Enhanced Regulatory Outreach Program
Maricopa County Air Quality Department

Notice of Stakeholder Workshop

AQ-2015-003-Rule 323
Fuel Burning Equipment-Industrial/Commercial/Institutional Sources

Date/Time: Thursday, February 18, 2016 at 11:00 am
Location: 1001 North Central Ave, Floor 5 Classroom*

The Maricopa County Air Quality Department (department) will conduct a Stakeholder Workshop to discuss proposed revisions to AQ-2015-003-Rule 323 (Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources). The draft rule to be discussed during this workshop is attached to this announcement.

The department will discuss the proposed revisions since the previous workshop conducted on September 3, 2015:

- PROPOSE in Sections 104.1(f) and 104.2(b) (Partial Exemptions) to clarify partial exemptions for stationary gas turbines and steam generating units for testing, reliability, training, and maintenance purposes; text is similar to text in Rule 322 (Power Plant Operations)
- PROPOSE in Section 200 (Definitions) to delete the definition of “low sulfur oil” and to add the definition of “ultra low sulfur diesel”
- PROPOSE in Section 303 (Limitations-Sulfur In Fuel) to change “low sulfur oil” to “ultra low sulfur fuel”; text is similar to text in Rule 324 (Stationary Internal Combustion (IC) Engines)
- PROPOSE in Section 304.1(b) (Limitations-Nitrogen Oxides) to change NO_x emissions limits from “155 ppm” to “42 ppmdv” when burning gaseous fuel and from “230 ppm” to “65 ppmdv” when burning liquid fuel; NO_x emissions limits are similar to NO_x emissions limits proposed in Rule 322 (Power Plant Operations) and are considered Reasonably Available Control Technology (RACT) for NO_x
- PROPOSE in Section 401 (Compliance Schedule) a compliance schedule for an Operation & Maintenance (O&M) Plan, modifications to an existing Emission Control System (ECS), and installation of an ECS; text is similar to text that was in Rule 323 when it was first adopted
- PROPOSE in Section 503.1 (Compliance Determination-Ultra Low Sulfur Diesel Verification) to change “low sulfur oil” to “ultra low sulfur diesel”; text is similar to text in Rule 324 (Stationary Internal Combustion (IC) Engines)
- PROPOSE in Section 504 (Compliance Determination-Test Methods Incorporated By Reference) to change “July 1, 2004” to “July 1, 2015” – the current date of the Code of Federal Regulations

Additional information is available on the Enhanced Regulatory Outreach Program (EROP) website (www.maricopa.gov/regulations). The Stakeholder Workshop is an informal meeting for all interested parties, is free of charge and no advance registration or RSVP is required. If you would like to remotely attend this workshop, please logon to join my meeting from your computer, tablet or smartphone by clicking the link below.

https://global.gotomeeting.com/join/894853765

To participate in the discussion, dial in using your phone. Call +1 (872) 240-3412 using access code: 894-853-765

*If you will be attending this workshop in-person, when you arrive at 1001 North Central Avenue, please check-in in Suite #125 then proceed to the Floor 5 classroom. Thank you for participating in the rulemaking process.

AQ-2015-003-Rule 323
Stakeholder Workshop: February 18, 2016
Contact: Johanna Kuspert – 602-506-6710
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The following is a summary of revisions to draft Rule 323 (Fuel Burning Equipment From Industrial/Commercial/Institutional (ICI) Sources) dated February 18, 2016, since the previous workshop for draft Rule 323 conducted on September 3, 2015:

- PROPOSE in Sections 104.1(f) and 104.29b) (Partial Exemptions) to clarify partial exemptions for stationary gas turbines and steam generating units for testing, reliability, training, and maintenance purposes; text is similar to text in Rule 322 (Power Plant Operations)

- PROPOSE in Section 200 (Definitions) to delete the definition of "low sulfur oil"and to add the definition of "ultra low sulfur diesel"

- PROPOSE in Section 303 (Limitations-Sulfur In Fuel) to change "low sulfur oil" to "ultra low sulfur fuel"; text is similar to text in Rule 324 (Stationary Internal Combustion (IC) Engines)

