

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

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NOTICE OF PROPOSED RULEMAKING
MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS
RULE 322
POWER PLANT OPERATIONS

[M07-285]

PREAMBLE

- | | |
|--------------------------------|---------------------------------|
| 1. <u>Rule Affected</u> | <u>Rulemaking Action</u> |
| Rule 322 | 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 Statute: A.R.S. § 49-479
- 3. List of all previous notices appearing in the Register addressing the proposed rule:**
Notice of Rulemaking Docket Opening: 12 A.A.R. 4410, November 3, 2006
- 4. Name and address of department personnel with whom persons may communicate regarding the rulemaking:**
Name: Patricia P. Nelson or Jo Crumbaker, Air Quality Department
Address: 1001 N. Central Ave., Ste. 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
- 5. 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 (NO_x), the County will propose to amend Rule 322, by removing the definition of NO_x in Rule 322, thus eliminating duplication of the terms in two different rules. The other significant amendment to the rule will be the listing of EPA Reference Method 202 separately from EPA Reference Method 5. Performance of Method 202 will aid in quantifying condensable 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.

Some minor administrative changes are also being proposed in the rule such as correcting section references, correcting usage of the term "heat input" in subsection 301.2 and the removal of the "#" sign before the American Society of Test Methods (ASTM) standards listed in Section 500. The definition of three hour rolling average will be changed to clock hour average rather than a 180 minute average since stakeholders commented that a continuous emission monitor may be down at times for calibration so that there may be a minute or two when one does not obtain data. Also the power plant permits contain language that deals with clock hours and for consistency it would be logical to place the same language in the rule as in the permit.

Section 301.3 will be changed for clarity at a stakeholder's request. The phrase "in lieu of manufacturer's recommended procedures" will be amended to state that either one of the temperature differential procedures in subsection 301.3 a or b may be used to prove good combustion practices. Section 305 will be clarified to reflect the fact that a 400 ppmv emission limit for carbon monoxide will be the standard at all times and not just at steady state compliance testing.

Other changes to the rule will be the proposed deletion of sections that have to do with compliance in Sections 303 and 400. Since many of the compliance dates have already passed, Maricopa County is proposing to remove these sections from the rule.

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County Notices Pursuant to A.R.S. § 49-112

Maricopa County has recently adopted Appendix G of the Maricopa County Air Pollution Control Regulations which now contains all of the test methods listed in the rules incorporated by reference; therefore the County is proposing to amend Section 504 to reference Appendix G.

Section-by-Section Explanation for the Amended or Proposed Rules

Section 104.1-This proposed amendment will delete the reference to subsection 401.4 because the subsection (401.4) will be deleted from the rule. Another proposed amendment will be the addition of a reference to subsection 301.2.

Section 104.2-This proposed amendment will delete the reference to subsection 401.4 because the subsection (401.4) will be deleted from the rule.

Section 104.3-This proposed amendment will delete the references to subsection 401.4 because the subsections will be deleted from the rule. Also another proposed change will be the removal of the exemption in this section pertaining to subsection 501.4. Recordkeeping for testing,

reliability, training and maintenance purposes is mandatory so that there is a method to track hours of emergency fuel use.

Section 221-This proposed amendment will remove the definition of nitrogen oxides from the rule since it was defined in amended Rule 100 that was adopted on March 15, 2006.

Section 231-This proposed amendment will add the numerical symbol for thirty days to the definition of thirty day rolling average.

Section 232-This proposed amendment will clarify the definition of three hour rolling average and use clock hours instead of minutes for compliance.

Subsection 301.1-This proposed amendment will remove the phrase "heat input" because it is used incorrectly. Another amendment will be to list Test Method 5 as the test method to be used

for performance testing.

Subsection 301.2-This proposed amendment will add text that mandates particulate matter testing by performance of Method 202 in addition to Method 5.

