

NOTICE OF FINAL RULEMAKING

MARICOPA COUNTY AIR POLLUTION CONTROL REGULATIONS

REGULATION III – CONTROL OF AIR CONTAMINANTS

RULE 323: FUEL BURNING EQUIPMENT FROM INDUSTRIAL/COMMERCIAL/INSTITUTIONAL

(ICI) SOURCES

PREAMBLE

- | <u>1.</u> | <u>Rule affected</u> | <u>Rulemaking action</u> |
|------------------|--|---------------------------------|
| | Rule 323: Fuel Burning Equipment from Industrial/Commercial/Institutional
(ICI) Sources | Amended |
| <u>2.</u> | <u>Statutory authority for the rulemaking:</u> | |
| | Authorizing statutes: A.R.S. §§ 49-474, 49-479, and 49-480 | |
| | Implementing Statute: A.R.S. § 49-112 | |
| <u>3.</u> | <u>The effective date of the rule:</u> | |
| | Date of adoption: November 2, 2016 | |
| <u>4.</u> | <u>List of public notices addressing this rulemaking:</u> | |
| | Notice of Briefing to Maricopa County Manager: May 2015 | |
| | Notice of Stakeholder Workshops: June 29, 2015, September 3, 2015, and February 18, 2016 | |
| | Notice of Maricopa County Board of Health Meeting: April 25, 2016 | |
| | Notice of Proposed Rulemaking: 22 A.A.R. 1134, May 13, 2016 | |
| <u>5.</u> | <u>Name and address of department personnel with whom persons may communicate regarding the rulemaking:</u> | |
| | Name: Johanna M. Kuspert or Hether Krause | |
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6. Explanation of the rule, including the department's reasons for initiating the rulemaking:

Summary:

Rule 323 (Fuel Burning Equipment from Industrial/Commercial/Institutional (ICI) Sources) limits the discharge of nitrogen oxides (NO_x), sulfur oxides, particulate matter and carbon monoxide emissions into the atmosphere from fuel burning combustion equipment at industrial, commercial, and institutional (ICI) sources. Revisions to Rule 323 addressed the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 323 included Reasonably Available Control Technology (RACT) for NO_x. In addition, the amendments corrected typographical or other clerical errors; made minor grammatical changes to improve readability or clarity; modified the format, numbering, order, capitalization, punctuation, or syntax of certain text to increase standardization within and among rules; or made various other minor changes of a purely editorial nature. As these changes did not alter the sense, meaning, or effect of the rules, they are not described in detail here, but can be readily discerned in the “underline/strikeout” version of the rules contained in Item 14 of this notice.

Issues Raised and Discussed During this Rulemaking Process:

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

- Partial exemptions, particularly regarding stationary gas turbines
- Provisions for good combustion practices
- Source testing methods and frequency

Description of Amendments:

Regarding Exemptions:

- Section 104.1(c) (Partial Exemptions): Rule 323 was revised to clarify the partial exemption for military training facilities. The EPA commented that the term “military training facility” is unclear in this rule, especially as distinguished from other facilities such as “garrisons”. The EPA suggested that

this exemption should focus on the specific types of activities at these facilities that reasonably require exemptions, rather than the facilities themselves. The EPA suggested using Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM₁₀)) as an example. The text in Section 104.1(c) is from Imperial County Air Pollution Control District, Rule 800, Section E(6) (General Requirements for Control of Fine Particulate Matter (PM₁₀)).

- Sections 104.1(f) and 104.2 (Partial Exemptions): Rule 323 was revised to include source specific limitations on emergency fuel use that is or will be incorporated in a source permit. The EPA commented that engines and fuel use allow alternative emission limits from normal operating conditions; this is generally allowable but must also include appropriate limits on the length of the emergency condition and alternative emergency emission limits. EPA asked that the department revise this section.

Regarding Limitations:

- Section 301.1 (Good Combustion Practices for Turbines): Rule 323 was revised to include text regarding the frequency of monitoring temperature differential across the combustion burners. The EPA commented that the frequency of differential temperature measurement should be defined and that continuous monitoring of this differential should be required.
- Section 303 (Limitations-Sulfur in Fuel): The limitations for sulfur in fuel were changed from “low sulfur fuel” to “ultra low sulfur diesel”; consistent with federal standards.
- Section 304.1(b)(1) (Limitations-Nitrogen Oxides): The NO_x limitation when burning gaseous fossil fuel was changed from “155 ppm” to “42 ppmdv”. The U.S. Environmental Protection Agency (EPA) advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County’s (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).
- Section 304.1(b)(2) (Limitations-Nitrogen Oxides): The NO_x limitation when burning liquid fossil fuel was changed from “230 ppm” to “65 ppmdv”. The EPA advised the department that this limitation is considered RACT for NO_x; this limitation is similar to limits in Imperial County’s (CA) RACT SIP for the 1997 ozone standard for turbines (Rule 400.1 adopted 2010).