- PROPOSE in Section 304.1(b) (Limitations-Nitrogen Oxides) to change NO_x emissions limits from "155 ppm" to "42 ppmdv" when burning gaseous fuel and from "230 ppm" to "65 ppmdv" when burning liquid fuel; NO_x emissions limits are similar to NO_x emissions limits proposed in Rule 322 (Power Plant Operations) and are considered Reasonably Available Control Technology (RACT) for NO_x

- PROPOSE in Section 401 (Compliance Schedule) a compliance schedule for an Operation & Maintenance (O&M) Plan, modifications to an existing Emission Control System (ECS), and installation of an ECS; text is similar to text that was in Rule 323 when it was first adopted

- PROPOSE in Section 503.1 (Compliance Determination-Ultra Low Sulfur Diesel Verification) to change "low sulfur oil" to "ultra low sulfur diesel"; text is similar to text in Rule 324 (Stationary Internal Combustion (IC) Engines)

- PROPOSE in Section 504 (Compliance Determination-Test Methods Incorporated By Reference) to change "July 1, 2004" to "July 1, 2015" – the current date of the Code of Federal Regulations

REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 323
FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/ INSTITUTIONAL (ICI) SOURCES

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~~Adopted 07/03/05~~
~~Revised 10/17/07~~

Adopted 07/02/2003; Revised 10/17/2007; **Revised MM/DD/YYYY**

MARICOPA COUNTY
AIR POLLUTION CONTROL REGULATIONS
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.

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 Dryers, cement and lime kilns; or

103.3 Direct-fired process heaters; or

103.4 Medical waste incinerators; or

103.5 Reciprocating internal combustion equipment; or

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

103.7 Combustion equipment associated with nuclear power plant operations; or

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~~ Section 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~~ Sections 301.1, 301.2, 304, 305, 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.~~ Fired with emergency fuel for 36 cumulative hours per year, per unit for testing, reliability, training, and maintenance purposes.

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.~~ for 36 cumulative hours per year, per unit.

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.~~ For the purpose of this rule, the following definitions shall apply, in addition to those definitions found in Rule 100 (General Provisions and Definitions) of these rules. In the event of any inconsistency between any of the Maricopa County air pollution control rules, the definitions in this rule take precedence.

201 **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~~ **209** **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~~ **210** **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.

~~212~~ **211** **PARTICULATE MATTER EMISSIONS:** Any and all particulate matter emitted to the ambient air as measured by applicable state and federal test methods.

~~213~~ **212** **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).

~~214~~ **213** **PROCESS HEATER:** 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). A process heater 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.

~~215~~ **214** **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.

~~216~~ **215** **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 unit.

~~217~~ **216** **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".

~~218~~ **217** **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.

~~219~~ **218** **STATIONARY GAS TURBINE:** Any simple cycle gas turbine or regenerative gas turbine that is not self-propelled or that is attached to a foundation.

~~220~~ **219** **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.

~~221~~ **220** **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.

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

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 from any combustion units listed in ~~subsections 102.1, 102.3 and 102.4~~ Sections 102.1, 102.3, and 102.4 of this rule 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~~ Section 504.6 of this rule, each time a compliance test for particulate matter emissions to meet the standards in ~~subsection 301.1~~ Section 301.1 of this rule is performed using Method 5. (The results of the Method 202 testing shall be used for emissions inventory purposes).

301.3 **Good Combustion Practices for Turbines:** An owner or operator of a stationary gas turbine listed in ~~subsection 102.2~~ Section 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. 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 301.3a~~ Section 301.3(a) of this rule 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~~ An owner or operator shall not 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:** An owner or operator of any applicable equipment listed in Section 102 of this rule that burns liquid fuel oil or a mixture or blend of fuel oil with any other fuels shall use only ~~low sulfur oil~~ ultra low sulfur diesel. 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%).~~ that contains no more than 0.08% sulfur by weight, alone or in combination with other fuels.