Subsection 301.3- This proposed amendment will change the subsection number from 301.2 to 301.3 because new text was added in subsection 301.2. Another amendment will be the addition of the words "for turbines" to the heading. Another amendment to this section will be the deletion of the phrase "in lieu of manufacturer's recommended procedures" and the placement of this information in subsection 301.3 (b) for clarity. And another amendment is addition of the phrase "as listed below" to the text.

Subsection 301.3(b)-This proposed amendment will change the subsection reference from 301.2a to 301.3a and will add text stating that an owner or operator may use the manufacture's recommended procedures if the temperature differential is different than the one stated in the proposed rule.

Subsection 301.4(c)-This proposed amendment will change the subsection reference from 301.3d to 301.4d since the subsection number has been changed.

Section 302.2 – This proposed amendment adds a dash to the word "start-up."

Section 303-This proposed amendment will remove the limitation on use of existing supplies of used fuel oil because the date for compliance with this Section (January 3, 2005) has already passed.

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

Subsection 304.2-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 304.3-This proposed amendment will add text to describe the conditions for testing nitrogen oxides: 15% oxygen for stationary gas turbines and 3% oxygen for electric utility steam generating units and cogeneration units. These conditions are the same for testing carbon monoxide.

Section 305 – This proposed amendment will be the addition of text to clarify that the test results of 400 ppmv of carbon monoxide shall not be exceeded at any time, not just during steady state compliance testing.

Subsection 306.2 – This proposed amendment adds the name Operations and Maintenance Plan to the acronym, O & M.

Subsection 306.3 (d) – This proposed amendment will add text stating that an owner or operator shall comply with the newest recent O and M plan on file at Maricopa County Air Quality Department.

Section 307 – This proposed amendment will add text to clarify emergency fuel use notification.

Section 400 – This proposed amendment will add the words "NOT APPLICABLE" to this section since the entire section will now be deleted. All of the dates listed in this section have already passed.

Subsection 401.1-This proposed amendment will remove the text that lists the date of compliance for filing and Operations and Maintenance plan with the Control Officer because the date of March 2, 2004 (8 months after the rule was adopted) has already passed

Subsection 401.2-This proposed amendment will remove the text that lists the date of compliance for modifying Emission Control Systems (ECS) with the Control Officer because the date of January 2, 2004 (6 months after the rule was adopted) has already passed. Another proposed change will remove the date of January 2, 2006 (30 months after the rule was adopted) by which ECS equipment to achieve compliance shall be in operation because this date has already passed.

Subsection 401.3-This proposed amendment will remove text that lists the date of compliance for submitting a schedule for installing and ECS because the date of March 2, 2004 (8 months after the rule was adopted) has already passed and will also remove the date of January 2, 2006 (30 months after the adoption of the rule) because this date has also passed.

Subsection 401.4-The first proposed amendment will remove the text that lists the date of compliance for submitting a schedule for installing or modifying and ECS because the date of March 2, 2004 has already passed.

Subsection 501.4 – This proposed amendment will clarify text describing the nature of the fuel switching records.

Subsection 501.6-These amendments will change the references from subsection 301.2 to subsection 301.3a, b, or c and from subsection 301.2 a or b to subsection 301.3 a or b.

Subsection 503.1 (c) This proposed amendment will add text describing the test methods that shall be used to test for sulfur content in fuel.

Section 504- The first proposed amendment of this section will amend the word “adopted” to the word “incorporated”. The second proposed amendment of this section will insert the more recent version of 2004 for the reference to the Code of Federal Regulations instead of the 2001 version of the Code. 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. The fifth proposed amendment will be the addition of language referencing the County’s new Appendix G of the Maricopa County Rules and Regulations which incorporates all test methods by reference. The sixth proposed amendment will change the subsection reference from 504.10 through 505.13 to subsection 504.11 through 504.14.

Subsection 504.5-This proposed amendment will remove EPA Reference Method 202 from this subsection.

Subsection 504.6-This proposed amendment will list EPA Reference Method 202 separately from the EPA Reference Method 5.

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.