Regarding Compliance with Nitrogen Oxides Limitations:

- Section 304.1 (Limitations-Nitrogen Oxides): Rule 323 clarified which provisions a source must comply with in order to be in compliance with the NO_x limitations. A source can either tune equipment annually in accordance with good combustion practices or follow the manufacturer's recommended procedure or a source can limit NO_x emission to no more than 42 ppmdv when burning gaseous fuel or to no more than 65 ppmdv when burning liquid fuel.

Regarding Administrative Requirements:

- Section 401 (Compliance Schedule): Rule 323 was revised to include compliance schedules for filing an Operation & Maintenance (O&M) Plan; for filing a schedule for making modifications to existing Emission Control Systems (ECS); and for filing a schedule for installing an ECS.

Regarding Compliance Determinations:

- Section 503.1 (Compliance Determination-Ultra Low Sulfur Diesel Verification): The compliance determination for low sulfur oil verification was changed to a compliance determination for ultra low sulfur diesel verification consistent with federal standards. Due to the EPA's comments, additional language was added to clarify that sulfur content verification documents must provide accurate values and utilize enforceable test methods to determine the sulfur content. Also, the test method for determining sulfur content of waste gas was added in Sections 503.1(b) and 504.15 (Compliance Determination-Test Methods Incorporated by Reference).
- Section 503.2 (Compliance Determination-Gaseous Emissions-Source Test): The size of boilers that must conduct performance (stack) tests was changed from "10 MMBtu" to "100 MMBtu". The Arizona Public Service Company (APS) submitted a comment on February 22, 2016. They stated that Section 503.2 should be rewritten to be applicable to unit 100 MMBtu or larger, because it does not make sense to have stack testing for such small units.
- Sections 503.2 (Compliance Determination-Gaseous Emissions-Source Test) and 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS)): The text in Sections 503.2 and 503.3 is from Sacramento Metropolitan Air Quality Management District Rule 411 (NO_x from Boilers, Process Heaters and Steam Generators). The EPA advised the department that, when updating Rule 323 to include RACT, the department should consider other agencies' rules. Text

for Sections 503.2(c) and (d) regarding test runs and test protocols were removed, per the EPA's comments that this language would allow Control Officer discretion on testing operations that may lead to poor operating data. Text for Sections 503.2(a) and 503.3 regarding compliance determinations during startup and shutdown were removed ("All emissions determinations shall be made during normal operating conditions, except no compliance determination shall be established during unit startup and shutdown"), due to the EPA's comments that this language does not align with the EPA's startup, shutdown, and malfunction policy.

- Sections 503.2(c) and (d) (Compliance Determination-Gaseous Emissions-Source Test): The text in Sections 503.2(c) and (d) was deleted. The text was from Sacramento Metropolitan Air Quality Management District Rule 411 (NO_x from Boilers, Process Heaters and Steam Generators) and regards procedures in the event that a sample is accidentally lost or conditions occur in which one of the three runs must be discontinued and states that a source test reports may be determined to be invalid. The EPA commented that this would allow Control Officer discretion on testing operations that may lead to poor operating data and recommended removing these provisions.
- Section 504 (Compliance Determination-Test Methods Incorporated by Reference): Rule 323 included a provision that allows for the use of alternative test methods to determine compliance with the rule and clarified the provision regarding when more than one test method is permitted for a compliance determination.
- Section 504.12 (Compliance Determination-Test Methods Incorporated by Reference): The test method "American Society of Testing Materials, ASTM Method D1266-98, ("Standard Test Method for Sulfur in Petroleum Products - Lamp Method"), 1998" was deleted. The EPA commented that the test method may not be appropriate; its range is 0.01-0.4% which will not be able to verify compliance with the definition of ultra low sulfur diesel fuel at <0.0015%.

