to repair the prime engine; or

104.7 Used to operate standby emergency water pumps for fire control that activate when sensors detect low water pressure.

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

105.1 Each engine rated at or below 1000 bhp that operates less than 200 hours in any 12-consecutive-month period, and

105.2 Each engine rated above 1000 bhp that operates less than 100 hours in any 12-consecutive month period.

SECTION 200 – DEFINITIONS: For the purpose of this rule, the following definitions shall apply. See Rule 100 (General Provisions And Definitions) of these rules for definitions of terms that are used but not specifically defined in this rule.

201 AFTERCOOLER/INTERCOOLER– A system that cools the engine intake air or air/fuel mixture after the air exits the turbocharger and prior to the introduction into the cylinder, thereby lowering NOx emissions.

202 COGENERATION UNIT– Internal combustion engine unit that burns fuel to simultaneously produce electricity and heat in a single thermodynamic process and is usually located in close proximity to the equipment requiring the heat energy.

203 COMPRESSION - IGNITION ENGINE – A reciprocating internal combustion engine with operating characteristics wherein the principal mechanism of igniting the fuel and air mixture in the cylinders is the compression of air in the cylinder until it is so hot that any fuel injected into the air or mixed with the air ignites. In this type of engine, a separate ignition source, such as a spark plug, is not used.

204 DIESEL ENGINE – A type of compression- ignited IC engine.

205 EMERGENCY ENGINE– Any stationary standby IC engine 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. 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 including the 100 hours listed in subsection 104.5.

206 **ENGINE FAMILY -** A group of engines with similar design features such as fuel type, cooling medium, method of air aspiration, combustion chamber design including cylinder bore and stroke, exhaust after treatment (if any), method of fuel admission, and method of control. These engines are also expected to have similar emission and operating characteristics throughout their useful lives.

207 **EQUIVALENT REPLACEMENT ENGINE -** An engine that is substituted for a stationary IC engine that is intended to perform the same or similar function as the original engine and where all of the following conditions exist:

207.1 The replacement engine results in equal or lower air contaminant emissions than the existing engine;

207.2 The replacement engine meets the emission control technology standards contained in either Table 1 or Table 2 of this rule, and

207.3 The rated bhp of the replacement engine does not exceed the rated bhp of the existing engine (or sum of existing engines) by more than 20 percent. For every percentage point increase of the rated brake horsepower, there shall be an associated decrease in emissions of nitrogen oxides, expressed as a mass per unit time, equal to or exceeding two percentage points.

208 **EXISTING ENGINE** - An engine that commenced operation prior to October 22, 2003 or an engine on which the construction or modification has commenced prior to October 22, 2003, including the contractual obligation to undertake and complete an order for an engine.

209 **IDENTICAL REPLACEMENT ENGINE -**An engine that is substituted for an existing stationary IC engine that has the same manufacturer type, model number, manufacturer's maximum rated capacity, bhp, and that is intended to perform the same or similar function as the original stationary IC engine that it replaces and has equal or lower emissions or meets the emission control technology requirements in Section 304, Table 1, 2, or 3.

210 **INTERNAL COMBUSTION (IC) ENGINE, NONROAD**

210.1 Any IC engine:

a. In or on a piece of equipment that is self-propelled or serves a dual purpose by both propelling itself and performing another function (such as garden tractors, off-highway mobile cranes and bulldozers);

b. In or on a piece of equipment that is intended to be propelled while performing its function (such as lawn mowers and string trimmers); or

c. That, by itself or in or on a piece of equipment, is portable or transportable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of transportability include but are not limited to, wheels, skids, carrying handles, dollies, trailers, or platforms.

210.2 An internal combustion engine is not a nonroad engine if:

a. The engine is used to propel a motor vehicle or a vehicle used solely for competition, or is subject to standards promulgated under Section 202 of the Clean Air Act;

b. The engine is regulated by a federal New Source Performance Standard promulgated under Section 111 of the Clean Air Act;

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

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

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

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

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

215 **NEW ENGINE** -An engine that is not an existing engine.