304 **LIMITATIONS – NITROGEN OXIDES:**

304.1 An owner or operator of any combustion equipment listed in Section 102 of this rule, except gas turbines, 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~~ Sections 304.1(a) or 304.1(b) of this rule. Gas turbines are subject to both Sections 304.1(a) and 304.1(b) of this rule below:

a. Establish initial optimal baseline concentrations for NO_x and CO within 90 days of the first usage of the combustion equipment utilizing the initial design burner specifications or manufacturer's recommendations to ensure good combustion practices. 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 NO_x 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 NO_x 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~~ 42 ppmdv 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~~ 65 ppmdv 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~~ Section 304.1(a) of this rule and;

b. Meet the NO_x emission limits as stated in ~~subsection 304.1b~~ Section 304.1(b) of this rule.

305 LIMITATIONS-CARBON MONOXIDE: ~~No~~ An owner or operator of any equipment listed in Section 102 of this rule with a heat input greater than 100 MMBtu/hr shall not cause to be discharged into the atmosphere, carbon monoxide (CO), measured in excess of 400 ppmv at any time. 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~~ An owner or operator required to use an approved ECS pursuant to this rule shall not 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 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 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 **O&M Plan:** Any owner or operator employing an approved ECS on the effective date of this rule shall by [8 months after rule adoption] file an O&M Plan with the Control Officer in accordance with Section 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 [8 months after rule adoption] 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 [24 months after rule adoption].

401.3 **ECS Installation:** An owner or operator required to install a new ECS for compliance with this rule shall by [8 months after rule adoption] file a schedule for the installation with the Control Officer. The ECS shall then be installed and in compliance by [36 months after rule adoption].

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 of this Rule: Type of fuel used, amount of fuel used, and amount of sulfur in the fuel if using liquid fuel, and the days and hours of operation.

501.2 Emergency Fuel Usage: 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~~ Sections 104.1 and 104.2. 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 301.3~~ Section 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 301.3 (a) or (b)~~ Sections 301.3(a) or 301.3(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.

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~~ Ultra Low Sulfur Diesel 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~~ If the Control Officer requests prood of the sulfur content, the owner or operator shall submit fuel receipts, contract specifications, pipeline meter tickets, Safety Data Sheets (SDS), fuel supplier information or purchase records, if applicable, from the fuel supplier, indicating the sulfur content of the fuel oil. In lieu of these, testing of the fuel oil for sulfur content to meet the 0.0015% limits shall be permitted for evidence of compliance.

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~~ The owner or operator shall submit documentation of the concentration of the sulfur level of the waste derived fuel gas to the Control Officer upon request.

~~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, 504.14 or 504.15.~~

503.2 Gaseous Emissions-Source Test: Boilers with a heat input capacity of 10 MMBtu per hour or greater, must conduct all applicable performance (stack) tests on a triennial basis. Triennial performance tests must be completed no more than 37 months after **the previous performance test.**

a. Compliance with the NO_x and CO emission requirements and the stack gas oxygen requirements of Sections 301 through 304 of this rule shall be determined using the test methods specified below. All emissions determinations shall be made during normal operating conditions, except no compliance determination shall be established during unit startup or shutdown. Tests shall be conducted while units are operating at a firing rate that is as close as physically possible to the unit's rated heat input capacity. Tests shall be conducted

for three 60 minute runs. Results shall be averaged over the three test periods. Test reports shall include the operational characteristics of all flue-gas NO_x reduction equipment.

(1) Oxide of Nitrogen - EPA Method 7E.

(2) Carbon Monoxide - EPA Method 10.

(3) Stack Gas Oxygen - EPA Method 3A.

(4) Carbon Dioxide - EPA Method 3A.

b. A scheduled source test may not be discontinued solely due to the failure of one or more runs to meet applicable standards.

c. In the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued because of one of the following reasons, then compliance may be determined using the average of the other two runs:

(1) Forced shutdown; or

(2) Failure of an irreplaceable portion of the sampling train; or

(3) Extreme meteorological conditions presenting a hazard to the sampling team; or

(4) Other circumstances beyond the owner or operator control as determined by the Control Officer.

d. A source test not conducted pursuant to the source test methods listed in Section 503.2(a) of this rule may be rejected and the test report determined to be invalid.