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

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

§ 49-112 County regulation; standards

§ 49-112(A)

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

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

§ 49-112(B)

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

The department complies with A.R.S. § 49-112(A) in that Maricopa County fails to meet the National Ambient Air Quality Standards for both ozone and particulates. The County failed to meet 2008 8-hour ozone standard by the marginal area attainment date of July 20, 2015. The EPA issued a final rule, effective June 3, 2016, reclassifying the Maricopa County area to “moderate” (published at 86 FR 26697, May 4, 2016). Further, a portion of the County was classified as a serious ozone nonattainment area under the previous 1-hour ozone standard requiring the County to continue to maintain the measures and

requirements that allowed the County to attain that standard. Currently, a portion of Maricopa County and Apache Junction in Pinal County is designated serious nonattainment for the PM₁₀ 24-hour standard. This is the only serious PM₁₀ nonattainment area in Arizona. Revisions to Rule 323 addressed the requirements of the State Implementation Plan (SIP) for “moderate” nonattainment for the 2008 eight-hour ozone national ambient air quality standard (NAAQS). The amendments in Rule 323 include Reasonably Available Control Technology (RACT) for NO_x.

The department complies with A.R.S. § 49-112(B) in that the amendments to Rule 323 are not more stringent than or in addition to a provision of Title 49 or rule adopted by the director or any board or commission authorized to adopt rules pursuant to Title 49; address the peculiar local conditions in Maricopa County; are authorized under A.R.S. Title 49, Chapter 3, Article 3; and are not in lieu of a state program.

8. Documents or studies referenced and/or reviewed for this rulemaking:

Not applicable

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

Not applicable

10. Summary of the economic, small business, and consumer impact:

The following discussion addresses each of the elements required for an economic, small business and consumer impact statement under A.R.S. § 41-1055.

An identification of the rulemaking.

This rulemaking revised Rule 323 (Fuel Burning from Industrial, Commercial, and Institutional (ICI) Sources).

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

The persons who will be directly affected by and bear the costs of this rulemaking will be facilities in Maricopa County that use ICI sources that burn either fossil fuels or alternative fuels where the sources include any of the following:

- Steam generating unit with a maximum design rated heat input capacity from fuels combusted in the unit of greater than 10 million BTU/hr;
- Stationary gas turbines with a heat input at peak load equal to or greater than 2.9 megawatts (MW);
- Cogeneration steam generating unit with a heat input of greater than 10 million Btu/hr;
- Indirect-fired process heater with a heat input greater than 10 million Btu/hr.

The department has issued permits to more than 130 facilities with sources applicable to Rule 323.

A cost benefit analysis of the following:

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

It is expected that the department will benefit from the increased clarity of the rule with decreased time to inspect a facility or prepare a permit. In addition, the rulemaking will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

The assumptions of savings with the rule revisions will be reviewed after rule implementation to confirm their effectiveness. However, the benefits of the rule revision are anticipated to be a result of the following changes:

- Applying limitations for fuel sulfur content to ultra low sulfur diesel (from “low sulfur fuel”) to be consistent with federal requirements;
- Changing NO_x limitations when burning gaseous fossil fuel from 155 ppm to 42 ppmdv, and when burning liquid gaseous fossil fuel from 230 ppm to 65 ppmdv to be consistent with federal requirements and what EPA considers to be RACT for NO_x.
- Clarifying compliance requirements that apply to a source in order to meet the NO_x limitations;
- Adding requirements for schedules pertaining to filing an Operation & Maintenance Plan (O&M) Plan, and when modifying or installing a new Emission Control System (ECS); and
- Clarifying compliance determination test methods that apply for determining fuel sulfur content, NO_x (and CO) emissions for boilers with a heat input capacity of 100 MMBtu per hour or greater, and methods for boilers equipped with continuous emission monitoring system (CEMS).

These revisions align Maricopa County requirements with existing federal performance standards. In addition, the sources subject to the revised Rule 323 already have permits in which these requirements are addressed. Therefore, this revised rule does not impose new requirements on the subject facilities, and no costs would be incurred for compliance with the rule revisions.

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

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

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

The department anticipates that increased clarity provided by the Rule 323 revisions will provide a benefit to the regulated community; it will take less time for sources subject to the rule to understand and comply with the rule, which leads to increased compliance, which leads to decreased costs of compliance to the regulated community. The department does not anticipate these rule revisions to have a significant impact on a person's income, revenue, or employment in this state related to this activity. The rule revision will not impose increased monetary or regulatory costs on individuals so regulated.

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

The rule revisions will not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated.