~~**216** **NITROGEN OXIDES (NOx) –** Oxides of nitrogen calculated as equivalent nitrogen dioxide.~~

~~**217**~~ **216** **PART(S) PER MILLION, DRY VOLUME (ppmdv) –** A unit of proportion equal to 10^{-6} that is measured on a dry basis (minus water) at 15% oxygen.

~~**218**~~**217** **PRIME ENGINE –** A principal or main use engine that is dedicated to a process or processes for the purpose of supplying primary mechanical or electrical power as opposed to an emergency engine.

~~**219**~~**218** **RATED BRAKE HORSEPOWER -** 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.

~~**220**~~**219** **RICH-BURN ENGINE -** Any spark-ignited IC engine that is not a lean-burn engine.

~~**221**~~**220** **SPARK-IGNITION ENGINE –** An IC engine 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 then ignites the air/fuel mixture.

~~**222**~~**221** **SULFUR OXIDES (SOx)** – Oxides of sulfur calculated as equivalent sulfur dioxide.

~~**223**~~**222** **WASTE DERIVED FUEL GAS** - Any gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, sewage sludge, digester gas, and landfill gas.

SECTION 300 – STANDARDS:

301 **LIMITATIONS FOR NEW AND EXISTING STATIONARY IC ENGINES:** An owner or operator of any engine that meets the criteria listed in Section 102 shall comply with either of the following:

301.1 Use any fuel that contains no more than 0.05% sulfur by weight, alone or in combination with other fuels.~~, with the following exception: Existing supplies in storage as of October 23, 2003 of any fuel containing greater than 0.05% of sulfur by weight may be used by the owner or operator until April 22, 2005. This usage shall be reported to the Control Officer along with the dates of usage.~~

301.2 ~~Obtain prior approval from the Control Officer as a provision in individual permits when using any waste derived fuel gas that contains sulfur in a concentration greater than 0.05% sulfur by weight.~~ Use any waste derived fuel gas that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.

302 **GOOD COMBUSTION PRACTICES / TUNING PROCEDURE:** An owner or operator shall conduct preventative maintenance or tuning procedures recommended by the engine manufacturer to ensure good combustion practices to minimize NOx emissions. A handheld monitor may be used if so desired by the owner or operator for measurement of NOx, CO, and concentrations in the effluent stream after each adjustment is made. This may assist in determining that the proper adjustment has been made to ensure NOx and CO minimization. In lieu of a manufacturer's procedure, a different procedure specified by any other maintenance guideline may be used as a default procedure. The tuning procedure shall include all of the following, if so equipped, and 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; and

302.7 Exhaust System: check for leaks and/or restrictions after 3,000 hours of operation or every year whichever occurs last.

303 **LIMITATIONS – OPACITY:** No owner or operator shall discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity.

304 **ADDITIONAL LIMITATIONS FOR PRIME ENGINES > 250 RATED bhp:** In addition to meeting the standards in Sections 301, 302, and 303, each existing or new prime engine greater than 250 rated bhp that is not listed in Sections 103, 104, or 105, shall comply with the emission limits or control technology requirements listed in Section 304, Table 1, 2, or 3, dependent upon the type of engine.

NOx EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING COMPRESSION-IGNITION ENGINES > 250 bhp
TABLE 1

RATED BRAKE HORSEPOWER (bhp)	ENGINE REQUIREMENTS
250-399	770 ppmdv or 10 g/bhp-hr.NOx or turbocharger with aftercooler/intercooler or 4-degree injection timing retard
400 plus	550 ppmdv or 7.2 g/bhp-hr.NOx or turbocharger with aftercooler/intercooler or 4-degree injection timing retard

EMISSION LIMITS OR CONTROL TECHNOLOGY REQUIREMENTS FOR EXISTING APPLICABLE SPARK – IGNITION ENGINES > 250 RATED bhp
TABLE 2

OXIDES OF NITROGEN (NO_X)	VOLATILE ORGANIC COMPOUND (VOC)	CARBON MONOXIDE (CO)
280 ppmdv or 4.0 b/bhp-hr or three-way catalyst*	800 ppmdv or 5.0 g/bhp-hr or three-way catalyst*	4,500 ppmdv or three-way catalyst*