503.3 **Gaseous Emissions-Continuous Emission Monitoring System (CEMS):** Compliance with NO_x emission requirements specified in Sections 301 through 304 of this rule may also be determined using CEMS. All emissions determinations shall be made in the as-found operating condition, except no compliance determination shall be established during unit startup or shutdown. Where the unit(s) are equipped with CEMS:

a. **General:** All CEMS must be installed according to the procedures specified in 40 CFR 60.13(g). All CEMS shall be installed such that a representative measurement of emissions is obtained. Additional procedures for the location of CEMS found in 40 CFR 60, Appendix B shall be used. The data recorder for CEMS shall be in operation at all times the unit is operated.

b. **Cycle Time:** An owner or operator of any unit using a CEMS shall ensure that the CEMS completes a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15 minute period.

c. **Calibration:** Zero and span shall be checked once every 24 hours. The CEMS shall be calibrated in accordance with the manufacturer's specifications.

d. **Averaging:** The data recorded during periods of calibration checks, zero and span adjustments shall not be included in averaging for compliance determinations. Compliance shall be determined on an hourly basis using the average of the 3 previous 1 hour average emissions concentrations. The 1-hour average emissions concentration shall be determined from at least two data points recorded by the CEMS.

e. **Accuracy Testing:** Accuracy testing of CEMS shall be conducted using a relative accuracy test audit pursuant to 40 CFR 60, Appendix F.

504 ~~TEST METHODS ADOPTED BY REFERENCE~~ **COMPLIANCE DETERMINATION-TEST METHODS INCORPORATED BY REFERENCE:** The EPA test methods as they exist in the Code of Federal Regulations (CFR) ~~(July 1, 2004)~~ (July 1, 2015), as listed below, are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Phoenix, AZ 85004-1942. When more than one test method as listed in ~~subsections 504.11, 504.12,~~

~~504.14, or 504.15~~ Sections 504.11, 504.12, 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)

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

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).

504.8 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 from Stationary Sources") (40 CFR 60, Appendix A).

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

504.11 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.

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

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

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.

Enhanced Regulatory Outreach Program
Maricopa County Air Quality Department

Stakeholder Workshop: Summary
AQ-2015-003-Rule 323
Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources
February 18, 2016

Attendees:
2 Stakeholders attended: City of Phoenix; Geosyntec Consultants
0 Stakeholder attended via phone
1 Staff attended: Hether Krause Planning & Analysis Division

Comments:

1. Regarding Sections 104.1(a), (b), and (c) (Partial Exemptions), make sure the partial exemptions are correct; these partial exemptions are for stationary gas turbines listed in Section 102.2 (stationary gas turbines with a heat input at peak load equal to or greater than 2.9 Megawatts).

2. In Section 503.2 (Compliance Determination-Gaseous Emissions-Source Test), make sure the requirements (particularly the stack test requirements) are consistent with similar requirements in Rule 324 (Stationary Internal Combustion (IC) Engines).

3. In Rule 324, there used to be an exception for PSD and NSR.

4. In Section 504 (Compliance Determination-Test Methods Incorporated By Reference), can a source use a test method other than the test methods that are listed?

5. In Section 304.1 (Limitations-Nitrogen Oxides), the text in the introductory statement says, in part, "…shall comply either with Sections 304.1(a) or (b) of this rule." Should the "or" be "or"? Older boilers cannot meet the standard; should be allowed to use the tuning schedule.

6. In Section 304.1(a)(5) (Limitations-Nitrogen Oxides) and 501.4 (Recordkeeping And Reporting-Tuning Procedure), a handheld monitor is allowed to be used. Technically, using handheld equipment is not as accurate.

7. In Sections 401.2 (Compliance Schedule-Modification To Existing ECS) and 401.3 (Compliance Schedule-ECS Installation), define "new" or use the term "existing" instead.

8. Clarify who needs to source test and when.

9. Does Maricopa County tell a source when source testing has to be done?

Next Steps: The department will revise draft Rule 323 and will e-mail the revised draft to workshop attendees for review and comment. The department does not anticipate conducting another workshop.