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 322 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 agency reviewed and either proposes to rely on 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. Preliminary summary of the economic, small business, and consumer impact:

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County Notices Pursuant to A.R.S. § 49-112

The sources that may be affected by this proposed rule would be the two power plants operations in Maricopa County and their various sites. The proposed amendments to the rule are all administrative in nature except for one proposed amendment. These 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 503.12-503.15 and the addition of a new test method listed in Subsection 503.16 that may be used to test for sulfur. Other proposed amendments are the addition of text to Section 305 stating the conditions to be used for testing for nitrogen oxides, some changes to the definition of “ three hour rolling average” and propose amended language discussing the test methods incorporated by reference in Section 504.

There is only one proposed amendment that is not administrative in nature that may cause a financial impact on stakeholders and that is the mandate to perform additional particulate matter testing per EPA Test Method 202 in Subsection 301.2. 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 would not be subject to this rule because of the stated purpose in the proposed rule in Section 101 which only applies to power plant operations which are not small businesses.

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 Ave., Ste. 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. Time, place, and nature of the proceedings for the making, 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 322 was first reopened on October 7, 2006 along with two other combustion rules, Rules 323 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 Ave., Phoenix, AZ 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 Ave., Ste. 595, Phoenix, AZ. 85004. Please call (602) 372-1465 for special accommodations under the Americans Disabilities Act.

12. Other matters prescribed by statute that are applicable to the specific agency or to any specific rule 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 322
POWER PLANT OPERATIONS**

INDEX

SECTION 100-GENERAL

- 101 PURPOSE
- 102 APPLICABILITY
- 103 EXEMPTIONS
- 104 PARTIAL EXEMPTIONS

SECTION 200-DEFINITIONS

- 201 COGENERATION STEAM GENERATING UNIT
- 202 COMBINED CYCLE GAS TURBINE
- 203 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)
- 204 COOLING TOWERS
- 205 CORRECTIVE ACTION PLAN (CAP)
- 206 DISTILLATE OIL
- 207 DRIFT
- 208 DRIFT ELIMINATOR
- 209 DRIFT RATE
- 210 ELECTRIC UTILITY STATIONARY GAS TURBINE
- 211 ELECTRIC UTILITY STEAM GENERATING UNIT
- 212 EMERGENCY FUEL
- 213 EMISSION CONTROL SYSTEM (ECS)
- 214 FOSSIL FUEL
- 215 FUEL SWITCHING STARTUP PROCESS
- 216 HEAT INPUT
- 217 HIGHER HEATING VALUE (HHV)
- 218 LOW SULFUR OIL
- 219 LOWER HEATING VALUE (LHV)
- 220 NATURAL GAS CURTAILMENT
- ~~221 NITROGEN OXIDES (NO_x)~~
- ~~222~~221 OPACITY
- ~~223~~222 PARTICULATE MATTER EMISSIONS
- ~~224~~223 PEAK LOAD
- ~~225~~224 POWER PLANT OPERATION
- ~~226~~225 RATED HEAT INPUT CAPACITY
- ~~227~~226 REGENERATIVE CYCLE GAS TURBINE
- ~~228~~227 RESIDUAL OIL
- ~~229~~228 SIMPLE CYCLE GAS TURBINE
- ~~230~~229 STATIONARY GAS TURBINE
- ~~231~~230 SULFUR OXIDES (SO_x)
- ~~232~~231 THIRTY (30) DAY ROLLING AVERAGE
- ~~233~~232 THREE (3) HOUR ROLLING AVERAGE
- ~~234~~233 TOTAL DISSOLVED SOLIDS (TDS)
- ~~235~~234 UNCOMBINED WATER

SECTION 300 – STANDARDS

- 301 LIMITATIONS – PARTICULATE MATTER
- 302 LIMITATIONS – OPACITY
- 303 LIMITATIONS - SULFUR IN FUEL
- 304 LIMITATIONS –NITROGEN OXIDES
- 305 LIMITATIONS –CARBON MONOXIDE
- 306 REQUIREMENTS FOR AIR POLLUTION CONTROL EQUIPMENT AND ECS MONITORING EQUIPMENT
- 307 EMERGENCY FUEL USE NOTIFICATION