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

EMISSION LIMITS FOR NEW SPARK OR COMPRESSION-IGNITION ENGINES > 250 bhp
TABLE 3

ENGINE TYPE	NOx	PM*	CO
LEAN BURN (SPARK)	110 ppmdv or 1.5 g/bhp-hr.	Not Applicable	4,500 ppmdv
RICH BURN (SPARK)	20 ppmdv or 0.30 g/bhp-hr.	Not Applicable	4,500 ppmdv
COMPRESSION	530 ppmdv or 6.9 g/bhp-hr.	0.40 g/bhp-hr	1,000 ppmdv

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

305 EFFICIENCY ALLOWANCE:

Each emission limit expressed in Tables 1, 2 or 3 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 EQUIVALENT OR IDENTICAL ENGINE REPLACEMENT: An equivalent or identical replacement engine that replaces an existing engine shall be treated as an existing engine for the purposes of compliance with this rule, unless the engine commenced operation or was constructed or modified after October 22, 2003, including the contractual obligation to undertake and complete an order for an engine and then it will be considered a new engine for purposes of meeting the standards for a new engine in this rule.

SECTION 400 - ADMINISTRATIVE REQUIREMENTS

401 COMPLIANCE SCHEDULE:

~~**401.1** An owner or operator of an existing or new stationary IC engine that becomes subject to any of the emission limits listed in Section 300 of this rule and that does not need modification or add-on controls to meet these emission standards shall be in compliance by April 22, 2004.~~

~~**401.2** An owner or operator of an existing stationary IC engine that must be rebuilt, modified, or retrofitted with add-on control equipment to meet emission limits listed in Section 300 of this rule shall submit a compliance plan for such unit by October 22, 2004 and shall be operating in full compliance by October 22, 2006.~~

401.3 An owner or operator of an existing stationary IC engine that must be replaced with a new engine to meet emission limits listed in Section 300 ~~and~~ shall be in compliance with the emission limits listed in Section 304, Table 3 by October 22, 2007.

SECTION 500 - MONITORING AND RECORDS

501 COMPLIANCE DETERMINATION

501.1 Existing Engines: Existing IC engines or engine families shall demonstrate compliance with Section 300 by recordkeeping according to Section 502. Emission testing using the applicable test methods listed in Section 503 shall be performed if the Control Officer requests.

501.2 Existing Engine Families at a Source: When testing an engine family at one source, the number of engines tested should be the greater of either one engine or one third of all identical engines in the group. If any of the representative engines exceed the emission limits, each engine in the group shall demonstrate compliance by emissions testing.

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

a. A statement from the manufacturer that the engine meets the most stringent emissions standards found in 40 CFR Part 89 or 90 applicable to the engine and its model year at the time of manufacture or

b. Performance of emission testing using the test methods listed in Section 503.

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

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

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

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

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

502.2 An owner or operator of a prime engine shall maintain a monthly record for prime engines which shall include:

1. Hours of operation;
2. Type of fuel used, and
3. Documentation verifying compliance with sulfur fuel content according to subsection ~~103~~ 301.1.

502.3 An owner or operator of a prime engine shall maintain an annual record of good combustion procedures according to Section 302.

502.4 An owner or operator of an emergency engine and a non-emergency low-usage engine that meets the exemptions listed in Sections 104 and 105 shall keep an ~~annual~~ engine record that includes:

1. Monthly rolling twelve month total ~~record~~ of ~~Hours~~ hours of operation, including hours of operation for testing, reliability and maintenance; and
2. Fuel type and sulfur content of fuel; and
3. Explanation for the use of the engine if it is used as an emergency engine.

503 **TEST METHODS INCORPORATED BY REFERENCE:** The Environmental Protection Agency (EPA) test methods as they exist in the Code of Federal Regulations (CFR) (July 1, ~~2002~~ 2004) and the American Society of Testing Materials International Methods as listed below, are ~~adopted~~ incorporated by reference in Appendix G of the Maricopa County Rules and Regulations. The ~~American Society of Testing Materials International (ASTM International) methods listed below are also adopted by reference, each having paired with it a specific date(s) that identifies the particular version/revision of the method that is adopted by reference. These adoptions by reference include no future editions or amendments~~. When more than one test method is permitted for the same determination, as listed in subsections ~~503.11,~~ 503.12, 503.13, ~~or~~ 503.14, or 503.15, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation. Copies of test methods referenced in this section of this rule are available at the Maricopa County Environmental Services Department, 1001 North Central Avenue, Suite 201, Phoenix, Arizona, 85004 -1942.