Air Quality Rules

Hether Krause
Planning and Analysis Division Manager
Maricopa County Air Quality Department
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Ozone Update

- Recent reclassification for the 2008 Ozone Standard – Moderate
- January 1, 2017 deadline to submit a Moderate Plan (Ozone SIP)
- Attainment Deadline for meeting 2008 Standard is July 2018
- Moderate Plan requires VOCs and NOx rules review for most recent CTGs and RACT – some of our rules do not meet current CTGs and RACT
- New Ozone Standard October 2015 – 70 ppb

Maricopa County
Air Quality Department

Mission:

To provide clean air to Maricopa County residents and visitors so they can live, work and play in a healthy environment.

Maricopa County
Air Quality Department

Proposed Rule Revisions

Rule 140**:** Excess Emissions (Start-Up/Shutdown/Malfunction; Litigated)

Rule 316: Nonmetallic Mineral Processing (SIP Litigated)

Rule 322: Power Plant Operations

Rule 323: Fuel Burning From Industrial, Commercial, Institutional Sources

Rule 324: Stationary Internal Combustion (IC) Engines

Rule 336: Surface Coating Operations

Rule 342**:** Coating Wood Furniture And Fixtures

Rule 345: Vehicle And Mobile Equipment Coating

Rule 350, 351, 352 and 353: Organic Liquids And Gasoline Rules

Steps For The Proposed Rule Revisions

1-County Manager Briefed Board Of Supervisors	June 2015
2-County Stakeholder Workshops	June 2015 – March 2016
3-Stakeholder Notification 2 Weeks Before Board Of Health Meeting	April 2016
4-Board Of Health Meeting To Initiate Regulatory Change	April 2016
5-Specific Departmental Processes (Includes 30-Day Comment Period)	May 2016 – June 2016
6-Stakeholder Notification 2 Weeks Prior To Board Of Health Meeting	July 2016
7-Board Of Health Meeting To Make Recommendations To Board Of Supervisors	July 2016
8-Schedule Board Of Supervisors' Public Hearing	September 2016
9-Board Of Supervisors' Public Hearing	November 2016
10-Item Adopted	November 2016