SECTION 400 – ADMINISTRATIVE REQUIREMENTS (NOT APPLICABLE)

- ~~401 COMPLIANCE SCHEDULE~~

SECTION 500 – MONITORING AND RECORDS

- 501 RECORDKEEPING AND REPORTING
- 502 RECORDS RETENTION
- 503 COMPLIANCE DETERMINATION
- 504 TEST METHODS ~~ADOPTED~~ INCORPORATED BY REFERENCE

Adopted 7/02/03

MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS

REGULATION III - CONTROL OF AIR CONTAMINANTS

RULE 322

POWER PLANT OPERATIONS

SECTION 100 - GENERAL

- 101 PURPOSE:** To limit the discharge of nitrogen oxides, sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from stationary fossil-fuel-fired equipment at existing power plants and existing cogeneration plants and to limit particulate matter emissions from cooling towers associated with this equipment.
- 102 APPLICABILITY:** This rule applies to any of the following types of equipment that burn fossil fuel for which construction commenced prior to May 10, 1996:
 - 102.1** Each electric utility steam generating unit or cogeneration steam generating unit used to generate electric power that has a heat input of equal to or greater than 100 million (MM) Btu/hour (29 megawatts (MW)).
 - 102.2** Each electric utility stationary gas turbine with a heat input at peak load equal to or greater than 10 MMBtu/hour (2.9 MW) based upon the lower heating value of the fuel.
 - 102.3** Each cooling tower associated with the type of equipment listed in subsections 102.1 and 102.2.
- 103 EXEMPTIONS:** This rule shall not apply to the following types of equipment:
 - 103.1** Combustion equipment associated with nuclear power plant operations; or
 - 103.2** Reciprocating internal combustion equipment.
- 104 PARTIAL EXEMPTIONS:**
 - 104.1** Stationary gas turbines that meet any of the following criteria listed below are exempt from Sections 304 and 305 and subsections 301.1, 301.2, 306.4, ~~401.4~~ and 501.4 of this rule:
 - a. Used for fire fighting; or
 - b. Used for flood control; or
 - c. Used in the military at military training facilities or military gas turbines for use in other than a garrison; or
 - d. Engaged by manufacturers in research and development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements.
 - 104.2** All equipment listed in Section 102 fired with an emergency fuel that is normally fired with natural gas is exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4, ~~401.4~~, and 501.4 of this rule.
 - 104.3** All equipment listed in Section 102 shall be exempt from Sections 304 and 305 and subsections 301.1, 301.2, and 306.4, ~~401.4~~ and 501.4 of this rule for 36 cumulative hrs. of firing emergency fuel per year, per unit for testing, reliability, training, and maintenance purposes.

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 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 and supplies more than one-third of its potential electric output to any utility power distribution system for sale.
- 202 COMBINED CYCLE GAS TURBINE** – A type of stationary gas turbine wherein heat from the turbine exhaust is recovered by a steam generating unit to make steam for use in a steam-electric turbine.
- 203 CONTINUOUS EMISSION MONITORING SYSTEM (CEMS)** – The total equipment required to sample and analyze emissions or process parameters such as opacity, nitrogen oxide, and oxygen or carbon dioxide, and to provide a permanent data record.
- 204 COOLING TOWERS** – Open water recirculating devices that use fans or natural draft to draw or force air through the device to cool water by evaporation and direct contact.
- 205 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 changes, and progress reports.
- 206 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.”
- 207 DRIFT** – Water droplets, bubbles, and particulate matter that escape from cooling tower stacks.
- 208 DRIFT ELIMINATOR** – Device used to remove drift from cooling tower exhaust air, thus reducing water loss by relying on rapid changes in velocity and direction of air-droplet mixtures by impaction on eliminator passage surfaces. A drift eliminator is not categorized as an emission control system but is an inherent part of the cooling tower's design requirements.
- 209 DRIFT RATE** – Percentage (%) of circulating water flow rate that passes through a drift eliminator on a cooling tower.
- 210 ELECTRIC UTILITY STATIONARY GAS TURBINE** – Any stationary gas turbine that is constructed for the purpose of supplying more than 1/3 of its potential electric output capacity to any utility power distribution system for sale. Both simple and combined cycle gas turbines are types of electric utility stationary gas turbines.
- 211 ELECTRIC UTILITY STEAM GENERATING UNIT** – Any steam electric generating unit that uses fossil fuel and is constructed for the purpose of supplying more than one-third of its potential electric output capacity and more than 25 MW electric output to any utility power distribution system for sale.
- 212 EMERGENCY FUEL** - Fuel fired only during circumstances such as natural gas emergency, natural gas curtailment, or breakdown of delivery system such as an unavoidable interruption of supply that makes it impossible to fire natural gas in the unit. Fuel is not considered emergency fuel if it is used to avoid either peak demand charges or high gas prices during on-peak price periods or due to a voluntary reduction in natural gas usage by the power company.
- 213 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.
- 214 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.
- 215 FUEL SWITCHING STARTUP PROCESS** – The act of changing from one type of fuel to a different type of fuel.
- 216 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.