503.1 EPA Reference Methods 1 ("Sample and Velocity Traverses for Stationary Sources") and 1A ("Sample and Velocity Traverses for Stationary Sources with Small Stacks and Ducts") (40 CFR 60, Appendix A).

503.2 EPA Reference Methods 2 ("Determination of Stack Gas Velocity and Volumetric Flow Rate"), 2A ("Direct Measurement of Gas Volume Through Pipes and Small Ducts"), 2C ("Determination of Stack Gas Velocity and Volumetric Flow Rate in Small Stacks or Ducts"), and 2D ("Measurement of Gas Volumetric Flow Rates in Small Pipes and Ducts") (40 CFR 60, Appendix A).

503.3 EPA Reference Methods 3 ("Gas Analysis for the Determination of Dry Molecular Weight"), 3A ("Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure"), 3B ("Gas Analysis for the Determination of Emission Rate Correction Factor of Excess Air"), and 3C ("Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources") (40 CFR 60, Appendix A).

503.4 EPA Reference Method 4 ("Determination of Moisture Content in Stack Gases") (40 CFR 60, Appendix A).

503.5 EPA Reference Method 5 ("Determination of Particulate Emissions from Stationary Sources") (40 CFR 60, Appendix A) ~~and possibly, if requested by the Control Officer, EPA Reference Method 202 ("Determination of Condensable Particulate Emissions from Stationary Sources") (40 CFR 51, Appendix M).~~

503.6 EPA Reference Method 202 ("Determination of Condensable Particulate Emissions from Stationary Sources") (40 CFR 51, Appendix M).

~~**503.6**~~ **503.7** EPA Reference Methods 7 ("Determination of Nitrogen Oxide Emissions from Stationary Sources"), 7A ("Determination of Nitrogen Oxide Emissions form Stationary Sources - Ion chromatographic method"), 7B ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Ultraviolet Spectrometry"), 7C ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline-Permanganate Colorimetric Method"), 7D ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Alkaline – Permanganate Chromatographic Method"), and 7E ("Determination of Nitrogen Oxide Emissions from Stationary Sources – Instrumental Analyzer Method"), (40 CFR 60, Appendix A).

~~**503.7**~~**503.8** EPA Reference Method 9 ("Visual Determination of the Opacity of Emissions from Stationary Sources") (40 CFR 60, Appendix A).

~~**503.8**~~**503.9** EPA Reference Method 10 ("Determination of Carbon Monoxide from Stationary Sources") (40 CFR 60, Appendix A).

~~**503.9**~~**503.10** EPA Reference Method 18 ("Measurement of Gaseous Organic Compound Emissions by Gas Chromatography") (40 CFR 60, Appendix A).

~~**503.10**~~**503.11** EPA Reference Method 25A ("Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer") (40 CFR 60, Appendix A).

~~**503.11**~~**503.12** American Society of Testing Materials International, ASTM Method #D1266-98 ("Standard Test Method for Sulfur in Petroleum Products (Lamp Method)"), 1998.

~~**503.12**~~**503.13** American Society of Testing Materials International, ASTM Method #D2622-98 ("Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-Ray Fluorescence Spectrometry"), 1998.

~~**503.13**~~**503.14** American Society of Testing Materials International, ASTM Method #D2880-71, 78 or 96 ("Standard Specification for Gas Turbine Fuel Oils"), 1971 or 1978 or 1996.

~~**503.14**~~**503.15** American Society of Testing Materials International, ASTM Method #D4294-98 ("Standard Test Method for Sulfur in Petroleum Products by Energy-Dispersive X-Ray Fluoresence Spectroscopy") 1990 or 1998.

503.16 American Society of Testing Materials International, ASTM Method D5504-01("Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence), 2006.