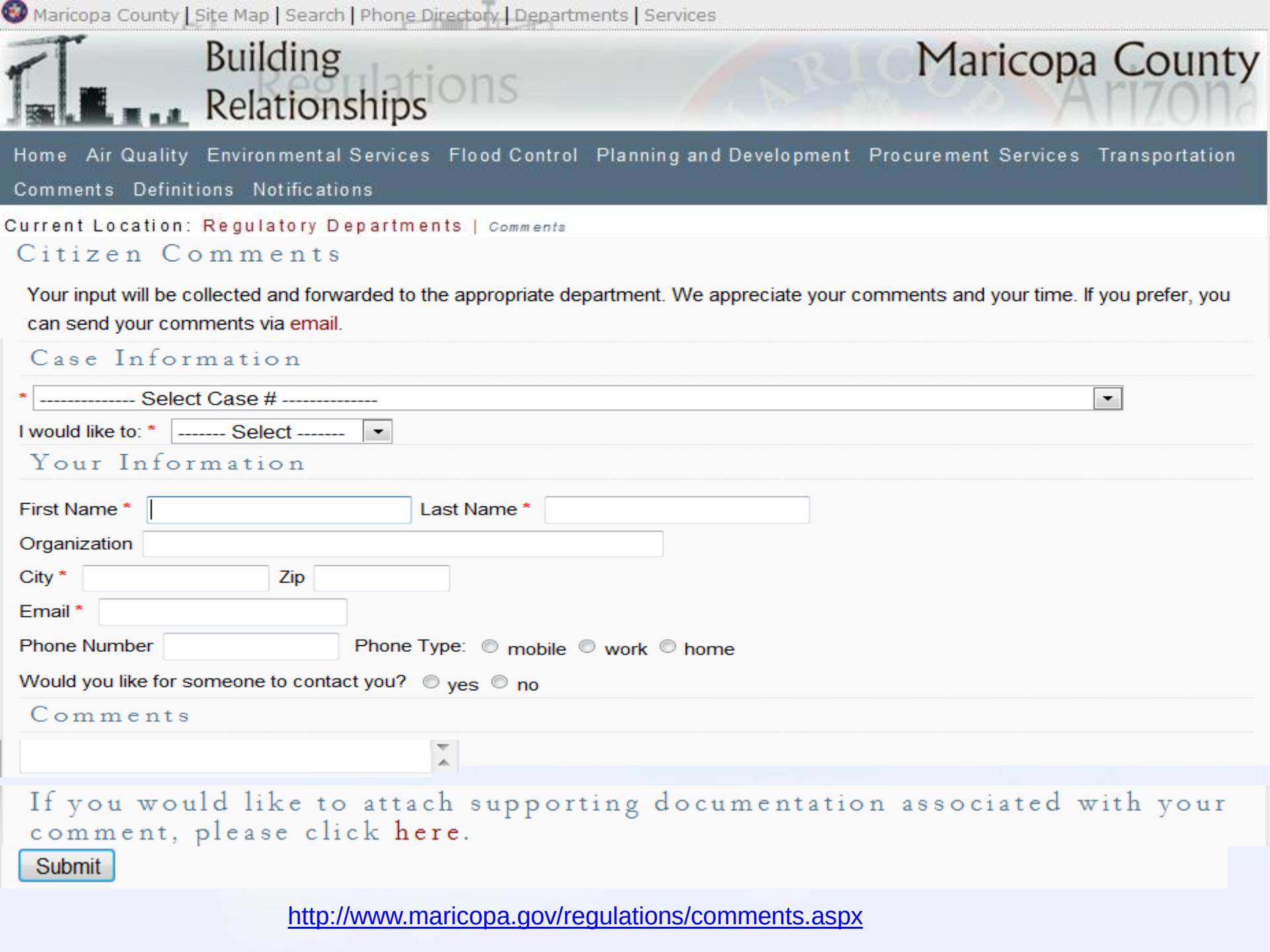
MARICOPA COUNTY
ENHANCED REGULATORY OUTREACH PROGRAM

Maricopa County's Enhanced Regulatory Outreach Program (EROP) Departments seek to ensure the safety and well-being of our community. Because we understand that regulations and rule-making decisions, discussions, and meetings can be confusing, we have developed this web-site to allow citizens to easily monitor and engage in the adoption and amendment of all regulations.

AIR QUALITY • ENVIRONMENTAL SERVICES • FLOOD CONTROL • PLANNING & DEVELOPMENT • PROCUREMENT SERVICES • TRANSPORTATION

http://www.maricopa.gov/regulations/

Maricopa County
Air Quality Department



http://www.maricopa.gov/regulations/comments.aspx

Rule 323

Fuel Burning Equipment From Industrial, Commercial, Institutional (ICI) Sources

Stakeholder Workshop #3
February 18, 2016

Maricopa County
Air Quality Department

Agenda

- **Overview**
- **Rule 323 Proposed Revisions**
  - Stakeholder Comments From Workshop #2 Held On Sept. 3, 2015
  - Stakeholder Comments After Workshop #2
  - Additional Revisions Since Workshop #2
  - Additional Revisions For Consideration
- **Workshop #3 Summary**

Overview

The purpose of this rulemaking is:

- To update Rule 323 to address the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS)

- To include Reasonably Available Control Technology (RACT) for NO_x. RACT is defined as “the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility.” (44 FR 53761, September 17, 1979)

Stakeholder Comments
From Workshop #2 Held On Sept. 3, 2015

Maricopa County
Air Quality Department

Stakeholder Comments From Workshop #2

Comment: Instead of including gas turbines in Section 304.1 (Limitations-Nitrogen Oxides), create a separate section for gas turbines.

Response: Gas turbines are included in Section 304.1 (Limitations-Nitrogen Oxides); gas turbines are not in a separate section.

Stakeholder Comments From Workshop #2

Comment: In regards to the requirements in Section 304.1(a) (Limitations-Nitrogen Oxides) to inspect combustion equipment, some equipment cannot be inspected, e.g., a Clayton Boiler. With the advanced burner system and the basic design of the Clayton Boiler, combustion chamber inspection, burner inspection, and flame pattern inspection do not apply. The Clayton Boiler is classified as a steam generator and is much different than a conventional boiler.