- 217 HIGHER HEATING VALUE (HHV) or GROSS HEATING VALUE** – The amount of heat produced by the complete combustion of a unit quantity of fuel determined by a calorimeter wherein the combustion products are cooled to the temperature existing before combustion and all of the water vapor is condensed to liquid.
- 218 LOW SULFUR OIL** – Fuel oil containing less than or equal to 0.05 % by weight of sulfur.
- 219 LOWER HEATING VALUE (LHV) OR NET HEATING VALUE** – The amount of heat produced by the complete combustion of a unit quantity of fuel determined by a calorimeter wherein the combustion products are cooled to the temperature existing before combustion and all of the water vapor remains as vapor and is not condensed to a liquid. The value is computed from the higher heating value by subtracting the water originally present as moisture and the water formed by combustion of the fuel.
- 220 NATURAL GAS CURTAILMENT** - An interruption in natural gas service, such that the daily fuel needs of a combustion unit cannot be met with natural gas available due to one of the following reasons, beyond the control of the owner or operator:
- 220.1** An unforeseeable failure or malfunction, not resulting from an intentional act or omission that the governing state, federal or local agency finds to be due to an act of gross negligence on the part of the owner or operator; or
- 220.2** A natural disaster; or
- 220.3** The natural gas is curtailed pursuant to governing state, federal or local agency rules or orders; or
- 220.4** The serving natural gas supplier provides notice to the owner or operator that, with forecasted natural gas supplies and demands, natural gas service is expected to be curtailed pursuant to governing state, federal or local agency rules or orders.
- ~~**221 NITROGEN OXIDES (NO_x)** – Oxides of nitrogen calculated as equivalent nitrogen dioxide.~~
- ~~**222221**~~ **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.
- ~~**223222**~~ **PARTICULATE MATTER EMISSIONS** – Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.
- ~~**224223**~~ **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).
- ~~**225224**~~ **POWER PLANT OPERATION** – An operation whose purpose is to supply more than one-third of its potential electric output capacity to any utility power distribution system for sale.
- ~~**226225**~~ **RATED HEAT INPUT CAPACITY** – The heat input capacity in million Btu/hr. a specified on the nameplate of the combustion unit. If the combustion unit has been altered or modified such that its maximum heat input is different than the heat input capacity on the name plate, the maximum heat input shall be considered the rated heat input capacity.
- ~~**227226**~~ **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 combustion unit.
- ~~**228227**~~ **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 Specifications for Fuel Oils.”
- ~~**229228**~~ **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.
- ~~**230229**~~ **STATIONARY GAS TURBINE** – Any simple cycle gas turbine, regenerative gas turbine or any gas turbine portion of a combined cycle gas turbine that is not self propelled or that is attached to a foundation.