A statement of the probable impact of the rulemaking on small businesses.

The rule revisions will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated.

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

Small businesses subject to this rulemaking are those facilities in Maricopa County that use ICI sources that burn either fossil fuels or alternative fuels where the sources include any of the following:

a steam generating unit with a maximum design rated heat input capacity from fuels combusted in the unit of greater than 10 million BTU/hr; a stationary gas turbine with a heat input at peak load equal to or greater than 2.9 megawatts (MW); a cogeneration steam generating unit with a heat input of greater than 10 million Btu/hr; and, an indirect-fired process heater with a heat input greater than 10 million Btu/hr.

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

This rulemaking updated and clarified existing rule provisions and definitions to be consistent with federal performance standards, and reduce confusion and improve understanding and readability. The department considered the implications of the amendments to the regulated entities and the implementing agency and deemed that none of the rule revisions have potentially significant economic impacts.

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

(i) Establishing less costly compliance requirements in the rulemaking for small businesses.

By correcting and clarifying existing rule provisions and definitions, this rulemaking lessens or eases the regulatory burden for small businesses.

(ii) Establishing less costly schedules or less stringent deadlines for compliance in the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

(iii) Exempting small businesses from any or all requirements of the rulemaking.

This rulemaking corrects or clarifies existing rule provisions and definitions to reduce confusion and improve understanding and readability.

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

This rulemaking did not impose any new compliance burdens on regulated entities or introduce additional regulatory requirements and will not impose increased monetary or regulatory costs on any business, persons, or individuals so regulated. As such, there are no costs to pass through to consumers which means there are no impacts on consumers.

A statement of the probable effect on state revenues.

The rule revisions did not impose increased monetary or regulatory costs on other state agencies, political subdivisions of this state, persons, or individuals so regulated. Without costs to pass through to customers, there is no projected change in consumer purchase patterns and, thus, no impact on state revenues from sales taxes.

A description of any less intrusive or less costly alternative methods of achieving the purpose of the rulemaking.

This rulemaking corrected or clarified existing rule provisions and definitions to reduce confusion and improve understanding and readability.

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

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12. Description of the changes between the proposed rule, including supplemental notices and final rule:

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R 1134), the department made the following additional amendments:

- Section 104.1(c) (Partial Exemptions): Did not include new text “used in the following military training activities conducted by the Department of Defense: (1) military tactical training or (2) maintenance, repair, and removal of targets and munitions associated with military tactical training; or”. The U.S. Environmental Protection Agency (EPA) commented in June 2016 to remove this exemption or provide definitions for the terms “military training facilities” and “military gas turbines”

and demonstrate why these gas turbines should not be subject to the specified emission standards.

Deleted the partial exemption for stationary gas turbines used at military training facilities.

- Section 104.1(e) (Partial Exemptions): Did not include new text “and that are or will be incorporated in a permit” but included the text “...as allowed by a permit”.
- Section 104.2 (Partial Exemptions): Did not include new text “and that are or will be incorporated in a permit” but included the text “...as allowed by a permit”.
- Section 219 (Definition of “Steady State”): Added the definition of “Steady State”.
- Section 224 (Definition of “Waste Derived Fuel Gas”): Revised the definition of “Waste Derived Fuel Gas” to match the definition in Rule 324 (Stationary Internal Combustion (IC) Engines). Deleted “sewage sludge” from the list of examples of waste derived fuel gas because sewage sludge is not a gas.
- Section 301.1 (Limitations-Particulate Matter-Limitations-Liquid Fuels): Included new text “during steady state operations” after “in excess of 0.10 lbs. per MMBtu”.
- Section 301.3 (Limitations-Particulate Matter-Good Combustion Practices for Turbines): Included new text “during steady state operations” at the beginning of the first sentence.
- Section 304.1(a) (Limitations-Nitrogen Oxides): Included new text before the last sentence “for low emission burner systems that do not provide accessibility for combustion chamber inspection, burner inspection, or inspection of the flame pattern, an owner or operator shall provide documentation from the manufacturer and follow manufacture’s recommended procedure”, per comments from APS.
- Sections 304.1(b)(1) and (2) (Limitations-Nitrogen Oxides): Included new text “or other EPA-approved test method designated by the Control Officer” after the phrase “EPA Reference Method(s) 7”.
- Section 304.1(c) (Limitations-Nitrogen Oxides): Included new text “during steady state operations” at the end of the first sentence.
- Section 305 (Limitations-Carbon Monoxide): Included new text “during steady state operations and “or other EPA-approved test method designated by the Control Officer” in the second sentence. Added new text “during steady state operations” after “...corrected to 15% oxygen” in the second-to-the-last sentence.