Response: Section 304.1(a) requires that combustion equipment be tuned annually either in accordance with good combustion practices, which includes inspection of the burner system, burner chamber, and flame pattern, or in accordance with manufacturer's specifications. As long as combustion equipment is tuned annually in accordance with manufacturer's specifications, then such equipment is considered to be in compliance with Section 304.1(a).

Stakeholder Comments From Workshop #2

Comment: In Section 304.1(b) (Limitations-Nitrogen Oxides), include "as specified in the permit conditions" or "alternative as approved by the Control Officer".

Response: Section 304.1(b) requires an owner or operator of combustion equipment with a heat input of greater than 10 MMBtu/hr to 100 MMBtu/hr to limit NO_x emissions to no more than 42 ppmdv when burning gaseous fuel and to no more than 65 ppmdv when burning liquid fuel. This is a requirement of the rule; this requirement may be specified in permit conditions but is not stated as such in the rule itself.

Stakeholder Comments From Workshop #2

Comment: In Table 1, is 9 ppmv beyond RACT?

Response: Table 1 is not proposed to be included in Rule 323. Instead, the department is proposing in Section 304.1(b) (Limitations-Nitrogen Oxides) to change NO_x emissions limits from “155 ppm” to “42 ppmdv” when burning gaseous fuel and from “230 ppm” to “65 ppmdv” when burning liquid fuel. NO_x emissions limits are similar to NO_x emissions limits proposed in Rule 322 (Power Plant Operations) and are considered Reasonably Available Control Technology (RACT) for NO_x

Stakeholder Comments From Workshop #2

Comment: How often must source testing be conducted?

Response: Per permit conditions, an owner or operator must conduct performance tests within 60 days after the issuance date of the permit or within 60 days after the new applicable equipment has achieved the capability to operate at its maximum production rate on a sustained basis, whichever occurs last.

Stakeholder Comments After Workshop #2

Stakeholder Comments After Workshop #2

No comments were received after Workshop #2

Additional Revisions Since Workshop #2

Additional Revisions Since Workshop #2

- Propose in Sections 104.1(f) and 104.2(b) (Partial Exemptions) to clarify partial exemptions for stationary gas turbines and steam generating units for testing, reliability, training, and maintenance purposes; text is similar to text in Rule 322 (Power Plant Operations)

- Propose in Section 200 (Definitions) to delete the definition of “low sulfur oil” and to add the definition of “ultra low sulfur diesel”

- Propose in Section 303 (Limitations-Sulfur In Fuel) to change “low sulfur oil” to “ultra low sulfur fuel”; text is similar to text in Rule 324 (Stationary Internal Combustion (IC) Engines)

Additional Revisions Since Workshop #2

- Propose in Section 304.1(b) (Limitations-Nitrogen Oxides) to change NO_x emissions limits from “155 ppm” to “42 ppmdv” when burning gaseous fuel and from “230 ppm” to “65 ppmdv” when burning liquid fuel; NO_x emissions limits are similar to NO_x emissions limits proposed in Rule 322 (Power Plant Operations) and are considered Reasonably Available Control Technology (RACT) for NO_x

- Propose in Section 401 (Compliance Schedule) a compliance schedule for an Operation & Maintenance (O&M) Plan, modifications to an existing Emission Control System (ECS), and installation of an ECS; text is similar to text that was in Rule 323 when it was first adopted

- Propose in Section 503.1 (Compliance Determination-Ultra Low Sulfur Diesel Verification) to change “low sulfur oil” to “ultra low sulfur diesel”; text is similar to text in Rule 324 (Stationary Internal Combustion (IC) Engines)

Additional Revisions For Consideration

Additional Revisions For Consideration

- Propose in Section 504 (Compliance Determination-Test Methods Incorporated By Reference):
  - To delete “July 1, 2004”
  - To add as the first sentences: “The following test methods, as applicable, shall be used to determine compliance with this rule. Alternative test methods may be utilized upon written approval from the Control Officer”
  - To clarify the last sentence regarding when more than one test method is permitted for a determination

Workshop #3 Summary

- Recap Of Discussion Items
- Next Steps For Rule 323
- Stay Informed
- Questions?