- ~~231~~**230** **SULFUR OXIDES (SO_x)** – 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.
- ~~232~~**231** **THIRTY (30) DAY ROLLING AVERAGE** – An arithmetic mean or average of all hourly emission rates for 30 successive combustion equipment operating days and calculated by a CEMS every hour.
- ~~233~~**232** **THREE (3) HOUR ROLLING AVERAGE** – An arithmetic mean or average of the ~~180 most recent 1-minute average values calculated by a CEMS every minute.~~ most recent three one (1) hour tests, or an arithmetic mean or average over a period of three hours which is newly calculated with each hourly measurement.
- ~~234~~**233** **TOTAL DISSOLVED SOLIDS (TDS)** – The amount of concentrated matter reported in milligrams/liter (mg/l) or parts per million (ppm) left after filtration of a well-mixed sample through a standard glass fiber filter. The filtrate is evaporated to dryness in a weighed dish and dried to constant weight at 180× C and the increase in dish weight represents the total dissolved solids.
- ~~235~~**234** **UNCOMBINED WATER** – Condensed water containing no more than analytical trace amounts of other chemical elements or compounds.

SECTION 300 – STANDARDS

LIMITATIONS – PARTICULATE MATTER:

- 301.1 Fuel Type:** An owner or operator of any combustion equipment listed in Section 102 shall burn only natural gas except when firing emergency fuel per subsection 104.2 and 104.3 of this rule. An owner or operator may burn a fuel other than natural gas for non-emergency purposes providing that the fuel shall not cause to be discharged more than 0.007 lbs. of particulate matter per MMBtu ~~heat input~~, demonstrated and documented through performance testing of this alternate fuel using Test Method 5. This usage of different fuels other than natural gas shall be approved by the Control Officer prior to usage.
- 301.2 Particulate Matter Testing** – 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 standard in subsection 301.1 of this rule is performed using test Method 5.
- 301.3 Good Combustion Practices for Turbines:** An owner or operator of any stationary gas turbine listed in subsection 102.2, regardless of fuel type, shall use operational practices recommended by the manufacturer and parametric monitoring to ensure good combustion control as listed below. ~~In lieu of a manufacturers' recommended procedure to ensure good combustion practices, one~~ One of the following procedures may be used:
- 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 reduce the temperature difference to 100×F or less; or
 - 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~~ this alternate recommended maximum temperature differential after approval by the Control Officer.
 - If the frequency of failure to meet the proper temperature differential of 100°F or to meet the alternate temperature differential recommended by the manufacturer reflects a pattern 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).
- ~~301.3~~**301.4 Cooling Towers:** An owner or operator of a cooling tower associated with applicable units listed in Section 102 shall:
- Equip the cooling tower with a drift eliminator. The drift eliminator shall not be manufactured out of wood ~~and~~.
 - The concentration of Total Dissolved Solids (TDS) multiplied by the percentage of drift rate shall not exceed the maximum numerical limit of 20.

- c. Visually inspect the drift eliminator on a monthly basis only if the drift eliminator can be viewed safely and does not require an owner or operator to walk into the tower. If the drift eliminator cannot be safely inspected monthly then subsection ~~301.3d~~ 301.4d shall apply:
- d. Visually inspect the drift eliminator for integrity during a regularly scheduled outage when the cooling tower is not operating, if it cannot be inspected on a monthly basis. This visual inspection shall be no less than once per year.

302 LIMITATIONS – OPACITY:

302.1 No person shall discharge into the ambient air from any single source of emissions any air contaminant, other than uncombined water, in excess of 20% opacity, except as provided in subsection 302.2.

302.2 Opacity may exceed the applicable limits established in subsection 302.1 for up to one hour during the start-up of switching fuels; however, opacity shall not exceed 40% for any six (6) minute averaging period in this one hour period, provided that the Control Officer finds that the owner or operator has, to the extent practicable, maintained and operated the source of emissions in a manner consistent with good air pollution control practices for minimizing emissions. The one hour period shall begin at the moment of startup of fuel switching.

302.3 Determination of whether good air pollution control practices are being used shall be based on information provided to the Control Officer upon request, which may include, but is not limited to, the following:

- a. Monitoring results.
- b. Opacity observations.
- c. Review of operating and maintenance procedures.
- d. Inspection of the source.