- Section 306.1 (Requirements for Air Pollution Control Equipment and ECS Monitoring Equipment-Emission Control System): Included new text at the end-of the sentence “or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule”.
- Section 503.1 (Compliance Determination-Sulfur in Fuel Verification): Changed the headings of Sections 503.1, 503.1(a), and 503.1(b) to more clearly distinguish what the sections address.
- Section 503.1(a) (Compliance Determination-Sulfur in Fuel Verification-Ultra Low Sulfur Diesel): Revised the new text “sulfur content of the fuel oil to demonstrate the 0.0015% limits” to “sulfur content of the fuel to demonstrate the 0.0015% limit”. Revised the new text in Section 503.1(a)(6) from “testing of the fuel oil for sulfur content” to “test results of the fuel for sulfur content”
- Section 503.1(a) (Compliance Determination-Sulfur In Fuel Verification-Ultra Low Sulfur Diesel): Revised the new text after the list of items in Sections 503.1(a)(1)-(6). Changed “and utilize” to “or be based on”. Added “as approved by the Administrator” after “test methods”.
- Section 503.1(a)(4) (Compliance Determination-Sulfur In Fuel Verification-Ultra Low Sulfur Diesel): Removed Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) from the list of documentation of the sulfur content of the fuel oil, per the EPA comments.
- Sections 503.2(a) and (b) (Compliance Determination-Gaseous Emissions-Source Test): Did not include new text regarding specific test methods to be used to determine compliance with NO_x and CO and regarding discontinuing a scheduled source test. These requirements are addressed in performance testing protocol.
- Section 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS)): Did not include new text “NO_x” in the introductory statement. CEMS can be used for other pollutants. Introductory statement was revised to read in part: Compliance with the emission requirements specified...
- Section 504 (Compliance Determination-Test Methods Incorporated By Reference): Deleted the provision allowing test methods to be used upon sole approval by the Control Officer. Added text that allows test methods as approved by the Administrator to be used, per the EPA’s comments.

13. Summary of the comments made regarding the rule and the department response to them:

Since the Notice of Proposed Rulemaking was published on May 13, 2016 (22 A.A.R. 1134), the department received comments from the Arizona Public Service Company (APS) and the U.S. Environmental Protection Agency (EPA). The comments and the department's responses are provided below.

Comment #1: Sections 104.1(c) (Partial Exemptions)

The EPA asks that the County clarify the exceptions for units at military training facilities, as this is not defined.

Response #1: Section 104.1(c) (Partial Exemptions)

The department did not include new text "used in the following military training activities conducted by the Department of Defense: (1) military tactical training or (2) maintenance, repair, and removal of targets and munitions associated with military tactical training; or..." The department deleted the partial exemption for stationary gas turbines used at military training facilities.

Comment #2: Sections 104.1(e) and (f) (Partial Exemptions)

The EPA asks that the County include appropriate limits on the length of emergency condition and alternative emergency limits for units fired with emergency fuel that are otherwise normally fired with natural gas.

Response #2: Sections 104.1(e) and (f) (Partial Exemptions)

The department included source specific limitations on emergency fuel use as allowed by a permit issued by the Control Officer.

Comment #3: Section 301.3 (Limitations-Particulate Matter-Good Combustion Practices for Turbines)

The EPA asks the County to define the frequency of monitoring required to comply with the provisions of "good combustion practices" for turbines.

Response #3: Section 301.3 (Limitations-Particulate Matter-Good Combustion Practices for Turbines)

The department included text regarding the frequency of monitoring temperature differential across the combustion burners.

Comment #4: Section 304.1(a) (Limitations-Nitrogen Oxides)

During the County workshops discussing Rule 323, APS brought to the County's attention the dilemma caused by the inspection requirements related to boilers. APS has installed a Clayton Boiler on its process

equipment. This boiler is a state-of-the-art boiler and as such has a sealed burner chamber which does not allow for inspection of the combustion chamber, burner or flame pattern as required under Section 304.1(a). Rather than be penalized for having such an advanced and efficient burner that does not allow for inspection, APS suggested that the County provide an exception to allow APS to operate the burner in compliance with the manufacturer's recommended procedures. At the time of the workshops, the County was open to the suggestion and offered no indication that it would not approve such a solution. APS hopes this was an oversight on the County's part, but if the County should need additional information, please let APS know and APS will be happy to provide it.