303 LIMITATIONS - SULFUR IN FUEL: An owner or operator of any applicable equipment listed in Section 102 that burns fuel oil alone or in ~~combo~~ combination with any other fuel as either emergency fuel or non-emergency fuel that meets the standards in subsection 301.1 shall use only low sulfur oil. ~~with one exception. Existing supplies in storage of any fuel oil and/or of any used fuel oil with sulfur content greater than 0.05% by weight may be used by the owner or operator until (1.5 years after adoption of rule) January 3, 2005 for emergency fuel. This usage shall be reported within 24 hours to the Control Officer, verbally along with the dates of usage. A written report shall follow within 48 hrs. of usage which shall include identification of the nature of the emergency and actual and expected dates of usage.~~

304 LIMITATIONS – NITROGEN OXIDES: No owner or operator of any applicable equipment listed in subsection 102.1 that commenced construction or a major modification after May 30, 1972 shall cause to be discharged into the atmosphere nitrogen oxides in excess of the following limits:

304.1 155 ppmv ~~heat input~~, calculated as nitrogen dioxide when burning gaseous fossil 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 time of one hour. If a Continuous Emission Monitoring System (CEMS) is used, the test result shall be based upon a 30-day rolling average.

304.2 230 ppmv ~~heat input~~ calculated as nitrogen dioxide when burning liquid fossil 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 time of one hour. If a CEMS is used, the test result shall be based upon a 30-day rolling average.

304.3 The nitrogen oxides concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam generating units. The nitrogen oxides concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines.

305 LIMITATIONS - CARBON MONOXIDE: No owner or operator of any equipment listed in Section 102 shall cause to be discharged into the atmosphere carbon monoxide (CO) measured in excess of 400 ppmv at any time, during steady state compliance source testing. This test result, using EPA Reference Method 10, and performed during steady state compliance source testing shall be based upon the arithmetic mean of the results of three test runs. Each test run shall have a minimum sample time of one hour. The CO concentration shall be measured dry and corrected to 3% oxygen for electric utility steam generating units and cogeneration steam

generating units. The CO concentration shall be measured dry and corrected to 15% oxygen for stationary gas turbines.

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 Section 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 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 Operation and Maintenance (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 to 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 then comply with the 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, then an owner or operator shall comply with the newest 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.

306.4 Continuous Emission Monitoring Systems (CEMS):

a. An owner or operator of a combustion unit subject to Section 304 with a heat input of greater than 250 MMBtu/hr, regardless of fuel type, shall install, calibrate, maintain, and operate a CEMS for measuring nitrogen oxides and recording the output of the system. Where nitrogen oxide emissions are monitored by a CEMS, then a CEMS shall also be required for the measurement of the oxygen content of the flue gases. All CEMS shall comply with the provisions in 40 CFR Subpart Da, Part 60, 60.47 (a).

b. An owner or operator of any affected unit listed above that requires a CEMS for nitrogen oxides that meets and is continuing to meet the requirements of 40 CFR Part 75 may use that CEMS to meet the requirements of subsection 306.4 a of this rule.

307 EMERGENCY FUEL USE NOTIFICATION – An owner or operator of a unit that ~~uses~~ is fired with emergency fuel ~~that~~ but is normally fired with natural gas shall notify the Control Officer verbally no later than 24 hours after declaration of the emergency that necessitates its use in compliance with per subsection subsections 104.2 and 212. This verbal report shall be followed by a written report within 48 ~~hrs~~ hours of initial emergency fuel usage. The written report shall also include identification of the nature of the emergency, initial dates of usage, and the expected dates of usage.