Response #4: Section 304 (Limitations-Nitrogen Oxides)

The department included new text before the last sentence "for low emission burner systems that do not provide accessibility for combustion chamber inspection, burner inspection, or inspection of the flame pattern, an owner or operator shall provide documentation from the manufacturer and follow manufacture's recommended procedure".

Comment #5: Section 306.1 (Requirements for Air Pollution Control Equipment and ECS Monitoring Equipment-Emission Control System)

A facility may comply with the emission limits in the rule by installing and operating an emission control system (ECS). While an ECS may be one possible way to meeting emission limits, it generally cannot substitute for meeting limits, unless specific control measures or a percent effectiveness are defined as a part of the required ECS that may be approved by the Control Officer. The definition of ECS at Section 206 also allows discretion to the Control Officer on the types of required control devices, practices, and monitoring needs for an effective ECS. The EPA asks the County to either define a set of specific required control technologies or practices that must be a part of any effective ECS or define a required emissions reduction (for example, 80% reduction of existing NO_x emissions).

Response #5: Section 306.1 (Requirements for Air Pollution Control Equipment and ECS Monitoring Equipment-Emission Control System)

The department included new text at the end-of the sentence in Section 306.1 "or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule".

Comment #6: Section 503.1(a) (Compliance Determination-Ultra Low Sulfur Diesel Verification)

This section allows for various documents to verify compliance with the ultra-low sulfur diesel fuel limit. The EPA asks the County to ensure the documents listed give accurate values and use enforceable test methods. For example, EPA generally has not approved the use of Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) to determine compliance in SIP rules unless the SDS/MSDS specifies that the compound of interest was determined by an approved EPA method.

Response #6: Section 503.1(a) (Compliance Determination-Ultra Low Sulfur Diesel Verification)

The department removed Safety Data Sheets (SDS)/Material Safety Data Sheets (MSDS) from the list of documentation of the sulfur content of the fuel oil in Section 503.1(a)(4).

Comment #7: Section 503.2(a) (Compliance Determination-Gaseous Emissions-Source Test)

This section states that no compliance determinations will be made during startup and shutdown. This does not align with EPA's startup, shutdown, and malfunction (SSM) policy, particularly in the case of CEMS-equipped units. The EPA asks the County to include alternative numerical limits for operations during these periods, require best operating practices, or require that units comply with the standard limits during SSM events.

Response #7: Section 503.2(a) (Compliance Determination-Gaseous Emissions-Source Test)

The department removed text regarding compliance determinations during startup and shutdown.

Comment #8: Section 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS))

This section states that no compliance determinations will be made during startup and shutdown. This does not align with EPA's startup, shutdown, and malfunction (SSM) policy, particularly in the case of CEMS-equipped units. The EPA asks the County to include alternative numerical limits for operations during these periods, require best operating practices, or require that units comply with the standard limits during SSM events.

Response #8: Section 503.3 (Compliance Determination-Gaseous Emissions-Continuous Emission Monitoring System (CEMS))

The department removed text regarding compliance determinations during startup and shutdown.

Comment #9: Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

Alternative test methods may not be used upon sole approval by the Control Officer. The EPA asks the County to remove this provision or include language that also requires EPA approval for alternative methods.

Response #9: Section 504 (Compliance Determination-Test Methods Incorporated By Reference)

The department deleted the provision allowing test methods to be used upon sole approval by the Control Officer and added text that allows test methods as approved by the Administrator to be used.

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

Not applicable

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

The department incorporated by reference sections of the Code of Federal Regulations in Section 504 (Compliance Determination-Test Methods Incorporated by Reference)

16. Was this rule previously an emergency rule?

No

17. Full text of the rule follows:

MARICOPA COUNTY

AIR POLLUTION CONTROL 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 11/02/2016

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
 - e.** ~~Used at military training facilities other than a garrison facility; or~~

- ~~d.~~ **c.** Engaged by manufacturers in research and the development of equipment for either gas turbine emission control techniques or gas turbine efficiency improvements; or
- e. **d.** Fired with emergency fuel that is normally fired with natural gas, or
- f. **e.** ~~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 or less, per unit for testing, reliability, training, and maintenance purposes as allowed by a permit issued by the Control Officer for that source.

104.2 All steam generating units including cogeneration units and process heaters that are used for any of the following reasons as allowed by a permit issued by the Control Officer 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 or less.

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.

219 **STEADY STATE:** A safe, stable megawatt load at which a unit with equipment in normal operating conditions is capable of being held for an extended period of time, without creating an unsafe or unstable operating condition.

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

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

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

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

~~223~~ 224 **WASTE DERIVED FUEL GAS:** ~~Any~~ A gaseous fuel that is generated from the biodegradation of solid or liquid waste including, but not limited to, ~~sewage sludge,~~ digester gas and landfill gas.

~~224~~ 225 **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, during steady state operations, 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: During steady state operations, ~~An~~ 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. Differential temperatures across the burners to demonstrate good combustion practices shall be measured from at least one minute data point during a complete steady state operating hour. 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
- 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~~ follow the manufacturer's recommended procedure, if applicable, that will include the following at a minimum: For low emission burner systems that do not provide accessibility for combustion chamber inspection, burner inspection, or inspection of the flame pattern, an owner or operator shall provide documentation from the manufacturer and follow manufacturer's recommended procedure. If using good combustion practices, the owner or operator shall 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 ppm dv calculated as nitrogen dioxide, when burning gaseous fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer 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 ppm calculated as nitrogen dioxide, when burning liquid fuel. During steady state operations, this test result using EPA Reference Method(s) 7 or other EPA-approved test method designated by the Control Officer 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, during steady state operations. 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~~ During steady state operations, this test result, using EPA Reference Method 10 or other EPA-approved test method designated by the Control Officer, 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, during steady state operations. 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) or a combustion control system which reduces emissions to below the applicable standards in Section 300 of this rule.

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 July 2, 2017 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 equipment for compliance with this rule shall by July 2, 2016 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 November 2, 2018.

401.3 ECS Installation: An owner or operator required to install an ECS for compliance with this rule shall by July 2, 2017 file a schedule for the installation with the Control Officer. The ECS shall then be installed and in compliance by November 2, 2019.

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 Verification~~ Sulfur In Fuel 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 **Ultra Low Sulfur Diesel:** If the Control Officer requests documentation of the sulfur content of the fuel to demonstrate the 0.0015% limit, the owner or operator shall submit one of the following:~~

- (1) Fuel receipts, or
- (2) Contract specifications, or
- (3) Pipeline meter tickets, or
- (4) Fuel supplier information, or
- (5) Purchase records, or
- (6) Test results of the fuel for sulfur content

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

- 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~~ **Waste Derived Fuel Gas:** 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. The sulfur content of gaseous fuels shall be determined by South Coast Air Quality Management District Method 307-94 Determination of Sulfur in a Gaseous Matrix.
- e. ~~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 ~~40 MMBtu~~ 100 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.

503.3 Gaseous Emissions-Continuous Emission Monitoring System (CEMS): Compliance with the emission requirements specified in Sections 301 through 304 of this rule may also be determined using CEMS. 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 following test methods are approved for use for the purpose of determining compliance with this rule. The test methods ~~The EPA test methods as they exist in the Code of Federal Regulations (CFR) (July 1, 2004), as listed below,~~ are incorporated by reference in Appendix G of the Maricopa County Air Pollution Control Regulations. Alternative test methods as approved by the Administrator or other EPA-approved test methods may be used upon written approval from the Control Officer. When more than one test method is permitted for the same determination, an exceedance under any method will constitute a violation. Copies of test methods referenced in this section are available at the Maricopa County Air Quality Department, 1001 N. Central Avenue, Suite 125, Phoenix, AZ 85004-1942. ~~When more than one test method, as listed in subsections 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 D2622-98,~~ (“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 **504.12** ~~American Society of Testing Materials, ASTM Method D2880-00~~ D2880-96, (“Standard Specification for Gas Turbine Fuel Oils”), 2000
- 504.14 **504.13** ~~American Society of Testing Materials, ASTM Method D4294-90 or 98~~ D4294-02 or D4294-03, (“Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy- Dispersive X-ray Fluorescence Spectrometry”), 1990 or 1998.
- 504.15 **504.14** ~~American Society of Testing Materials, ASTM Method D5504-01 or D5504-08~~, (“Standard Test Method for Determination of Sulfur compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence”), 2006.
- 504.15** South Coast Air Quality Management District Method 307-94 Determination of Sulfur in a Gaseous Matrix