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) 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 6 months after rule is adopted) 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(s) used to achieve such compliance shall be in operation by (insert 30 months after date of adoption of rule).
- 401.3 ECS Installation:** An owner or operator required to install a new ECS to satisfy the requirements of this rule shall file a schedule for the installation of an ECS by (insert 8 months after the rule is adopted). 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(s) used to achieve such compliance shall be in operation by (insert 36 months after adoption of rule).
- 401.4 CEMS Installation:** An owner or operator required to install or modify a CEMS to satisfy the requirements of this rule shall file a schedule for the installation or modification of the CEMS by (insert 8 months after the rule is adopted) and complete the installation of the CEMS by (insert 36 months after date of adoption of rule).

SECTION 500 - MONITORING AND RECORDS

- 501 RECORDKEEPING AND REPORTING:** Any 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 Cooling Towers:** Monthly gravimetric testing reports for TDS shall be recorded for six months in succession and thereafter quarterly reports shall be recorded. Results of the monthly or yearly visual inspection of the drift eliminator shall also be recorded. If the drift eliminator cannot be visually inspected monthly, then documentation of the physical configuration of the drift eliminator shall be submitted to the Control Officer to demonstrate that the drift eliminator cannot be inspected monthly.
- 501.3 Emergency Fuel Usage:** Type and amount of emergency fuel used, dates and hours of operation using emergency fuel, nature of the emergency or reason for the use of emergency fuel as stated in subsections 104.2 and 104.3.
- 501.4 Fuel Switching:** ~~Duration of fuel switch including stop and start times and monthly totals for twelve month log of hours of operation for testing, reliability, and maintenance purposes per subsection 302.2. Monthly records of fuel switching including stop and start times, monthly records of hours of operation for testing, reliability and maintenance purposes per subsection 104.3, and a yearly log total of these hours.~~
- 501.5 CEMS;** All CEMS measurements, results of CEMS performance evaluations, CEMS calibration checks, and adjustments and maintenance performed on these systems.
- 501.6 Good Combustion Practices:** Measurements of the temperature differential across the burners of turbines per subsection ~~301.2~~ 301.3 a, b, or c, results of evaluation and of 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 without any action by the owner or operator.
- 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.
- 503 COMPLIANCE DETERMINATION:**
- 503.1 Low Sulfur Oil Verification:**
- a. An owner or operator shall submit fuel oil or liquid fuel receipts from the fuel supplier indicating the sulfur content of the fuel or verification that the oil used to generate electric power meets the 0.05% sulfur limit if requested by the Control Officer; or
 - b. If fuel receipts are not available then an owner or operator shall submit a statement of certification or proof of the sulfur content of the oil or liquid fuel from the supplier to the Control Officer; or

- c. An owner or operator may elect to test the fuel for sulfur content in lieu of certification from the fuel supplier or fuel receipts using one of the test methods listed in subsections 504.11, 504.12, 504.13 or 504.14.
- 503.2 Drift Rate Verification:** An owner or operator shall submit design drift rate verification from the manufacturer of the drift eliminator used in the cooling towers to the Control Officer if proof of the design drift rate is requested by the Control Officer.
- 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 are available at the Maricopa County Environmental Services Air Quality Department, 1001 N. Central Avenue, Suite 595, Phoenix, AZ 85004-1942. ~~The ASTM methods (1990, 1998 and 2000) and the The Standard Methods listed below (1995) are~~ is also ~~adopted~~ incorporated by reference. When more than one test method as listed in subsections ~~504.10-504.11~~ through ~~504.13~~ 504.14 is permitted for the same determination, an exceedance of the limits established in this rule determined by any of the applicable test methods constitutes a violation.
- 504.1** 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).
- 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 from 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).
- 504.9** EPA Reference Method 10 (“Determination of Carbon Monoxide Emissions 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 #D2622-98, (“Standard Test Method for Sulfur in Petroleum Products by Wavelength Disperse X-Ray Fluorescence Spectrometry”), 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.

County Notices Pursuant to A.R.S. § 49-112

~~504.13~~**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 Products by Energy-Dispersive X-Ray Fluorescence Spectrometry”), 1990 or 1998.

~~504.14~~**504.15** Standard Methods for the Examination of Water and Wastewater, (“Dissolved Solids Dried at 180°C, Method #2540C”), American Public Health Association, 19th.edition, 1995.